


```

000000  FFFFFFFFFF  FFFFFFFFFF  SSSSSSSS  EEEEEEEEE  TTTTTTTTT
000000  FFFFFFFFFF  FFFFFFFFFF  SSSSSSSS  EEEEEEEEE  TTTTTTTTT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
00      00    FFFFFFFF  FFFFFFFF  SSSSSS  EEEEEEE  TT
00      00    FFFFFFFF  FFFFFFFF  SSSSSS  EEEEEEE  TT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
00      00    FF      FF      SS      EE      TT
000000  FF      FF      SSSSSSSS  EEEEEEEEE  TT
000000  FF      FF      SSSSSSSS  EEEEEEEEE  TT

```

```

....
....
....
....

```

```

MM      MM      AAAAAA  RRRRRRRR
MM      MM      AAAAAA  RRRRRRRR
MMMM  MMMM  AA      AA  RR      RR
MMMM  MMMM  AA      AA  RR      RR
MM  MM  MM  AA      AA  RR      RR
MM  MM  MM  AA      AA  RR      RR
MM      MM  AA      AA  RRRRRRRR
MM      MM  AA      AA  RRRRRRRR
MM      MM  AAAAAAAAAA  RR  RR
MM      MM  AAAAAAAAAA  RR  RR
MM      MM  AA      AA  RR      RR
MM      MM  AA      AA  RR      RR
MM      MM  AA      AA  RR      RR
MM      MM  AA      AA  RR      RR

```

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 +
 * MACRO TO GENERATE A OFFSET LIST FOR A DATA STRUCTURE

IT IS USEFUL FOR INPUT ARGUMENT LISTS POSITIVELY INDEXED FROM AP, AND
 WORK AREAS ALLOCATED IN CALL STACK AND NEGATIVELY INDEXED FROM FP.

CALL: \$OFFSET INITIAL,DIRECTION,<<LAB1,[SIZE]>>,...,<LABN,[SIZE]>>

WHERE: INITIAL IS A REQUIRED VALUE FOR THE INTIAL INDEX WHEN
 ORIGINATING A DATA STRUCTURE DEFINITION. IT IS NORMALLY
 (+) 4 FOR ARGUMENT LISTS AND 0 FOR WORK AREAS.

DIRECTION IS A KEYWORD THAT MUST BE:
 POSITIVE - FOR STRUCTURES GROWING UP IN MEMORY
 NEGATIVE - FOR STRUCTURES GROWING DOWN IN MEMORY
 OR BLANK, IN WHICH CASE 'POSITIVE' IS ASSUMED.

THE LABEL, SIZE LIST IS THE SYMBOLIC NAME FOR THE LOCATION
 AND THE OPTIONAL SIZE OF THE ELEMENT. IF BLANK, SIZE IS
 ASSUMED TO BE 4 (ONE LONGWORD).

TO PERMIT THE DEFINITION OF AN INDEFINITLY LARGE NUMBER OF LABELS,
 THE MACRO MAY BE CONTINUED. IN THIS CASE THE "INITIAL" AND
 "DIRECTION" ARGUMENTS MUST BE BLANK.

--
 .MACRO \$OFFSET INITVALUE,DIRECTION,SYMLST
 .SAVE
 .PSECT \$ABSS ABS
 .IF B,INITVALUE
 .=SAVABS
 .IF NB,DIRECTION

```
.ERROR ; DIRECTION MUST BE BLANK WHEN CONTINUING;
.MEXIT
.ENDC
.IFF
DIR...=1
.=INITVALUE
.IF NB,DIRECTION
.IF IDN <DIRECTION>,<POSITIVE>
.IFF
.IF IDN <DIRECTION>,<NEGATIVE>
DIR...=-1
.IFF
.ERROR ; 'DIRECTION' MUST BE 'POSITIVE','NEGATIVE', OR BLANK;
.ENDC
.ENDC
.ENDC
.ENDC
.IRP SYM,<SYMLST>
$OFFST1 SYM
.ENDR
SAVABS...=.
.RESTORE
.ENDM $OFFSET

.MACRO $OFFST1 SYM,SIZ=4
.IF LT,SIZ
.ERROR ;***** SIZ PARAMETER NEGATIVE *****;
.ENDC
.IF LT,DIR...
.BLKB -SIZ
.ENDC
.IF NB,SYM
.LIST MEB

.NLIST MEB
.ENDC
.IF GT,DIR...
.BLKB SIZ
.ENDC
.ENDM $OFFST1
```

SYM:

