First Assignment Sheet

1. Using SPIM, write and test an adding machine program that repeatedly reads in integers and adds them into a running sum. The program would stop when it gets an input that is 0, printing out the sum at that point.

2. Using SPIM, write and test a program that reads in three integers and prints out the sum of the largest two of three. You can break ties arbitrarily.

3. Using SPIM, write and test a program that reads in a positive integer using the SPIM system calls. If the integer is not positive, the program should terminate with the message "Invalid Entry"; otherwise the program should print out the names of the digits of the integers delimited by exactly one space. For example is the number entered is "728", the output would be "seven two eight".

4. Write and test a MIPS assembly language program to compute and print the first 20 prime numbers. A number n is prime if no numbers except 1 and n divide it evenly. You should implement two routines:
- **test_prime (n)** Return 1 if n is prime and 0 if not prime
- **main( )** Iterate over the integers, testing if each is prime. Print the first 20 numbers that are prime.

Test your programs by running them on SPIM.