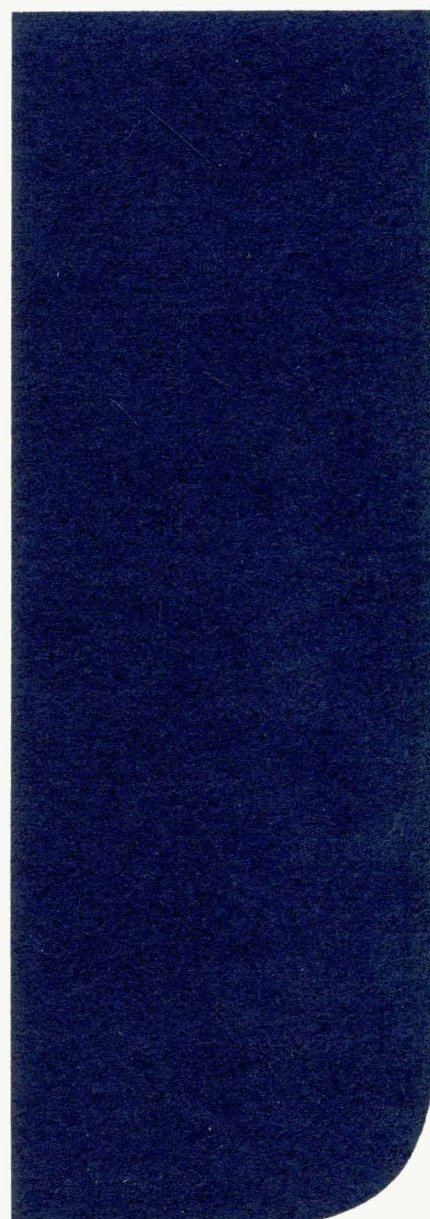
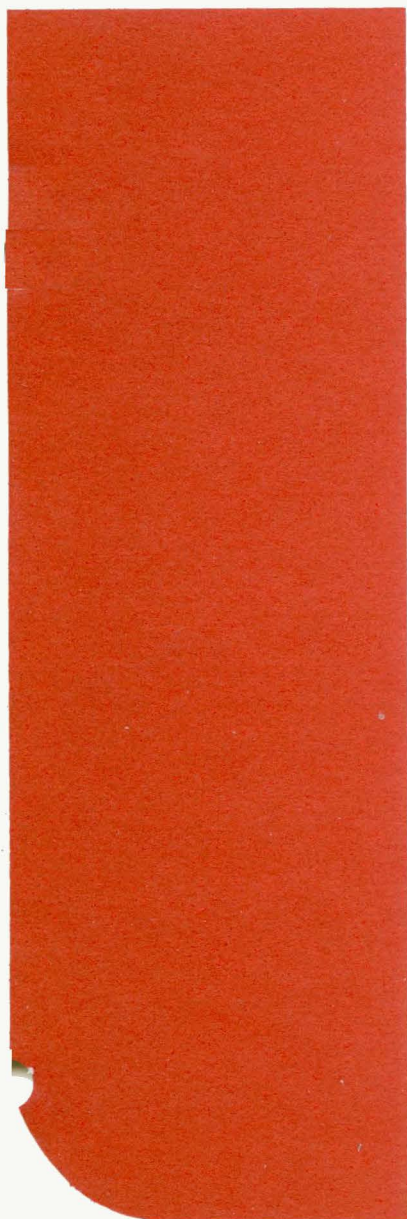


USAS
X3.12-1966

USAS standard

**Vocabulary for
Information
Processing**



USAS
X3.12-1966

**USA Standard
Vocabulary for
Information
Processing**

Sponsor
Business Equipment Manufacturers Association

Approved June 14, 1966

USA Standard

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Foreword

(This Foreword is not part of USA Standard Vocabulary for Information Processing. X3.12-1966.)

The communication of facts and ideas in a technical or scientific society is dependent on a mutual understanding of the terms used. A vocabulary is a document that contains a collection of defined terms for a particular subject area, and also includes introductory material to explain its use. In a rapidly growing field such as information processing, a common source of terms and their meanings is necessary for such communication.

For a long time, a need existed in the field of information processing for such a common source of reference; i.e., a vocabulary. This situation was recognized and numerous vocabularies were produced. In general, these vocabularies were not broad enough in scope to meet the common need for an overall reference.

Information processing both influences and is influenced by every field of interest that it touches. Therefore, an information processing vocabulary must be applicable as far as possible to the information processing aspects of all these fields.

The ASA Subcommittee X3.5 on Vocabulary was directed by Sectional Committee X3 to prepare a general vocabulary for information processing. Such a vocabulary cannot be developed by simply combining the existing vocabularies, but only by the analysis of the usage of terms throughout these fields. Subcommittee X3.5 collected existing vocabularies in information processing to serve as the source of terms and definitions. These terms and definitions were studied, and new definitions were then written.

The terms presented in this vocabulary are part of a natural language that is constantly changing and expanding. Suggestions for changes or additions to this document can be addressed to the United States of America Standards Institute, 10 East 40th Street, New York, N. Y. 10016.

The ASA Sectional Committee on Computers and Information Processing, X3, had the following personnel at the time of approval:

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V. E. Henriques, *Secretary*

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The members of ASA Subcommittee X3.5, Terminology and Glossary, that were responsible for the development of this standard, are as follows:

M. H. Weik, *Chairman*

W. B. Fritz, *Vice-Chairman*

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USA Standard

Vocabulary for Information Processing

1. Purpose and Scope

1.1 Purpose. The purpose of this standard is to present a selected body of terms relevant to the field of information processing, and to establish the corresponding meanings for these terms.

1.2 Scope. This standard is a body of terms whose individual meanings are different in the information processing field from their meanings in the general technical vocabulary. This standard also includes the specifications for the body of this vocabulary, and the rules for preparing the entries for this vocabulary.

It does not include those terms whose meanings are commonplace, the meanings of terms found in our everyday nontechnical vocabulary, nor the many special meanings that are arbitrarily assigned.

2. Definitions of Terms Used in the Standard Vocabulary

The following definitions are pertinent to an understanding of this document:

Acronym. A word formed from the first letter or letters of the successive words of a multiple word term.

Annotation. An added descriptive comment or explanatory note.

Body. The collection of entries.

Commentary. A collection of items for a term, or the definition or explanation associated with a term.

Defining Phrase. An incomplete sentence that states the meaning of a term.

Entry. A term and its commentary.

Item. One separate, enumerated meaning for a term with several meanings, or the commentary for a single meaning.

Item Number. A number that is assigned in sequence to each item in a commentary.

Natural Order Term. A multiple word term that is written in spoken sequence; e.g., "binary coded decimal."

Reference. A symbol or phrase that directs the user to another entry or to another item.

Term. The word or phrase to be defined.

Usage Label. A phrase that indicates the area or manner of usage.

Vocabulary. A document that contains a collection of defined terms for a particular subject area, and also includes introductory material to explain its use.

3. Organization of the Standard Vocabulary

The body of the vocabulary is the collection of entries, where each entry consists of a term and its commentary. For single word terms, only one entry is included. For multiple word terms, the defining phrase appears in the commentary with the term in natural order. Multiple word terms with the same last word are collected and appear together as an item for that word.

For different terms with the same meaning (synonyms), the defining phrase appears with the entry for the preferred term; and a "Same as" reference to the preferred term appears with the deprecated term or terms.

For terms with several meanings, the meanings are each listed as a separate item in the commentary, and each item is numbered sequentially. In this instance, the most common meaning or the most general meaning appears as item number one.

For terms that are acronyms or abbreviations, the commentary includes the unabbreviated term as well as the defining phrase, annotation, etc.

3.1 Arrangement of Entries. In this vocabulary, the collating sequence for entries is the same as found in the USASCII code (USA Standard Code for Information Interchange, X3.4); that is, blank space, hyphen, slash, 0-9, and A-Z.

3.2 Organization of an Entry. An entry consists of a term followed by its commentary. When a commentary includes several different meanings for that term, each meaning is a separate item. When the commentary is used to reference all the terms with the same last word, it lists all these terms in natural order and precedes this list by a "See" reference.

3.2.1 Selection of a Term. The term is the word or phrase to be defined. In this vocabulary, the infinitive form of a verb and the singular form of a noun are the terms most often selected to be defined.

3.2.2 Organization of a Commentary. A commentary consists of one or more items. Each item may be constructed from among the following parts and in the following order: item number, usage label, unabbreviated term, defining phrase, annotation, reference.

(1) *Item Number.* Each item in a commentary is numbered consecutively starting with item number (1). If the commentary consists of only one item, the item number is omitted. The item number is enclosed in parentheses.

(2) *Usage Label.* This label is a word or phrase that indicates the area or manner of usage to be associated with the item. For example, the label "programming" indicates an area of usage, and the label "loosely" indicates a manner of usage. The usage label is followed by a comma.

(3) *Unabbreviated Term.* If the term being defined is an acronym or abbreviation, the full, unabbreviated term is enclosed in parenthesis.

(4) *Defining Phrase.* This states the meaning of the term, and may be assumed to be preceded by the phrase, "A definition of (the term) is." The part of speech being defined is indicated by the first word in the defining phrase, where the word "to" indicates a verb, "pertaining to" indicates a modifier, and "a," "the," "an," "any," "each of," etc, indicate a noun. The defining phrase is followed by a period. In a de-

fining phrase, the abbreviations "e.g." and "i.e." are used. (e.g., for example; i.e., that is.)

(5) *Annotation.* This added note consists of any number of complete sentences. These sentences follow the defining phrase and provide descriptive or explanatory information for that defining phrase. In an annotation, the same abbreviations are used as are listed for a defining phrase.

(6) *Reference.* A reference consists of a symbol or phrase to direct the user to another item in the commentary or to another entry in the vocabulary. The reference symbols (Contrast with, Same as, See, Synonymous with) explain the nature of the reference as follows:

Contrast with. This indicates that the preceding defining phrase gives a meaning different from that of the referenced term, and this difference should be pointed out to the reader.

Same as. This indicates that the defining phrase is exactly the same as for the referenced term, and the referenced term is the preferred term.

See. This references the multiple word terms with the same last word.

Synonymous with. This indicates that the referenced term has referred to this term by means of a "Same as" reference symbol.

Underline. This indicates that the underlined term is significant in the definition and has been defined elsewhere in the vocabulary.

4. The Standard Vocabulary

Absolute Address. (1) An address that is permanently assigned by the machine designer to a storage location. (2) A pattern of characters that identifies a unique storage location without further modification. (3) Synonymous with Machine Address.

Absolute Error. (1) The amount of error expressed in the same units as the quantity containing the error. (2) Loosely, the absolute value of the error, i.e., the magnitude of the error without regard to its algebraic sign.

Access. See Random Access, Serial Access.

Access Mode. In COBOL, a technique that is used to obtain a specific logic record from, or to place a specific logic record into, a file assigned to a mass storage device.

Access Time. (1) The time interval between the instant at which data are called for from a storage device and the instant delivery is completed, i.e., the read time. (2) The time interval between the instant at which data are requested to be stored and the instant at which storage is completed, i.e., the write time.

Accounting Machine. (1) A keyboard actuated machine that prepares accounting records. (2) A machine that reads data from external storage media, such as cards or tapes, and automatically produces accounting records or tabulations, usually on continuous forms.

Accumulator. A register in which the result of an arithmetic or logic operation is formed.

Accuracy. The degree of freedom from error, that is, the degree of conformity to truth or to a rule. Accuracy is contrasted with precision, e.g., four-place numerals are less precise than six-place numerals, nevertheless a properly computed four-place numeral might be more accurate than an improperly computed six-place numeral.

Acoustic Delay Line. A delay line whose operation is based on the time of propagation of sound waves. Synonymous with Sonic Delay Line.

Actual Key. In COBOL, a data item that may be used as a hardware address and that expresses the location of a record on a mass storage medium.

Adapting. See Self-Adapting.

Adder. (1) A device whose output is a representation of the sum of the quantities represented by its inputs. (2) See Half-Adder.

Address. (1) An identification, as represented by a name, label, or number, for a register, location in storage, or any other data source or destination such as the location of a station in a communication network. (2) Loosely, any part of an instruction that specifies the location of an operand for the instruction. (3) See Absolute Address, Base Address, Content

Addressed Storage, Direct Address, Effective Address, Four-Plus-One Address, Immediate Address, Indirect Address, Machine Address, Multi-Address, Multilevel Address, N-Level Address, One-Level Address, One-Plus-One Address, Relative Address, Symbolic Address, Three-Plus-One Address, Two-Plus-One Address, Zero-Level Address.

Address Format. The arrangement of the address parts of an instruction. The expression "Plus-One" is frequently used to indicate that one of the addresses specifies the location of the next instruction to be executed, such as one-plus-one, two-plus-one, three-plus-one, four-plus-one.

Address Part. A part of an instruction word that specifies the address of an operand.

Address Register. A register in which an address is stored.

Adjacency. In character recognition, a condition in which the character spacing reference lines of two consecutively printed characters printed on the same line are separated by less than a specified distance.

ADP (Automatic Data Processing). Pertaining to data processing equipment such as EAM and EDP equipment.

ALGOL (ALGorithmic Oriented Language). An international procedure-oriented language.

Algorithm. A prescribed set of well-defined rules or processes for the solution of a problem in a finite number of steps, e.g., a full statement of an arithmetic procedure for evaluating $\sin x$ to a stated precision. Contrast with Heuristic.

Algorithmic Language. A language designed for expressing algorithms.

Allocation. See Storage Allocation.

Alphabet. An ordered set of unique representations called characters, e.g., the 26 letters of the Roman alphabet, 0 and 1.

Alphameric. Same as Alphanumeric.

Alphanumeric. Pertaining to a character set that contains both letters and numerals, and usually other characters. Synonymous with Alphameric.

Analog. Pertaining to data in the form of continuously variable physical quantities. Contrast with Digital.

Analog Computer. A computer that operates on analog data by performing physical processes on these data. Contrast with Digital Computer.

Analysis. (1) The methodical investigation of a problem, and the separation of the problem into smaller related units for further detailed study. (2) See Numerical Analysis.

Analyst. A person who defines problems and develops algorithms and procedures for their solution.

Analyzer. See Differential Analyzer, Digital Differential Analyzer, Network Analyzer.

AND. A logic operator having the property that if P is a statement, Q is a statement, R is a statement...., then the AND of P, Q, R.... is true if all statements are true, false if any statement is false. P and Q is often represented by $P \cdot Q$, PQ , $P \wedge Q$.

AND Gate. A gate that implements the logic "AND" operator.

Annotation. An added descriptive comment or explanatory note.

Area. See Clear Area.

Argument. An independent variable, e.g., in looking up a quantity in a table, the number, or any of the numbers, that identifies the location of the desired value.

Arithmetic Shift. (1) A shift that does not affect the sign position. (2) A shift that is equivalent to the multiplication of a number by a positive or negative integral power of the radix.

Arithmetic Unit. The unit of a computing system that contains the circuits that perform arithmetic operations.

Artificial Intelligence. The capability of a device to perform functions that are normally associated with human intelligence, such as reasoning, learning, and self improvement. Related to Machine Learning.

Artificial Language. A language based on a set of prescribed rules that are established prior to its usage. Contrast with Natural Language.

ASCII. American Standard Code for Information Interchange, X3.4¹

Assemble. To prepare a machine language program from a symbolic language program by substituting absolute operation codes for symbolic operation codes and absolute or relocatable addresses for symbolic addresses.

Assembler. A program that assembles.

Associative Storage. A storage device in which storage locations are identified by their contents, not by names or positions. Synonymous with Content Addressed Storage, Parallel Search Storage.

Asynchronous Computer. A computer in which each event or the performance of each operation starts as a result of a signal generated by the completion of the previous event or operation, or by the availability of the parts of the computer required for the next event or operation.

Automatic Carriage. A control mechanism for a typewriter or other listing device that can automatically control the feeding, spacing, skipping, and ejecting of paper or preprinted forms.

Automatic Check. A check performed by equipment built in specifically for checking purposes. Synonymous with Built-In Check. Contrast with Programmed Check.

Automatic Coding. The machine-assisted preparation of machine language routines.

Automatic Computer. A computer that can perform a sequence of operations without intervention by a human operator.

Automatic Data Processing. See ADP.

Automatic Programming. The process of using a computer to perform some stages of the work involved in preparing a program.

Automation. (1) The implementation of processes by automatic means. (2) The theory, art, or technique of making a process more automatic. (3) The investigation, design, development, and application of methods of rendering processes automatic, self-moving, or self-controlling.

Auxiliary Operation. An operation performed by equipment not under continuous control of the central processing unit.

Auxiliary Storage. A storage that supplements another storage.

B Box. Same as Index Register.

Band. A group of circular recording tracks on a storage device such as a drum or disc.

Base. (1) A reference value. (2) Same as Radix.

Base Address. A given address from which an absolute address is derived by combination with a relative address.

Baud. A unit of signalling speed equal to the number of discrete conditions or signal events per second. For example, one baud equals one half dot cycle per second in Morse code, one bit per second in a train of binary signals, and one 3-bit value per second in a train of signals each of which can assume one of 8 different states.

Benchmark Problem. A problem used to evaluate the performance of computers relative to each other.

Bias. The amount by which the average of a set of values departs from a reference value.

Bidirectional Flow. In flowcharting, flow that can be extended over the same flowline in either direction.

Binary. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are two possibilities. (2) Pertaining to the numeration system with a radix of two. (3) See Column Binary, Row Binary.

Binary Cell. A storage cell of one binary digit capacity, e.g., a single bit register.

Binary Code. (1) A code that makes use of exactly two

¹All American Standards are now designated USA Standards.

distinct characters, usually 0 and 1. (2) See Reflected Binary Code.

Binary Coded Decimal. Pertaining to a decimal notation in which the individual decimal digits are each represented by a group of binary digits, e.g., in the 8-4-2-1 binary coded decimal notation, the number twenty-three is represented as 0010 0011 whereas in binary notation, twenty-three is represented as 10111.

Binary Digit. (1) A character used to represent one of the two digits in the numeration system with a radix of two. Abbreviated "Bit." (2) See Equivalent Binary Digits.

Binary Number. Loosely, a binary numeral.

Binary Numeral. The binary representation of a number, e.g., "101" is the binary numeral and "V" is the Roman numeral of the number of fingers on one hand.

Binary Search. A search in which a set of items is divided into two parts, one part is rejected, and the process is repeated on the accepted part until those items with the desired property are found. Synonymous with Dichotomizing Search.

Bionics. A branch of technology relating the functions, characteristics, and phenomena of living systems to the development of hardware systems.

Biquinary. Pertaining to the number representation system in which each decimal digit N is represented by the digit pair AB , where $N = 5A + B$, and where $A = 0$ or 1 and $B = 0, 1, 2, 3, \text{ or } 4$; e.g., decimal 7 is represented by biquinary 12. This system is sometimes called a mixed radix system having the radices 2 and 5.

Bistable. Pertaining to a device capable of assuming either one of two stable states.

Bit. (1) A binary digit. (2) See Check Bit, Parity Bit.

Blank Character. A character used to produce a character space on an output medium.

Block. A set of things, such as words, characters, or digits, handled as a unit.

Block Diagram. A diagram of a system, instrument, computer, or program in which selected portions are represented by annotated boxes and interconnecting lines.

Boolean. (1) Pertaining to the processes used in the algebra formulated by George Boole. (2) Pertaining to the operations of formal logic.

Bootstrap. A technique or device designed to bring itself into a desired state by means of its own action, e.g., a machine routine whose first few instructions are sufficient to bring the rest of itself into the computer from an input device.

Borrow. An arithmetically negative carry.

Boundary. See Character Boundary.

Box. See B Box.

Branch. (1) A set of instructions that are executed between two successive decision instructions. (2) To select a branch as in [1]. (3) Loosely, a conditional jump.

Branchpoint. A place in a routine where a branch is selected.

Breakpoint. A place in a routine specified by an instruction, instruction digit, or other condition, where the routine may be interrupted by external intervention or by a monitor routine.

Buffer. (1) A storage device used to compensate for a difference in rate of flow of data, or time of occurrence of events, when transmitting data from one device to another. (2) An isolating circuit used to prevent a driven circuit from influencing the driving circuit.

Built-In Check. Same as Automatic Check.

Bus. One or more conductors used for transmitting signals or power.

Business Data Processing. Data processing for business purposes, e.g., recording and summarizing the financial transactions of a business.

Byte. A sequence of adjacent binary digits operated upon as a unit and usually shorter than a word.

Calculator. (1) A device capable of performing arithmetic. (2) A calculator as in (1) that requires frequent manual intervention. (3) Generally and historically, a device for carrying out logic and arithmetic digital operations of any kind.

