

Problem I8: Primality Function

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My code consists of a function called `prime_check`, and the input of the function is some integer x we want to check the primality of. The function starts by assigning the value “True” to a variable called “prime”. Then a for loop that ranges from 2 to x will calculate $x \bmod i$ (where i is the variable in the loop). If $x \bmod i$ is not equal to zero, “prime” will remain “True”, and the loop will move on to the next number. If $x \bmod i$ is equal to zero, the variable “prime” is assigned the value “False”, and the loop will end. Then the function returns the value of the variable “prime”.

For example, if fifteen were the input of the function, the function would first assign prime as True, and then start the for loop by computing $15 \bmod 2$. Since $15 \bmod 2$ is not equal to zero, prime will remain True. The loop will then move on to 3, and since $15 \bmod 3$ equals zero, prime will become False, and the loop will then break so that the function will return the value of prime as False for 15.