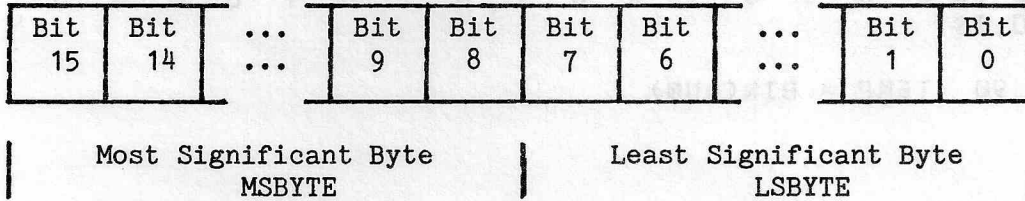


MSBYTE, LSHYTE and JOIN

XYBASIC stores integer values internally in 16-bit representations, but the 8080 uses a byte of 8 bits for input, output and data. The functions MSBYTE and LSHYTE allow you to take apart 16-bit integer values into two 8-bit components.



Assume I = 1110 1101 1010 0110 binary. Then MSBYTE (I) = 1110 1101 and LSHYTE (I) = 1010 0110.

Try the following program to get a feeling for MSBYTE and LSHYTE.

```

NEW
OK
10 FOR I = 0 TO 1024 STEP 64
20 PRINT I, MSBYTE(I), LSHYTE(I)
30 NEXT I
RUN
  0      0      0
 64      0      64
128      0     128
192      0     192
256      1      0
320      1     64
384      1    128
448      1    192
512      2      0
576      2     64
640      2    128
704      2    192
768      3      0
832      3     64
896      3    128
960      3    192
1024     4      0
  
```

OK

Conversely, the JOIN operator lets you concatenate two 8-bit quantities into a 16-bit quantity. For example, say

```

PRINT 1 JOIN 2
258
OK
PRINT #FF JOIN #FF
-1
OK
  
```

Here 1 (binary &0000 0001) and 2 (binary &0000 0010) were JOINed to give 258 (binary &0000 0001 0000 0010). Then #FF and #FF were JOINed to give -1