Call. (1) To transfer control to a specified closed-subroutine. (2) In communications, the action performed by the calling party, or the operations necessary in making a call, or the effective use made of a connection between two stations.

Calling Sequence. A specified arrangement of instructions and data necessary to set up and call a given subroutine.

Capacity. See Storage Capacity.

Card. See Magnetic Card, Punched Card, Tape to Card.

Card Hopper. A device that holds cards and makes them available to a card feed mechanism. Synonymous with Input Magazine. Contrast with Card Stacker.

Card Image. A one-to-one representation of the contents of a punched card, e.g., a matrix in which a 1 represents a punch and a 0 represents the absence of a punch.

Card Stacker. An output device that accumulates punched cards in a deck. Contrast with Card Hopper.

Carriage. See Automatic Carriage.

Carriage Return. The operation that causes the next character to be printed at the left margin.

Carry. (1) One or more characters, produced in connection with an arithmetic operation on one digit place of two or more numerals in positional notation, that are forwarded to another digit place for processing there. (2) The number represented by the character or characters in [1]. (3) Most commonly, a character, as defined in [1], that arises when the sum of two or more digits equals or exceeds the radix of the number representation system. (4) Less commonly, a Borrow. (5) To forward a Carry. (6) The command directing that a Carry be forwarded. (7) See Cascaded Carry, End-Around Carry, High-Speed Carry, Partial Carry, Standing-On-Nines Carry.

Cascaded Carry. In parallel addition, a carry process in which the addition of two numerals results in a partial sum numeral and a carry numeral which are in turn added together, this process being repeated until no new carries are generated. Contrast with High-Speed Carry.

Cell. See Binary Cell, Storage Cell.

Centerline. See Stroke Centerline.

Central Processing Unit. The unit of a computing system that includes the circuits controlling the interpretation and execution of instructions.

Chad. The piece of material removed when forming a hole or notch in a storage medium such as punched tape or punched cards.

Chadded. Pertaining to the punching of tape in which chad results.

Chadless. Pertaining to the punching of tape in which chad does not result.

Chain Code. An arrangement in a cyclic sequence of some or all of the possible different N-Bit words, in which adjacent words are related such that each word is derivable from its neighbor by displacing the bits one digit position to the left, or right, dropping the leading bit, and inserting a bit at the end. The value of the inserted bit needs only to meet the requirement that a word must not recur before the cycle is complete, e.g., 000 001 010 101 011 111 110 100 000...

Channel. (1) A path along which signals can be sent, e.g., data channel, output channel. (2) The portion of a storage medium that is accessible to a given reading station, e.g., track, band. (3) In communication, a means of one way transmission. Contrast with Circuit.

Character. (1) An elementary mark or event that is used to represent data. A character is often in the form of a graphic spatial arrangement of connected or adjacent strokes. (2) See Blank Character, Check Character, Control Character, Escape Character, Special Character.

Character Boundary. In character recognition, the largest rectangle, with a side parallel to the document reference edge, each of whose sides is tangential to a given character outline.

Character Outline. The graphic pattern established by the stroke edges of a character.

Character Recognition. The identification of graphic, phonic, or other characters by automatic means. See Magnetic Ink, Character Recognition, Optical Character Recognition.

Character Spacing Reference Line. In character recognition, a vertical line that is used to evaluate the horizontal spacing of characters. It may be a line that equally divides the distance between the sides of a character boundary or that coincides with the centerline of a vertical stroke.

Check. See Automatic Check, Built-In Check, Duplication Check, Echo Check, Marginal Check, Modulo N Check, Odd-Even Check, Parity Check, Programmed Check, Residue Check, Selection Check, Self-Checking Code, Summation Check, Transfer Check.

Check Bit. A binary check digit.

Check Character. A character used for the purpose of performing a check.

Check Digit. A digit used for the purpose of performing a check.

Checkpoint. A place in a routine where a check, or a recording of data for restart purposes, is performed.

Circuit. In communications, a means of two-way communication between two points, comprising associated "Go" and "Return" channels. Contrast with Channel.

Circulating Register. A Shift Register in which data moved out of one end of the register are reentered into the other end as in a closed loop.

Clear. (1) To place a storage device into a prescribed state, usually that denoting zero or blank. (2) To place a binary cell into the zero state.

Clear Area. In character recognition, a specified area that is to be kept free of printing or any other markings not related to machine reading.

Clock. (1) A device that generates periodic signals used for synchronization. (2) A device that measures and indicates time.

Closed Subroutine. A subroutine that can be stored at one place and can be connected to a routine by linkages at one or more locations. Contrast with Open Subroutine.

COBOL. (Common Business Oriented Language.) A business data processing language.

Code. (1) A set of rules that is used to convert data from one representation to another, e.g., the set of correspondences in the American Standard Code for Information Interchange, X3.4² (2) The set of representations defined by the set of rules as in (1), e.g., a coded character set as in the above American Stan-

²All American Standards are now designated USA Standards.

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standard Code or the repertory of instructions for a particular computer. (3) Same as Encode. (4) See Binary Code, Chain Code, Computer Code, Error Correcting Code, Error Detecting Code, Excess Three Code, Gray Code, Instruction Code, Machine Code, Minimum Distance Code, Operation Code, Reflected Binary Code, Self-Checking Code, Two-Out-Of-Five Code.

Coded. See Binary Coded Decimal.

Coding. See Automatic Coding, Relative Coding, Skeletal Coding, Straight Line Coding, Symbolic Coding.

Collate. To compare and merge two or more similarly ordered sets of items into one ordered set.

Collating Sequence. An ordering assigned to a set of items, such that any two sets in that assigned order can be collated.

Collator. A device to collate sets of punched cards or other documents into a sequence.

Color. In OCR, the spectral appearance of the image dependent upon the spectral reflectance of the image, the spectral response of the observer, and the spectral composition of incident light.

Column. (1) A vertical arrangement of characters or other expressions. (2) Loosely, a digit place.

Column Binary. Pertaining to the binary representation of data on punched cards in which adjacent positions in a column correspond to adjacent bits of data, e.g., each column in a 12-row card may be used to represent 12 consecutive bits of a 36-bit word.

Combinational Logic Element. A device having at least one output channel and zero or more input channels, all characterized by discrete states, such that the state of each output channel is completely determined by the contemporaneous states of the input channels.

Command. (1) A control signal. (2) Loosely, an instruction in machine language. (3) Loosely, a mathematical or logic operator.

Communication Link. The physical means of connecting one location to another for the purpose of transmitting and receiving information.

Compile. To prepare a machine language program from a computer program written in another programming language by making use of the overall logic structure of the program, or generating more than one machine instruction for each symbolic statement, or both, as well as performing the function of an assembler.

Compiler. A program that compiles.

Complement. See Nines Complement, Ones Complement, Radix Complement, Radix-Minus-One Complement, Tens Complement, True Complement, Twos Complement.

Component. See Solid State Component.

Computer. (1) A device capable of solving problems by accepting data, performing prescribed operations on the data, and supplying the results of these operations. Various types of computers are calculators, digital computers, and analog computers. (2) In information processing, usually, an automatic stored program computer. (3) See Analog Computer, Asynchronous Computer, Automatic Computer, Digital Computer, General Purpose Computer, Incremental Computer, Special Purpose Computer, Stored Program Computer, Synchronous Computer.

Computer Code. A machine code for a specific computer.

Computer Instruction. A machine instruction for a specific computer.

Computer Network. A complex consisting of two or more interconnected computing units.

Computer Program. A plan or routine for solving a problem on a computer, as contrasted with such terms as fiscal program, military program, and development program.

Computer Word. A sequence of bits or characters treated as a unit and capable of being stored in one computer location. Synonymous with Machine Word.

Conditional Jump. A jump that occurs if specified criteria are met.

Connector. In flowcharting the means of representing the convergence of more than one flowline into one, or the divergence of one flowline into more than one. It may also represent a break in a single flowline for continuation in another area.

Console. That part of a computer used for communication between the operator or maintenance engineer and the computer.

Content Addressed Storage. Same as Associative Storage.

Contrast. (1) In OCR, the differences between color or shading of the printed material on a document and the background on which it is printed. (2) See Print Contrast Ratio.

Control. See Numerical Control, Sequential Control.

Control Character. A character whose occurrence in a particular context initiates, modifies, or stops a control operation, e.g., a character to control carriage return.

Control Panel. (1) A part of a computer console that contains manual controls. (2) Same as Plugboard.

Control Unit. In a digital computer, those parts that effect the retrieval of instructions in proper sequence, the interpretation of each instruction, and the application of the proper signals to the arithmetic unit and other parts in accordance with this interpretation.

Convert. To change the representation of data from one form to another, e.g., to change numerical data from binary to decimal or from cards to tape.

Copy. To reproduce data leaving the original data unchanged. Synonymous with Duplicate.

Core. See Magnetic Core.

Counter. (1) A device such as a register or storage location used to represent the number of occurrences of an event. (2) See Instruction Counter.

Crosstalk. The unwanted energy transferred from one circuit, called the "disturbing" circuit, to another circuit, called the "disturbed" circuit.

Cryogenics. The study and use of devices utilizing properties of materials near absolute zero in temperature.

Cybernetics. The theory of control and communication in the machine and the animal.

Cycle. (1) An interval of space or time in which one set of events or phenomena is completed. (2) Any set of operations that is repeated regularly in the same sequence. The operations may be subject to variations on each repetition.

Cyclic Shift. A shift in which the data moved out of one end of the storing register are reentered into the other end, as in a closed loop.

Data. Any representations such as characters or analog quantities to which meaning might be assigned.

Data Processing. Pertaining to any operation or combination of operations on data.

Data Processor. Any device capable of performing operations on data, e.g., a desk calculator, a tape recorder, an analog computer, a digital computer.

Data Reduction. The transformation of raw data into a more useful form, e.g., smoothing to reduce noise.

DDA. See Digital Differential Analyzer.

Debug. To detect, locate, and remove mistakes from a routine or malfunctions from a computer. Synonymous with Troubleshoot.

Decimal. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are ten possibilities. (2) Pertaining to the numeration system with a radix of ten. (3) See Binary Coded Decimal.

Decision. A determination of future action.

Decision Instruction. An instruction that effects the selection of a branch of program, e.g., a conditional jump instruction.

Decision Table. A table of all contingencies that are to be considered in the description of a problem, together with the actions to be taken. Decision tables are sometimes used in place of flowcharts for problem description and documentation.

Deck. A collection of punched cards.

Decode. To apply a code so as to reverse some previous encoding.

