

CS100M Lab 4

1. Complete the following code in a script so that all the numbers between F_n and F_{n+1} are printed. As a reminder, $F_1 = 1$, $F_2 = 1$, and $F_k = F_{k-1} + F_{k-2}$ for $k > 2$. For example, if $n = 6$, then the numbers between $F_6 (= 8)$ and $F_7 (= 13)$ are 9, 10, 11 and 12. Do not use the *for* loop, use the *while* loop instead.

```
N = input('Input N: ');
tempValue1 = 1;
tempValue2 = 1;
% Add the necessary code here
```

2. Write a script that, given a number n , prints out all the prime numbers from 2 to n inclusive. As a reminder, a number m is prime if and only if it is not 1, and the only divisors of m are 1 and itself. Your script should ask the user to key in the value of n and display all the appropriate prime numbers.

3. Write a Matlab function **aprime(m)** that has an input parameter **m**. Function **aprime(m)** returns 1 if **m** is prime, and 0 otherwise. Remember to write a concise comment to describe the function, including its parameters under the function header.

4. A *twin prime* is a pair of primes such that if p is a prime, $p + 2$ is also a prime. The larger prime in the pair is called the *big* prime, while the smaller prime is called the *little* prime. For example, in the twin prime pair (3,5), 5 is the big prime while 3 is the little prime. Write a function **lastTwinPair(n)** that will, given a number **n** greater than or equal to 3, return the last (largest) twin prime pair smaller than or equal to **n**. Use function **aprime** from the previous question! This function has two output arguments: **littlep** and **bigp**.

Please delete your files from the computer before you leave!