Lab #6

Exercise #1 (5 pts): Categorizing ASCII codes

Write an assembly program which repeatedly prompts the user to enter a signed integer (recall that `read_int` reads in 4-byte values into `eax`). The program stops immediately if the integer is strictly negative. For each entered positive integer the program prints one of the following statements:

- "It's the ASCII code for a white space." ***which is equal to 32***
- "It's the ASCII code for a digit." ***which is between 48 and 57***
- "It's some non-extended ASCII code." ***which is between 0 and 127***
- "It's some extended ASCII code." ***which is between* 128 and 255**
- "It's not an ASCII code." ***which is greater than 255***

You can assume that the user enters valid numbers. Here is an example interaction with the program, with user input in boldface:

```
Enter an integer: 12
It's some non-extended ASCII code.
Enter an integer: 32
It's the ASCII code for a white space.
Enter an integer: 65
It's some non-extended ASCII code.
Enter an integer: 75
It's some non-extended ASCII code.
Enter an integer: 49
It's the ASCII code for a digit.
Enter an integer: 52
It's the ASCII code for a digit.
Enter an integer: 240
It's some extended ASCII code.
Enter an integer: 540
It's not an ASCII code.
Enter an integer: 129
It's some extended ASCII code.
Enter an integer: 12
It's some non-extended ASCII code.
Enter an integer: -1
```

Exercise #2 (5 pts): Identifying Divisors

Write an assembly program which repeatedly prompts the user to enter a signed integer until the user has entered an integer that's strictly negative. At that point the program prints out how many of the entered integers are divisible by 2, how many of them are divisible by 3, and how many of them are divisible by 5. You can assume that the user enters valid numbers. Here is an example interaction with the program, with user input in boldface:

```
Enter an integer: 10
Enter an integer: 12
Enter an integer: 4
Enter an integer: 7
Enter an integer: 14
Enter an integer: 20
Enter an integer: 50
Enter an integer: 1246
Enter an integer: -1
The number of integers divisible by 2 is 7
The number of integers divisible by 3 is 1
The number of integers divisible by 5 is 3
```