Decoder. (1) A device that decodes. (2) A matrix of logic elements that selects one or more output channels according to the combination of input signals present.

Delay. The amount of time by which an event is retarded.

Delay Line. (1) A sequential logic element with one input channel and in which an output channel state at any one instant, T, is the same as the input channel state at the instant T-N, where N is a constant interval of time for a given output channel, i.e., an element in which the input sequence undergoes a delay of N time units. (2) See Acoustic Delay Line, Electromagnetic Delay Line, Magnetic Delay Line, Sonic Delay Line.

Delimiter. A flag that separates and organizes items of data. Synonymous with Separator.

Density. See Packing Density.

Description. See Problem Description.

Design. See Functional Design, Logic Design.

Destructive Read. A read process that also erases the data in the source.

Device. See Storage Device.

Diagnostic. Pertaining to the detection and isolation of a malfunction or mistake.

Diagram. See Block Diagram, Functional Diagram, Logic Diagram, Venn Diagram.

Dichotomizing Search. Same as Binary Search.

Differential Analyzer. (1) A mechanical or electrical analog device primarily designed and used to solve differential equations. (2) See Digital Differential Analyzer.

Differentiator. A device whose output function is proportional to the derivative of the input function with respect to one or more variables, e.g., a resistance-capacitance network used to select the leading and trailing edges of a pulse signal.

Digit. (1) A character used to represent one of the non-negative integers smaller than the radix, e.g., in decimal notation, one of the characters 0 to 9. (2) See Binary Digit, Check Digit, Equivalent Binary Digits, Sign Digit, Significant Digit.

Digital. Pertaining to data in the form of digits. Contrast with Analog.

Digital Computer. A computer that operates on discrete data by performing arithmetic and logic processes on these data. Contrast with Analog Computer.

Digital Differential Analyzer. A differential analyzer that uses digital representations for the analog quantities.

Digitize. To express data in a digital form.

Direct Address. An address that specifies the location of an operand. Synonymous with One-Level Address.

Direct Insert Subroutine. Same as Open Subroutine.

Direction. See Flow Direction.

Disc. See Magnetic Disc.

Display. A visual presentation of data.

Display Tube. A tube, usually a cathode ray tube, used to display data.

Dissector. See Image Dissector.

Distance. See Hamming Distance, Signal Distance.

Document. (1) A medium and the data recorded on it for human use, e.g., a report sheet, a book. (2) By extension, any record that has permanence and that can be read by man or machine.

Document Reference Edge. In character recognition, a specified document edge with respect to which the alignment of characters is defined.

Documentation. The collecting, organizing, storing, citing, and disseminating of documents or the information recorded in documents.

Double Precision. Pertaining to the use of two computer words to represent a number.

Downtime. The time interval during which a device is malfunctioning.

Drive. See Tape Drive.

Drum. See Magnetic Drum.

Dummy. Pertaining to the characteristic of having the appearance of a specified thing but not having the capacity to function as such.

Dump. (1) To copy the contents of all or part of a storage, usually from an internal storage into an external storage. (2) A process as in [1]. (3) The data resulting from the process as in [1]. (4) See Dynamic Dump, Postmortem Dump, Selective Dump, Snapshot Dump, Static Dump.

Duodecimal. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are twelve possibilities. (2) Pertaining to the numeration system with a radix of twelve.

Duplex. In communications, pertaining to a simultaneous two-way independent transmission in both directions. Contrast with Half Duplex. Synonymous with Full Duplex.

Duplicate. Same as Copy.

Duplication Check. A check based on the consistency of two independent performances of the same task.

Dyadic Operation. An operation on two operands.

Dynamic Dump. A dump that is performed during the execution of a program.

EAM (Electrical Accounting Machine). Pertaining to data processing equipment that is predominantly elec-

tronic such as a keypunch, mechanical sorter, collator, and tabulator.

Echo Check. A method of checking the accuracy of transmission of data in which the received data are returned to the sending end for comparison with the original data.

Edge. See Document Reference Edge, Stroke Edge,

Edit. To modify the form or format of data, e.g., to insert or delete characters such as page numbers or decimal points.

EDP (Electronic Data Processing). Pertaining to data processing equipment that is predominantly electronic such as an electronic digital computer.

Effective Address. The address that is derived by applying any specified indexing or indirect addressing rules to the specified address and that is actually used to identify the current operand.

Electrical Accounting Machine. See EAM.

Electromagnetic Delay Line. A delay line whose operation is based on the time of propagation of electromagnetic waves through distributed or lumped capacitance and inductance.

Electronic Data Processing. See EDP.

Electrostatic Storage. A storage device that stores data as electrostatically charged areas on a dielectric surface.

Element. See Combinational Logic Element, Logic Element, Sequential Logic Element, Threshold Element.

Encode. To apply the rules of a code. Synonymous with Code (3).

End-Around Carry. A carry from the most significant digit place to the least significant digit place.

Entry Point. In a routine, any place to which control can be passed.

Equivalence. A logic operator having the property that if P is a statement, Q is a statement, R is a statement, ..., then the equivalence of P, Q, R, ... is true if and only if all statements are true or all statements are false.

Equivalent Binary Digits. The number of binary places required to count the elements of a given set.

Error. (1) Any discrepancy between a computed, observed, or measured quantity and the true, specified, or theoretically correct value or condition. (2) See Absolute Error, Inherited Error.

Error Correcting Code. A code in which each acceptable expression conforms to specific rules of construction that also define one or more equivalent nonacceptable expressions, so that if certain errors occur in an acceptable expression the result will be one of its equivalents and thus the error can be corrected.

Error Detecting Code. A code in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of the errors is detected. Synonymous with Self-Checking Code.

Error Range. The difference between the highest and lowest error values.

Escape Character. A character used to indicate that the succeeding one or more characters are expressed in a code different from the code currently in use.

Excess Three Code. A binary coded decimal representation in which each decimal digit N is represented by the binary equivalent of N plus 3.

Exclusive OR. A logic operator having the property that if P is a statement and Q is a statement, then P exclusive or Q is true if either but not both statements are true, false if both are true or both are false. P exclusive or Q is often represented by $P \oplus Q$, $P \nabla Q$, Contrast with OR.

Executive Routine. A routine that controls the execution of other routines. Synonymous with Supervisory Routine.

Extract Instruction. An instruction that requests the formation of a new expression from selected parts of given expressions.

Factor. See Scale Factor.

Fault. (1) A physical condition that causes a device, a component, or an element to fail to perform in a required manner, e.g., a short circuit, a broken wire, an intermittent connection. (2) See Pattern Sensitive Fault, Program Sensitive Fault.

Field. In a record, a specified area used for a particular category of data, e.g., a group of card columns used to represent a wage rate or a set of bit locations in a computer word used to express the address of the operand.

File. A collection of related records treated as a unit. Thus in inventory control, one line of an invoice forms an item, a complete invoice forms a record, and the complete set of such records forms a file.

File Gap. An area on a storage medium, such as tape, used to indicate the end of a file.

File Maintenance. The activity of keeping a file up to date by adding, changing, or deleting data.

Film. See Magnetic Thin Film, Thin Film.

Filter. (1) A device or program that separates data, signals, or material in accordance with specified criteria. (2) A mask.

Fixed Point. Pertaining to a numeration system in which the position of the point is fixed with respect to one end of the numerals, according to some convention.

Fixed Storage. A storage device that stores data not alterable by computer instructions, e.g., magnetic

core storage with a lockout feature, or punched paper tape. Synonymous with Nonerasable Storage, Permanent Storage, Read-Only Storage.

Fixed-Cycle Operation. An operation that is completed in a specified number of regularly timed execution cycles.

Flag. (1) Any of various types of indicators used for identification, e.g., a wordmark. (2) A character that signals the occurrence of some condition, such as the end of a word. (3) Synonymous with Mark, Sentinel, Tag.

Flip-Flop. A circuit or device containing active elements, capable of assuming either one of two stable states at a given time. Synonymous with Toggle (1).

Floating Point. Pertaining to a numeration system in which the position of the point does not remain fixed with respect to one end of the numerals.

Flow. See Bidirectional Flow, Normal Direction Flow, Reverse Direction Flow.

Flow Direction. In flowcharting, the antecedent-to-successor relation, indicated by arrows or other conventions, between operations on a flowchart.

Flowchart. A graphical representation for the definition, analysis, or solution of a problem, in which symbols are used to represent operations, data, flow, and equipment.

Flowchart Symbol. A symbol used to represent operations, data, flow, or equipment in problem description.

Flowline. In flowcharting, a line representing a connecting path between symbols on a flowchart.

Flying Spot Scanner. In OCR, a device employing a moving spot of light to scan a sample space, the intensity of the transmitted or reflected light being sensed by a photoelectric transducer.

Font. (1) A family or assortment of characters of a given size and style. (2) See Type Font.

Formal Logic. The study of the structure and form of valid argument without regard to the meaning of the terms in the argument.

Format. (1) The arrangement of data. (2) See Address Format.

FORTRAN (FORMula TRANslating system). Any of several specific procedure oriented languages.

Four-Plus-One Address. Pertaining to an instruction that contains four operand addresses and a control address.

Full Duplex. Same as Duplex.

Function. A specific purpose of an entity or its characteristic action.

Functional Design. The specification of the working relations between the parts of a system in terms of their characteristic actions.

Functional Diagram. A diagram that represents the functional relationships among the parts of a system.

Gap. See File Gap, Record Gap.

Gate. (1) A device having one output channel and one or more input channels, such that the output channel state is completely determined by the contemporaneous input channel states, except during switching transients. (2) A combinational logic element having at least one input channel. (3) An AND Gate. (4) An OR Gate.

General Purpose Computer. A computer that is designed to solve a wide class of problems.

Generate. To produce a program by selection of subsets from a set of skeletal coding under the control of parameters.

Generator. A controlling routine that performs a generate function, e.g., Report Generator, I/O Generator.

Gray Code. A binary code in which sequential numbers are represented by binary expressions, each of which differs from the preceding expression in one place only. Synonymous with Reflected Binary Code.

Grid. In OCR, two mutually orthogonal sets of parallel lines used for specifying or measuring character images.

Half Duplex. In communications, pertaining to an alternate, one way at a time, independent transmission. Contrast with Duplex.

Half-Adder. A combinational logic element having two outputs, S and C, and two inputs, A and B, such that the outputs are related to the inputs according to the following table.

Input		Output	
A	B	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

S denotes "Sum Without Carry," C denotes "Carry." Two Half-Adders may be used for performing binary addition.

