Machine language programs: Determining the length of code

In the case of a short machine language program, you just count the bytes to
determine the length of code. This method is not practical for longer programs,
though; for such programs, hexadecimal arithmetic is more useful. If you're
familiar with hex digits (A = 10, B = 11, C = 12, D = 13, E = 14, F = 15),
you can subtract hex locations, just like decimal numbers.

To discover the length of a longer machine language program, simply add 1 to
the last location used by the machine language program, and then subtract
from that the first location used by the program. For example, an ending
address of $0357 and a starting address of $0300 would yield the calculation
($0357 + $0001) - $0300, or a length of $58:

```
last + 1              0   3   5   8
first               - 0   3   0   0
length                0   0   5   8
```

Likewise, the length of a program with an ending address of $03AC and a
starting address of $031B is $92:

```
last + 1              0   3   A   D
first               - 0   3   1   B
length                0   0   9   2
```

In each case above, the answer is the length of the machine language program,
and you may use it in a BSAVE command:

BSAVE PROGRAM, A$0300, L$58

You'll find more extensive explanations of hexadecimal arithmetic in most
introductory machine language books. Check with a local book store or Apple
dealer to help you locate one.
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