

## I.8 Primality Function

Lilleigh Stevie

February 25, 2019

I created the variable  $n$  for the  $n$ th prime, a primes list starting with 2 and 3, and set length equal to the length of the primes list. For my primality test, I first created a function to check if an inputted number is prime. To do this, I created a flag called `isprime` to keep track of the prime numbers, such that when `isprime` is 0, the number is prime and when it is greater than 0, the number is not prime. Then I created a for loop that goes from 2 to the square root of the number plus 1 with an if else statement. The if checks if the number is composite using the mod function and increments `isprime` and the else doesn't change `isprime`. Then, I used another if else outside of the for loop, where if `isprime` is 0 it returns true and else it returns false. To find the  $n$ th prime, I used a while loop for  $n$  greater equal to the length of the primes list. Within this, I stated that if the function of a number is true, then the number is added to the prime list. Then, length is updated and the number is incremented by 1. The  $n$ th prime is  $n-1$  term of the primes list.