Hamming Distance. Same as Signal Distance.

Hardware. Physical equipment, e.g., mechanical, magnetic, electrical, or electronic devices. Contrast with Software.

Head. A device that reads, records, or erases data on a storage medium, e.g., a small electromagnet used to read, write, or erase data on a magnetic drum or tape, or the set of perforating, reading, or marking devices used for punching, reading, or printing on paper tape.

Heuristic. Pertaining to exploratory methods of problem solving in which solutions are discovered by evalu-

ation of the progress made toward the final result. Contrast with Algorithm.

Hexadecimal. Same as Sexadecimal.

High-Speed Carry. Any technique in parallel addition for speeding up carry propagation, e.g., standing-on-nines carry. Contrast with Cascaded Carry.

Hopper. See Card Hopper.

I/O (Input/Output). input or output or both.

Identifier. A symbol whose purpose is to identify, indicate, or name a body of data.

Image. See Card Image.

Image Dissector. In OCR, a mechanical or electronic transducer that sequentially detects the level of light in different areas of a completely illuminated sample space.

Immediate Address. Pertaining to an instruction in which an address part contains the value of an operand rather than its address. Synonymous with Zero-Level Address.

Inclusive OR. Same as OR.

Incremental Computer. A special purpose computer that is specifically designed to process changes in the variables as well as the absolute value of the variables themselves, e.g., Digital Differential Analyzer.

Index. (1) An ordered reference list of the contents of a file or document, together with keys or reference notations for identification or location of those contents. (2) A symbol or a number used to identify a particular quantity in an array of similar quantities. For example, the terms of an array represented by X_1, X_2, \dots, X_{100} have the indexes 1, 2, ..., 100 respectively. (3) Pertaining to an index register.

Index Register. A register whose content is added to or subtracted from the operand address prior to or during the execution of an instruction. Synonymous with B Box.

Indirect Address. An address that specifies a storage location that contains either a direct address or another indirect address. Synonymous with Multilevel Address.

Industrial Data Processing. Data processing for industrial purposes.

Infinite Pad Method. In OCR, a method of measuring reflectance of a paper stock such that doubling the number of backing sheets of the same stock will not change the measured reflectance.

Information. The meaning assigned to data by known conventions.

Information Processing. (1) The processing of data that represents information. (2) Loosely, automatic data processing.

Information Retrieval. The methods and procedures

for recovering specific information from stored data.

Information Theory. A branch of mathematics that is concerned with the properties of transmitted messages. The messages are subject to certain probabilities of transmission failure, distortion, and noise.

Inherited Error. The error in the value of quantities that serve as the initial conditions at the beginning of a step in a step-by-step calculation.

Initialize. To set counters, switches, and addresses to zero or other starting values at the beginning of, or at prescribed points in, a computer routine.

Ink. See Magnetic Ink.

Inline Procedures. In COBOL, the set of procedural instructions that are part of the main sequential and controlling flow of the program.

Input. (1) The data to be processed. (2) The state or sequence of states occurring on a specified input channel. (3) The device or collective set of devices used for bringing data into another device. (4) A channel for impressing a state on a device or logic element. (5) The process of transferring data from an external storage to an internal storage. (6) See Manual Input.

Input Magazine. Same as Card Hopper.

Instruction. (1) A statement that specifies an operation and the values or locations of its operands. In this context, the term instruction is preferable to the terms command or order which are sometimes used synonymously. Command should be reserved for electronic signals, and order should be reserved for sequence, interpolation, and related usage. (2) See Computer Instruction, Decision Instruction, Extract Instruction, Logic Instruction, Machine Instruction, Macro Instruction, Repetition Instruction.

Instruction Code. Same as Operation Code.

Instruction Counter. A counter that indicates the location of the next computer instruction to be interpreted.

Instruction Register. A register that stores an instruction for execution.

Instruction Repertory. The set of operations that can be represented in a given operation code.

Integrator. A device whose output function is proportional to the integral of the input function with respect to a specified variable, e.g., a Watt-Hour Meter.

Intelligence. See Artificial Intelligence.

Interface. A shared boundary.

Interleave. To arrange parts of one sequence of things or events so that they alternate with parts of one or more other sequences of things or events and so that each sequence retains its identity.

Interpreter. (1) A program that translates and executes

each source language expression before translating and executing the next one. (2) A device that prints on a punched card the data already punched in the card.

Interrupt. To stop a process in such a way that it can be resumed.

Item. A collection of related characters, treated as a unit. Contrast with File.

Jump. (1) A departure from the normal sequence of executing instructions in a computer. Synonymous with Transfer [1]. (2) See Conditional Jump.

Key. (1) One or more characters used to identify an item of data. (2) See Actual Key.

Keypunch. A keyboard actuated device that punches holes in a card to represent data.

Label. A key attached to the item of data that it identifies.

Lag. The delay between two events.

Language. (1) A set of representations, conventions, and rules used to convey information. (2) See Algorithmic Language, Artificial Language, Machine Language, Natural Language, Object Language, Problem Oriented Language, Procedure Oriented Language, Programming Language, Source Language, Target Language.

Latency. The time between the completion of the interpretation of an address and the start of the actual transfer from the addressed location.

Leader. The blank section of tape at the beginning of a reel of tape.

Learning. See Machine Learning.

Length. See Word Length.

Letter. An alphabetic character used for the representation of sounds in a spoken language.

Library. (1) A collection of organized information used for study and reference. (2) See Program Library.

Library Routine. A proven routine that is maintained in a program library.

Light Stability. In OCR, the resistance to change of color of the image when exposed to radiant energy.

Line. See Acoustic Delay Line, Character Spacing Reference Line, Delay Line, Electromagnetic Delay Line, Flowline, Magnetic Delay Line, Sonic Delay Line.

Line Printing. The printing of an entire line of characters as a unit.

Linear Programming. The analysis or solution of problems in which linear function of a number of variables is to be maximized or minimized when those variables are subject to a number of constraints in the form of linear inequalities.

Link. See Communication Link.

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Linkage. In programming, coding that connects two separately coded routines.

List. See Pushdown List, Pushup List.

Load. In programming, to place data into internal storage.

Load-And-Go. An operating technique in which there are no stops between the loading and execution phases of a program, and which may include assembling or compiling.

Location. (1) Loosely, any place in which data may be stored. (2) See Protected Location.

Logic. See Formal Logic, Symbolic Logic.

Logic Design. The specification of the working relations between the parts of a system in terms of symbolic logic and without primary regard for hardware implementation.

Logic Diagram. A diagram that represents a logic design and sometimes the hardware implementation.

Logic Element. (1) A device that performs a logic function. (2) See Combinational Logic Element, Sequential Logic Element.

Logic Instruction. An instruction that executes an operation that is defined in symbolic logic, such as AND, OR, NOR.

Logic Shift. A shift that affects all positions.

Logic Symbol. (1) A symbol used to represent a logic element graphically. (2) A symbol used to represent a logic connective.

Look-Up. See Table Look-Up.

Loop. A sequence of instructions that is executed repeatedly until a terminal condition prevails.

Machine. See Accounting Machine, Electrical Accounting Machine, Turing Machine, Universal Turing Machine.

Machine Address. Same as Absolute Address.

Machine Code. An operation code that a machine is designed to recognize.

Machine Instruction. An instruction that a machine can recognize and execute.

Machine Language. A language that is used directly by a machine.

Machine Learning. Pertaining to the ability of a device to improve its performance based on its past performance. Related to Artificial Intelligence.

Machine Word. Same as Computer Word.

Macro Instruction. An instruction in a source language that is equivalent to a specified sequence of machine instructions.

Magazine. See Input Magazine.

Magnetic Card. A card with a magnetic surface on

which data can be stored by selective magnetization of portions of the flat surface.

Magnetic Core. A configuration of magnetic material that is, or is intended to be, placed in a spatial relationship to current-carrying conductors and whose magnetic properties are essential to its use. It may be used to concentrate an induced magnetic field as in a transformer, induction coil, or armature, to retain a magnetic polarization for the purpose of storing data, or for its nonlinear properties as in a logic element. It may be made of such material as iron, iron oxide, or ferrite and in such shapes as wires, tapes, toroids, or thin film.

Magnetic Delay Line. A delay line whose operation is based on the time of propagation of magnetic waves.

Magnetic Disc. A flat circular plate with a magnetic surface on which data can be stored by selective magnetization of portions of the flat surface.

Magnetic Drum. A right circular cylinder with a magnetic surface on which data can be stored by selective magnetization of portions of the curved surface.

Magnetic Ink. An ink that contains particles of a magnetic substance whose presence can be detected by magnetic sensors.

Magnetic Ink Character Recognition. See MICR.

Magnetic Storage. A storage device that utilizes the magnetic properties of materials to store data, e.g., magnetic cores, tapes, and films.

Magnetic Tape. (1) A tape with a magnetic surface on which data can be stored by selective polarization of portions of the surface. (2) A tape of magnetic material used as the constituent in some forms of magnetic cores.

Magnetic Thin Film. A layer of magnetic material, usually less than one micron thick, often used for logic or storage elements.

Maintenance. (1) Any activity intended to keep equipment or programs in satisfactory working condition, including tests, measurements, replacements, adjustments, and repairs. (2) See File Maintenance.

Majority. A logic operator having the property that if P is a statement, Q is a statement, R is a statement, ..., then the majority of P, Q, R, ... is true if more than half the statements are true, false if half or less are true.

Malfunction. The effect of a fault.

Manual Input. (1) The entry of data by hand into a device at the time of processing. (2) The data entered as in (1).

Map. To establish a correspondence between the elements of one set and the elements of another set.

Marginal Check. A preventive maintenance procedure in which certain operating conditions, such as supply

voltage or frequency, are varied about their nominal values in order to detect and locate incipient defective parts.

Mark. Same as Flag.

Mask. (1) A pattern of characters that is used to control the retention or elimination of portions of another pattern of characters. (2) A filter.

Mathematical Model. A mathematical representation of a process, device, or concept.

Matrix. (1) In mathematics, a two-dimensional rectangular array of quantities. Matrices are manipulated in accordance with the rules of matrix algebra. (2) In computers, a logic network in the form of an array of input leads and output leads with logic elements connected at some of their intersections. (3) By extension, an array of any number of dimensions.

Medium. The material, or configuration thereof, on which data is recorded, e.g., paper tape, cards, magnetic tape.

Memory. Same as Storage.

Mercury Storage. A storage device that utilizes the acoustic properties of mercury to store data.

