Primality Function Gransbury

Isabella Gransbury
MATH 361

February 25, 2019

Problem 1. My primality function contains an if...elif...else statement as well as a for...loop statement. The function as one parameter, n, and returns true if n is prime and false if n is composite. The function begins by declaring a variable, $trueOrFalse$, this tracks if the number n is defined as prime and changes value to true or false. First, n is checked to see if it is equal to 2, the first prime number.If n is equal to 2, the function automatically returns true.If n is not equal to 2, the function enters the next if...else statement. If n is greater than 1, the function then enters a for loop from range 2 to n, exclusive. In the loop n is modulus divided by 2 and by each number after 2 to n, but not including n, and checked to see if there is a remainder of 0. This tests that each number before n cannot divide n. If there is a number before n that n modulus divided by the number is equal to 0, that number is composite and the variable $trueOrFalse$ is changed to false and the loop breaks. If there is not a number before n that n modulus divided by the number is equal to 0, that number is prime and the variable $trueOrFalse$ is changed to true. The final return statement returns $trueOrFalse$, which is whether or not n is prime or composite.