Merge. To combine two or more sets of items into one, usually in a specified sequence.

Message. An arbitrary amount of information whose beginning and end are defined or implied.

Method. See Infinite Pad Method.

MICR (Magnetic Ink Character Recognition). The machine recognition of characters printed with magnetic ink. Contrast with OCR.

Minimum Distance Code. A binary code in which the signal distance does not fall below a specified minimum value.

Mistake. A human action that produces an unintended result.

Mixed Radix. Pertaining to a numeration system that uses more than one radix, such as the biquinary system.

Mode. See Access Mode.

Model. See Mathematical Model.

Modem. MOdulator-DEModulator.

Modulo N Check. Same as Residue Check.

Monadic Operation. An operation on one operand, e.g., negation. Synonymous with Unary Operation.

Monostable. Pertaining to a device that has one stable state.

Multi-Address. Pertaining to an instruction that has more than one address part.

Multilevel Address. Same as Indirect Address.

Multiplex. To interleave or simultaneously transmit two or more messages on a single channel.

Multiprocessing. Pertaining to the simultaneous or interleaved execution of two or more programs or sequences of instructions by a computer or computer network. Multiprocessing may be accomplished by multiprogramming, parallel processing, or both.

Multiprocessor. A computer capable of multiprocessing.

Multiprogramming. Pertaining to the interleaved execution of two or more programs by a computer. Contrast with Parallel Processing.

N-Level Address. A multilevel address that specifies N Levels of addressing.

Nand. A logic operator having the property that if P is a statement, Q is a statement, R is a statement, ..., then the Nand of P, Q, R, ... is true if at least one statement is false, false if all statements are true.

Natural Language. A language whose rules reflect and describe current usage rather than prescribe usage. Contrast with Artificial Language.

Negate. To perform the logic operation "NOT."

Network. See Computer Network.

Network Analyzer. A device that simulates a network such as an electrical supply network.

Nines Complement. The radix-minus-one complement of a numeral whose radix is ten.

No Op. An instruction that specifically instructs the computer to do nothing, except to proceed to the next instruction in sequence.

Noise. (1) Random variations of one or more characteristics of any entity such as voltage, current, or data. (2) Loosely, any disturbance tending to interfere with the normal operation of a device or system.

Nondestructive Read. A read process that does not erase the data in the source.

Nonerasable Storage. Same as Fixed Storage.

NOR. A logic operator having the property that if P is a statement, Q is a statement, R is a statement, ..., then the NOR of P, Q, R, ... is true if all statements are false, false if at least one statement is true.

Normal Direction Flow. In flowcharting, a flow in a direction from left to right or top to bottom.

Normalize. To adjust the representation of a quantity so that the representation lies in a prescribed range.

NOT. A logic operator having the property that if P is a statement, then the NOT of P is true if P is false, false if P is true. The NOT of P is often represented by \bar{P} , $\sim P$, $\neg P$, P' .

Notation. See Positional Notation.

Number. (1) A mathematical entity that may indicate quantity or amount of units. (2) Loosely, a numeral. (3) See Binary Number.

Number System. Loosely, a numeration system.

Numeral. (1) A representation of a number. (2) See Binary Numeral.

Numeral System. Same as Numeration System.

Numeration System. A system for the representation of numbers, e.g., the decimal system, the roman numeral system, the binary system. Synonymous with Numeral System.

Numerical Analysis. The study of methods of obtaining useful quantitative solutions to problems that have been expressed mathematically, including the study of the errors and bounds on errors in obtaining such solutions.

Numerical Control. Pertaining to the automatic control of processes by the proper interpretation of numerical data.

Object Language. Same as Target Language.

Object Program. Same as Target Program.

OCR (Optical Character Recognition). Machine identification of printed characters through use of light-sensitive devices. Contrast with MICR.

Octal. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are eight possibilities. (2) Pertaining to the numeration system with a radix of eight.

Odd-Even Check. Same as Parity Check.

Offline. Pertaining to equipment or devices not under direct control of the central processing unit.

One-Level Address. Same as Direct Address.

One-Plus-One Address. Pertaining to an instruction that contains one operand address and a control address.

Ones Complement. The radix-minus-one complement of a numeral whose radix is two.

Online. Pertaining to equipment or devices under direct control of the central processing unit.

Open Subroutine. A subroutine that must be relocated and inserted into a routine at each place it is used. Synonymous with Direct Insert Subroutine. Contrast with Closed Subroutine.

Openended. Pertaining to a process or system that can be augmented.

Operand. That which is operated upon. An operand is usually identified by an address part of an instruction.

Operating System. An organized collection of techniques and procedures for operating a computer.

Operation. (1) A defined action, namely, the act of obtaining a result from one or more operands in accordance with a rule that completely specifies the result for any permissible combination of operands. (2) The set of such acts specified by such a rule, or the

rule itself. (3) The act specified by a single computer instruction. (4) A program step undertaken or executed by a computer, e.g., addition, multiplication, extraction, comparison, shift, transfer. The operation is usually specified by the operator part of an instruction. (5) The event or specific action performed by a logic element. (6) See Auxiliary Operation, Dyadic Operation, Fixed-Cycle Operation, Monadic Operation, Sequential Operation, Serial Operation, Unary Operation.

Operation Code. A code that represents specific operations. Synonymous with Instruction Code.

Operation Part. Loosely, the operator part of an instruction.

Operator. (1) In the description of a process, that which indicates the action to be performed on operands. (2) A person who operates a machine.

Optical Character Recognition. See OCR.

Optical Scanner. (1) A device that scans optically and usually generates an analog or digital signal. (2) A device that optically scans printed or written data and generates their digital representations. (3) Synonymous with Visual Scanner.

OR. A logic operator having the property that if P is a statement, Q is a statement, R is a statement..., then the OR of P, Q, R,... is true if at least one statement is true, false if all statements are false. P or Q is often represented by $P+Q$, $P\vee Q$. Synonymous with Inclusive OR. Contrast with Exclusive OR.

OR Gate. A gate that implements the OR operator.

Order. (1) To put items in a given sequence. (2) Formerly, synonymous with Instruction.

Organizing. See Self-Organizing.

Outline. See Character Outline.

Output. (1) Data that has been processed. (2) The state or sequence of states occurring on a specified output channel. (3) The device or collective set of devices used for taking data out of a device. (4) A channel for expressing a state of a device or logic element. (5) The process of transferring data from an internal storage to an external storage.

Overflow. (1) That portion of the result of an operation that exceeds the capacity of the intended unit of storage. (2) Pertaining to the generation of overflow as in (1).

Overlay. The technique of repeatedly using the same blocks of internal storage during different stages of a problem. When one routine is no longer needed in storage, another routine can replace all or part of it.

Pack. To compress several items of data in a storage medium in such a way that the individual items can later be recovered.

Packing Density. The number of useful storage cells

per unit of dimension, e.g., the number of bits per inch stored on a magnetic tape or drum track.

Panel. See Control Panel.

Parallel. (1) Pertaining to the simultaneity of two or more processes. (2) Pertaining to the simultaneity of two or more similar or identical processes. (3) Pertaining to the simultaneous processing of the individual parts of a whole, such as the bits of a character and the characters of a word, using separate facilities for the various parts.

Parallel Processing. Pertaining to the simultaneous execution of two or more sequences of instructions by a computer having multiple arithmetic or logic units. Contrast with Multiprogramming.

Parallel Search Storage. Same as Associative Storage.

Parallel Storage. A storage device in which characters, words, or digits are dealt with simultaneously.

Parameter. A variable that is given a constant value for a specific purpose or process.

Parity Bit. A binary digit appended to an array of bits to make the sum of all the bits always odd or always even.

Parity Check. A check that tests whether the number of ones (or zeros) in an array of binary digits is odd or even. Synonymous with Odd-Even Check.

Part. See Address Part, Operation Part.

Partial Carry. In parallel addition, a technique in which some or all of the carries are stored temporarily instead of being allowed to propagate immediately.

Patch. (1) To modify a routine in a rough or expedient way. (2) A temporary electrical connection.

Pattern Recognition. The identification of shapes, forms, or configurations by automatic means.

Pattern Sensitive Fault. A fault that appears in response to some particular pattern of data.

PCM. (1) Punched Card Machine. (2) Pulse Code Modulation.

Permanent Storage. Same as Fixed Storage.

Pinboard. A perforated board that accepts manually inserted pins to control the operation of equipment.

Pitch. See Row Pitch.

Plugboard. A perforated board that accepts manually inserted plugs to control the operation of equipment. Synonymous with Control Panel [2].

Point. (1) In positional notation, the character or implied character that separates the integral part of a numerical expression from the fractional part, e.g., a decimal point, binary point. (2) See Branchpoint, Breakpoint, Checkpoint, Entry Point, Fixed Point, Floating Point, Rerun Point, Variable Point.

Position. See Punch Position, Sign Position.

Positional Notation. A number representation that

makes use of an ordered set of digits, such that the value contributed by each digit depends on its position as well as on the digit value.

Postmortem. Pertaining to the analysis of an operation after its completion.

Postmortem Dump. A static dump used for debugging purposes that is performed at the end of a machine run.

Precision. (1) The degree of discrimination with which a quantity is stated, e.g., a three-digit numeral discriminates among 1000 possibilities. (2) See Double Precision.

Predefined Process. A process that is identified only by name and that is defined elsewhere.

Preset. To establish an initial condition, such as the control values of a loop.

Print Contrast Ratio. In OCR, the ratio obtained by subtracting the reflectance at an inspection area from the maximum reflectance found within a specified distance from that area, and dividing the result by that maximum reflectance.

Printing. See Line Printing.

Problem. See Benchmark Problem.

Problem Description. A statement of a problem. The statement may also include a description of the method of solution, the solution itself, the transformations of data, and the relationship of procedures, data, constraints, and environments.

Problem Oriented Language. A programming language designed for the convenient expression of a given class of problems.

Procedure. (1) The course of action taken for the solution of a problem. (2) See Inline Procedures.

Procedure Oriented Language. A programming language designed for the convenient expression of procedures used in the solution of a wide class of problems.

Process. See Predefined Process.

Processing. See Automatic Data Processing, Business Data Processing, Data Processing, Electronic Data Processing, Industrial Data Processing, Information Processing, Multiprocessing, Parallel Processing.

Processor. (1) In hardware, a data processor. (2) In software, a computer program that includes the compiling, assembling, translating, and related functions for a specific programming language, e.g., COBOL processor, FORTRAN processor. (3) See Data Processor, Multiprocessor.

Program. (1) A plan for solving a problem. (2) Loosely, a routine. (3) To devise a plan for solving a problem. (4) Loosely, to write a routine. (5) See Computer Program, Object Program, Source Program, Target Program.

Program Library. A collection of available computer programs and routines.

Program Sensitive Fault. A fault that appears in response to some particular sequence of program steps.

Programmed Check. A check procedure designed by the programmer and implemented specifically as a part of his program. Contrast with Automatic Check.

Programming. See Automatic Programming, Linear Programming, Multiprogramming.

Programming Language. A language used to prepare computer programs.

Protected Location. A storage location reserved for special purposes in which data cannot be stored without undergoing a screening procedure to establish suitability for storage therein.

Pseudo-Random Number Sequence. A sequence of numbers, determined by some defined arithmetic process, that is satisfactorily random for a given purpose, such as by satisfying one or more of the standard statistical tests for randomness. Such a sequence may approximate any one of several statistical distributions, such as uniform distribution or normal gaussian distribution.

Punch. See Keypunch, X-Punch, Y-Punch, Zone Punch.

Punch Position. A site on a punched tape or card where holes are to be punched.

Punched Card. (1) A card punched with a pattern of holes to represent data. (2) A card as in [1] before being punched.

Punched Tape. A tape on which a pattern of holes or cuts is used to represent data.

Pushdown List. A list that is constructed and maintained so that the next item to be retrieved is the most recently stored item in the list, i.e., last in, first out.

Pushup List. A list that is constructed and maintained so that the next item to be retrieved and removed is the oldest item still in the list, i.e., first in, first out.

Quantization. The subdivision of the range of values of a variable into a finite number of nonoverlapping subranges or intervals.

Quantize. To subdivide the range of values of a variable into a finite number of nonoverlapping subranges or intervals, each of which is represented by an assigned value within the subrange, e.g., to represent a person's age as a number of whole years.

Quinary. See Biquinary.

Radix. (1) A quantity whose successive integral powers are the implicit multipliers of the sequence of digits that represent a number. For example, if the radix is five, then 143.2 means 1 times 5 to the second power, plus 4 times 5 to the first power, plus 3 times 5 to the zero power, plus 2 times 5 to the minus one power. Synonymous with Base. (2) See Mixed Radix.

Radix Complement. A numeral in radix notation that can be derived from another by subtracting each digit from one less than the radix and then adding one to the least significant digit of the difference, executing all carries required, e.g., tens complement in decimal notation, twos complement in binary notation. Synonymous with True Complement.

Radix-Minus-One Complement. A numeral in radix notation that can be derived from another by subtracting each digit from one less than the radix, e.g., nines complement in decimal notation, ones complement in binary notation.

Random Access. (1) Pertaining to the process of obtaining data from, or placing data into, storage where the time required for such access is independent of the location of the data most recently obtained or placed in storage. (2) Pertaining to a storage device in which the access time is effectively independent of the location of the data.

Random Number. See Pseudo-Random Number Sequence.

Range. (1) The set of values that a quantity or function may assume. (2) The difference between the highest and lowest value that a quantity or function may assume. (3) See Error Range.

Ratio. See Print Contrast Ratio, Read-Around Ratio.

Read. (1) To acquire data from a source. (2) See Destructive Read, Nondestructive Read.

Read-Around Ratio. The number of times a specific spot, digit, or location in electrostatic storage may be consulted before spillover of electrons causes a loss of data stored in surrounding spots. The surrounding data must be restored before the deterioration results in any loss of data.

Read-Only Storage. Same as Fixed Storage.

Real Time. (1) Pertaining to the actual time during which a physical process transpires. (2) Pertaining to the performance of a computation during the actual time that the related physical process transpires in order that results of the computation can be used in guiding the physical process.

Recognition. See Character Recognition, Magnetic Ink Character Recognition, Optical Character Recognition, Pattern Recognition.

Record. A collection of related items of data, treated as a unit. Contrast with File.

Record Gap. On a storage medium, an area used to indicate the end of a record.

Reduction. See Data Reduction.

Reflected Binary Code. Same as Gray Code.

Register. (1) A device capable of storing a specified amount of data, such as one word. (2) See Address Register, Circulating Register, Index Register, Instruction Register, Shift Register.

Registration. The accurate positioning relative to a reference.

Relative Address. The number that specifies the difference between the absolute address and the base address.

Relative Coding. Coding that uses machine instructions with relative addresses.

Reliability. The probability that a device will function without failure over a specified time period or amount of usage.

Relocate. In programming, to move a routine from one portion of storage to another and to adjust the necessary address references so that the routine, in its new location, can be executed.

Reperforator. (REceiving PERFORATOR.) A tape punch that automatically converts coded electrical signals into perforations in tape.

Repertory. See Instruction Repertory.

Repetition Instruction. An instruction that causes one or more instructions to be executed an indicated number of times.

Rerun Point. That location in the sequence of instructions in a computer program at which all information pertinent to the rerunning of the program is available.

Reset. (1) To restore a storage device to a prescribed initial state, not necessarily that denoting zero. (2) To place a binary cell into the state denoting zero.

Residue Check. A check in which each operand is accompanied by the remainder obtained by dividing this number by N, the remainder then being used as a check digit or digits. Synonymous with Modulo N Check.

Resolver. A device whose input is a vector quantity and whose outputs are components of the vector.

Response. See Spectral Response.

Restart. To reestablish the execution of a routine, using the data recorded at a checkpoint.

Retrieval. See Information Retrieval.

Return. See Carriage Return.

Reverse Direction Flow. In flowcharting, a flow in a direction other than left to right or top to bottom.

Roundoff. To delete the least significant digit or digits of a numeral and to adjust the part retained in accordance with some rule.

Routine. (1) A set of instructions arranged in proper sequence to cause a computer to perform a desired task. (2) See Executive Routine, Library Routine, Service Routine, Subroutine, Supervisory Routine, Tracing Routine, Utility Routine.

Row Binary. Pertaining to the binary representation of data on punched cards in which adjacent positions in a row correspond to adjacent bits of data, e.g., each row in an 80 column card may be used to represent 80 consecutive bits of two 40 bit words.

Row Pitch. The distance measured between corresponding points of adjacent rows.

Run. A single, continuous performance of a computer routine.

Sampling. Obtaining a value of a variable at regular or intermittent intervals.

Scale. To change a quantity by a factor in order to bring its range within prescribed limits.

Scale Factor. A number used as a multiplier, so chosen that it will cause a set of quantities to fall within a given range of values. To scale the values 856, 432, -95, and -182 between -1 and +1, a scale factor of 1/1000 would be suitable.

Scan. To examine sequentially part by part.

Scanner. See Flying Spot Scanner, Optical Scanner, Visual Scanner.

Search. (1) To examine a set of items for those that have a desired property. (2) See Binary Search, Dichotomizing Search.

Selection Check. A check that verifies the choice of devices, such as registers, in the execution of an instruction.

Selective Dump. A dump of a selected area of storage.

Self-Adapting. Pertaining to the ability of a system to change its performance characteristics in response to its environment.

Self-Checking Code. Same as Error Detecting Code.

Self-Organizing. Pertaining to the ability of a system to arrange its internal structure.

Semantics. The relationships between symbols and their meanings.

Sentinel. Same as Flag.

Separator. Same as Delimiter.

Sequence. See Calling Sequence, Collating Sequence, Pseudo-Random Number Sequence.

Sequential Control. A mode of computer operation in which instructions are executed consecutively unless specified otherwise by a jump.

Sequential Logic Element. A device having at least one output channel and one or more input channels, all characterized by discrete states, such that the state of each output channel is determined by the previous states of the input channels.

Sequential Operation. Pertaining to the performance of operations one after the other.

Serial. (1) Pertaining to the time-sequencing of two or more processes. (2) Pertaining to the time-sequencing of two or more similar or identical processes, using the same facilities for the successive processes. (3) Pertaining to the time-sequential processing of the individual parts of a whole, such as the bits of a character

or the characters of a word, using the same facilities for successive parts.

Serial Access. Pertaining to the process of obtaining data from, or placing data into, storage when there is a sequential relation governing the access time to successive storage locations.

Serial Operation. An operation whose processes are performed in a time sequence.

Service Routine. A routine in general support of the operation of a computer, e.g., an input-output, diagnostic, tracing, or monitoring routine. Synonymous with Utility Routine.

Servomechanism. (1) A feedback control system in which at least one of the system signals represents mechanical motion. (2) Any feedback control system.

Set. (1) A collection. (2) To place a storage device into a specified state, usually other than that denoting zero or blank. (3) To place a binary cell into the state denoting one. (4) See Preset, Reset.

Sexadecimal. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are sixteen possibilities. (2) Pertaining to the numeration system with a radix of sixteen. (3) Synonymous with Hexadecimal.

Sharing. See Time Sharing.

Shift. (1) A movement of data to the right or left. (2) See Arithmetic Shift, Cyclic Shift, Logic Shift.

Shift Register. A register in which the stored data can be moved to the right or left.

Sign Digit. The digit in the sign position.

Sign Position. The position at which the sign of a number is located.

Signal. The event or phenomenon that conveys data from one point to another.

Signal Distance. The number of digit positions in which the corresponding digits of two binary words of the same length are different. Synonymous with Hamming Distance.

Significant Digit. A digit that contributes to the accuracy or precision of a numeral. The number of significant digits is counted beginning with the digit contributing the most value, called the most significant digit, and ending with the one contributing the least value, called the least significant digit.

Simulate. To represent the functioning of one system by another, e.g., to represent one computer by another, to represent a physical system by the execution of a computer program, to represent a biological system by a mathematical model.

Simulator. A device or computer program that performs simulation.

Single Step. Pertaining to a method of operating a com-

puter in which each step is performed in response to a single manual operation.

Skeletal Coding. Sets of instructions in which some addresses and other parts remain undetermined. These addresses and other parts are usually determined by routines that are designed to modify them in accordance with given parameters.

Skew. The angular displacement of an individual printed character, group of characters, or other data, from the intended or ideal placement.

Skip. To ignore one or more instructions in a sequence of instructions.

Smooth. To apply procedures that decrease or eliminate rapid fluctuations in data.

Snapshot Dump. A selective dynamic dump performed at various points in a machine run.

Software. (1) The collection of programs and routines associated with a computer, e.g., compilers, library routines. (2) All the documents associated with a computer, e.g., manuals, circuit diagrams. (3) Contrast with Hardware.

Solid State Component. A component whose operation depends on the control of electric or magnetic phenomena in solids, e.g., a transistor, crystal diode, ferrite core.

Sonic Delay Line. Same as Acoustic Delay Line.

Sort. To arrange data or items in an ordered sequence by applying specific rules.

Sorter. A person, device, or computer routine that sorts.

Source Language. A language that is an input to a given translation process.

Source Program. A program written in a source language.

Space. (1) A place intended for the storage of data, e.g., a place on a printed page or a location in a storage medium. (2) A basic unit of area on a record, i.e., an area that may contain no more than one printed character. (3) One or more blanks. (4) To move from one place to another according to a prescribed format, e.g., to move horizontally to the right on a printed page or vertically down a page.

Special Character. In a character set, a character that is neither a numeral, a letter, nor a blank, e.g., virgule, asterisk, dollar sign, equals sign, comma, period.

Special Purpose Computer. A computer that is designed to solve a restricted class of problems.

Spectral Response. The variation in sensitivity of a device to light of different wavelengths.

Stability. See Light Stability.

Stacker. See Card Stacker.

Standing-On-Nines Carry. In parallel addition of deci-

mal numbers, a high-speed carry in which a carry input to a given digit place is bypassed to the next digit place if the current sum in the given place is nine.

Statement. In computer programming, a meaningful expression or generalized instruction in a source language.

Static Dump. A dump that is performed at a particular point in time with respect to a machine run, frequently at the end of a run.

Staticize. (1) To convert serial or time-dependent parallel data into static form. (2) Occasionally, to retrieve an instruction and its operands from storage prior to its execution.

Station. See Tape Station.

Step. (1) One operation in a computer routine. (2) To cause a computer to execute one operation. (3) See Single Step.

Storage. (1) Pertaining to a device into which data can be entered, in which it can be held, and from which it can be retrieved at a later time. (2) Loosely, any device that can store data. (3) Synonymous with Memory. (4) See Associative Storage, Auxiliary Storage, Content Addressed Storage, Electrostatic Storage, Fixed Storage, Magnetic Storage, Mercury Storage, Nonerasable Storage, Parallel Search Storage, Parallel Storage, Permanent Storage, Read-Only Storage, Temporary Storage, Volatile Storage, Working Storage.

Storage Allocation. The assignment of blocks of data to specified blocks of storage.

Storage Capacity. The amount of data that can be contained in a storage device.

Storage Cell. An elementary unit of storage, e.g., a binary cell, a decimal cell.

Storage Device. A device into which data can be inserted, in which it can be retained, and from which it can be retrieved.

Store. (1) To enter data into a storage device. (2) To retain data in a storage device. (3) A storage device.

Stored Program Computer. A digital computer that, under control of internally stored instructions, can synthesize, alter, and store instructions as though they were data and can subsequently execute these new instructions.

Straight Line Coding. Coding in which loops are avoided by the repetition of parts of the coding when required.

String. A connected sequence of entities such as characters or physical elements.

Stroke. In character recognition, a straight line or arc used as a segment of a graphic character.

Stroke Centerline. In character recognition, a line midway between the two stroke edges.

Stroke Edge. In character recognition, the line of discontinuity between a side of a stroke and the background, obtained by averaging, over the length of the stroke, the irregularities resulting from the printing and detecting processes.

Stroke Width. In character recognition, the distance measured perpendicularly to the stroke centerline between the two stroke edges.

Subroutine. (1) A routine that can be part of another routine. (2) See Closed Subroutine, Direct Insert Subroutine, Open Subroutine.

Summation Check. A check based on the formation of the sum of the digits of a numeral. The sum of the individual digits is usually compared with a previously computed value.

Supervisory Routine. Same as Executive Routine.

Suppression. See Zero Suppression.

Switch. A device or programming technique for making a selection, e.g., a toggle, a conditional jump.

Symbol. (1) A representation of something by reason of relationship, association, or convention. (2) See Flowchart Symbol, Logic Symbol.

Symbolic Address. An address expressed in symbols convenient to the programmer.

Symbolic Coding. Coding that uses machine instructions with symbolic addresses.

Symbolic Logic. The discipline that treats formal logic by means of a formalized artificial language or symbolic calculus whose purpose is to avoid the ambiguities and logical inadequacies of natural languages.

Synchronous Computer. A computer in which each event, or the performance of each operation, starts as a result of a signal generated by a clock.

Syntax. (1) The structure of expressions in a language. (2) The rules governing the structure of a language.

System. (1) An organized collection of parts united by regulated interaction. (2) An organized collection of men, machines, and methods required to accomplish a specific objective. (3) See Number System, Numerical System, Numeration System, Operating System.

Table. (1) A collection of data, each item being uniquely identified either by some label or by its relative position. (2) See Decision Table, Truth Table.

Table Look-Up. A procedure for obtaining the function value corresponding to an argument from a table of function values.

Tabulate. (1) To form data into a table. (2) To print totals.

Tag. Same as Flag.

Tape. See Magnetic Tape, Punched Tape.

Tape Drive. A device that moves tape past a head. Synonymous with Tape Transport.

Tape Station. Same as Tape Unit.

Tape to Card. Pertaining to equipment or methods that transmit data from either magnetic tape or punched tape to punched cards.

Tape Transport. Same as Tape Drive.

Tape Unit. A device containing a tape drive, together with reading and writing heads and associated controls. Synonymous with Tape Station.

Target Language. A language that is an output from a given translation process. Synonymous with Object Language.

Target Program. A program written in a target language. Synonymous with Object Program.

Telecommunications. Pertaining to the transmission of signals over long distances, such as by telegraph, radio, or television.

Temporary Storage. In programming, storage locations reserved for intermediate results. Synonymous with Working Storage.

Tens Complement. The radix complement of a numeral whose radix is ten.

Terminal. A point in a system or communication network at which data can either enter or leave.

Ternary. (1) Pertaining to a characteristic or property involving a selection, choice, or condition in which there are three possibilities. (2) Pertaining to the numeration system with a radix of three.

Theory. See Information Theory.

Thin Film. Loosely, magnetic thin film.

Three-Plus-One Address. Pertaining to an instruction that contains three operand addresses and a control address.

Threshold. (1) A logic operator having the property that if P is a statement, Q is a statement, R is a statement, ..., then the threshold of P, Q, R, ... is true if at least N statements are true, false if less than N statements are true, where N is a specified nonnegative integer called the threshold condition. (2) The threshold condition as in [1].

Threshold Element. A device that performs the logic threshold operation but in which the truth of each input statement contributes, to the output determination, a weight associated with that statement.

Time. See Access Time, Downtime, Real Time, Word Time.

Time Sharing. Pertaining to the interleaved use of the time of a device.

Timeshare. To use a device for two or more interleaved purposes.

Toggle. (1) Same as Flip-Flop. (2) Pertaining to any device having two stable states.

Tracing Routine. A routine that provides a historical

record of specified events in the execution of a program.

Track. The portion of a moving storage medium, such as a drum, tape, or disc, that is accessible to a given reading head position.

Transducer. A device for converting energy from one form to another.

Transfer. (1) Same as Jump. (2) Same as Transmit.

Transfer Check. A check on the accuracy of a data transfer.

Transform. To change the form of data according to specific rules.

Translate. To convert from one language to another language.

Transliterate. To convert the characters of one alphabet to the corresponding characters of another alphabet.

Transmit. To move data from one location to another location. Synonymous with Transfer [2].

Transport. See Tape Transport.

Trap. An unprogrammed conditional jump to a known location, automatically activated by hardware, with the location from which the jump occurred recorded.

Troubleshoot. Same as Debug.

True Complement. Same as Radix Complement.

Truncate. To terminate a computational process in accordance with some rule, e.g., to end the evaluation of a power series at a specified term.

Truth Table. A table that describes a logic function by listing all possible combinations of input values and indicating, for each combination, the true output values.

Tube. See Display Tube.

Turing Machine. (1) A mathematical model of a device that changes its internal state and reads from, writes on, and moves a potentially infinite tape, all in accordance with its present state, thereby constituting a model for computer-like behavior. (2) See Universal Turing Machine.

Two-Out-Of-Five Code. A code in which each decimal digit is represented by five binary digits of which two are one kind (e.g., ones) and three are the other kind (e.g., zeros).

Two-Plus-One Address. Pertaining to an instruction that contains two operand addresses and a control address.

Twos Complement. The radix complement of a numeral whose radix is two.

Type Font. A type face of a given size, e.g., 10-point Bodoni Gothic.

Unary Operation. Same as Monadic Operation.

Underflow. Pertaining to the condition that arises when a machine computation yields a nonzero result that is smaller than the smallest nonzero quantity that the intended unit of storage is capable of storing.

Unit. (1) A device having a special function. (2) A basic element. (3) See Arithmetic Unit, Central Processing Unit, Control Unit, Tape Unit.

Universal Turing Machine. A turing machine that can simulate any other turing machine.

Unpack. To separate various sections of packed data.

Utility Routine. Same as Service Routine.

Variable. A quantity that can assume any of a given set of values.

Variable Point. Pertaining to a numeration system in which the position of the point is indicated by a special character at that position.

Venn Diagram. A diagram in which sets are represented by closed regions.

Verify. (1) To determine whether a transcription of data or other operation has been accomplished accurately. (2) To check the results of keypunching.

Visual Scanner. Same as Optical Scanner.

Void. In character recognition, the inadvertent absence of ink within a character outline.

Volatile Storage. A storage device in which stored data are lost when the applied power is removed, e.g., an acoustic delay line.

Width. See Stroke Width.

Word. See Computer Word, Machine Word.

Word Length. The number of bits or other characters in a word.

Word Time. In a storage device that provides serial access to storage locations, the time interval between the appearance of corresponding parts of successive words.

Working Storage. Same as Temporary Storage.

Write. To deliver data to a medium such as storage.

X-Punch. A punch in the second row, one row above the zero row, on a Hollerith punched card.

Y-Punch. A punch in the top row, two rows above the zero row, on a Hollerith punched card.

Zero Suppression. The elimination of nonsignificant zeros in a numeral.

Zero-Level Address. Same as Immediate Address.

Zone Punch. A punch in the 0, X, or Y Row on a Hollerith punched card.

Appendix

(This Appendix is not a part of USA Standard Vocabulary for Information Processing, X3.12-1966, but is included only for general information.)

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- X3.16-1966 Character Structure and Character Parity Sense for Serial-by-Bit Data Communication in the USA Standard Code for Information Interchange
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