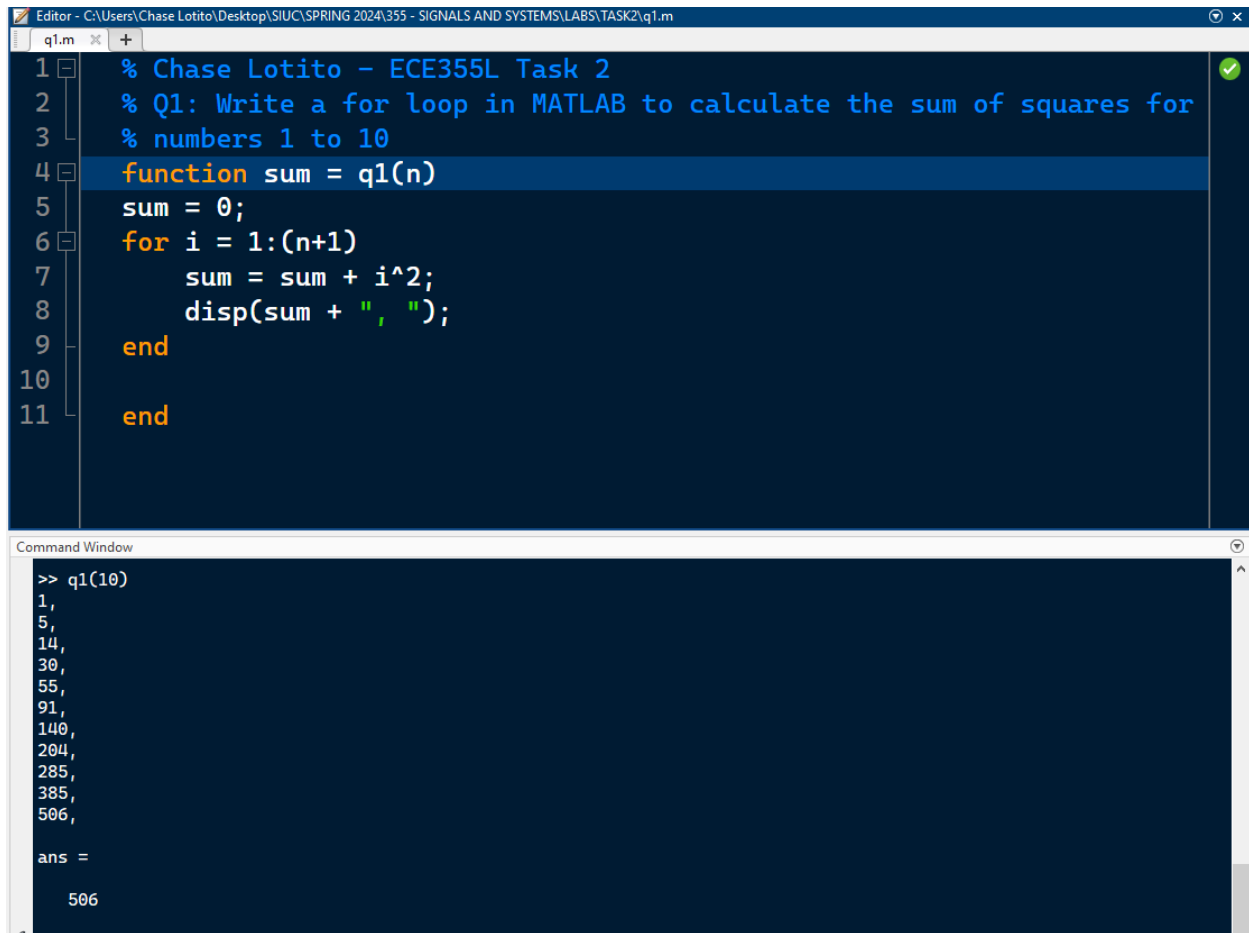


Chase Lotito

Q1:

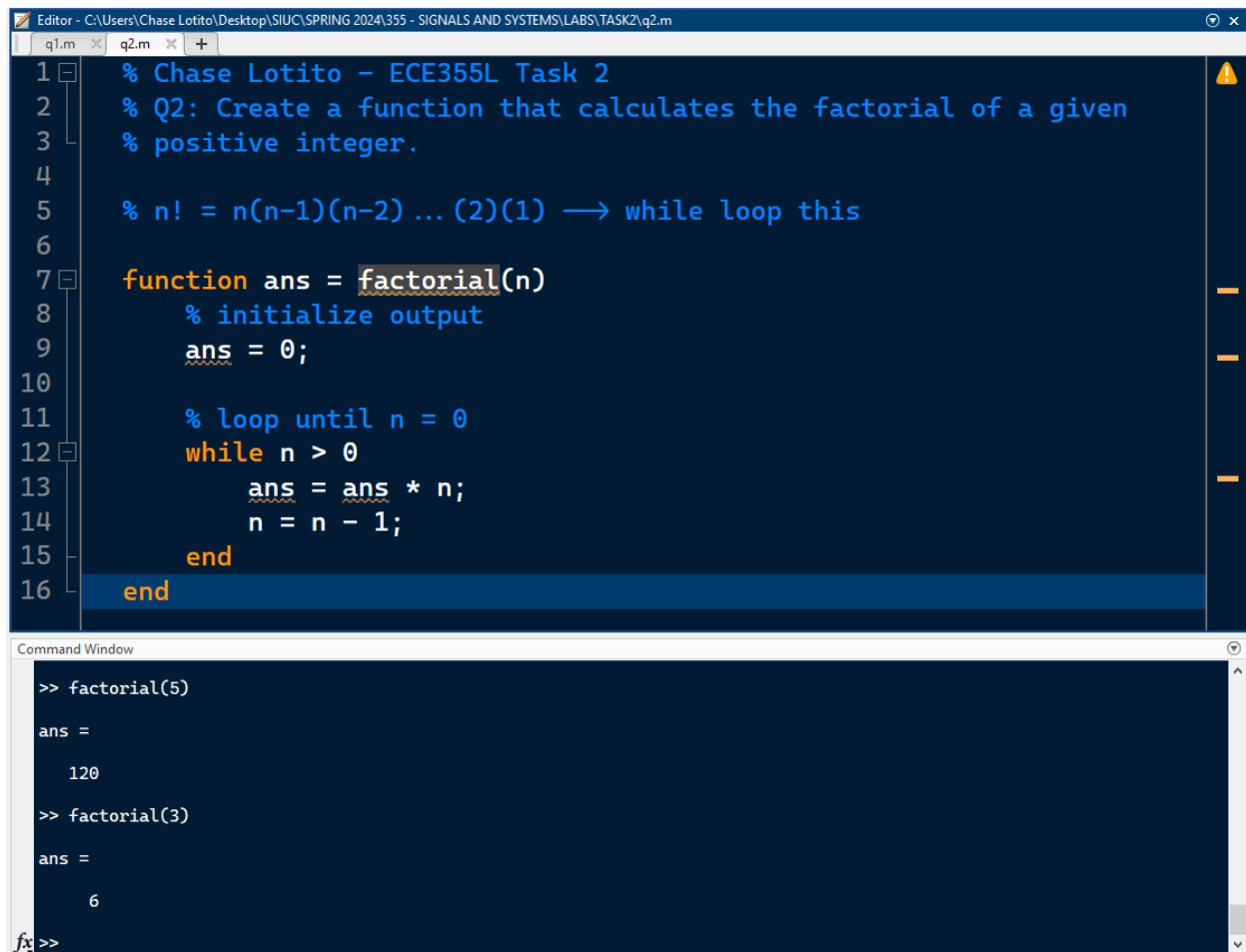


The image shows a MATLAB environment with two windows. The top window is the Editor, displaying a function named `q1(n)`. The function calculates the sum of squares for numbers 1 to `n` using a `for` loop. The bottom window is the Command Window, showing the execution of `q1(10)`, which outputs the sequence of squares from 1 to 100 and the final sum, 506.

```
Editor - C:\Users\Chase Lotito\Desktop\SIUC\SPRING 2024\355 - SIGNALS AND SYSTEMS\LABS\TASK2\q1.m
q1.m
1 % Chase Lotito - ECE355L Task 2
2 % Q1: Write a for loop in MATLAB to calculate the sum of squares for
3 % numbers 1 to 10
4 function sum = q1(n)
5     sum = 0;
6     for i = 1:(n+1)
7         sum = sum + i^2;
8         disp(sum + ", ");
9     end
10
11 end

Command Window
>> q1(10)
1,
5,
14,
30,
55,
91,
140,
204,
285,
385,
506,
ans =
506
```

Q2:

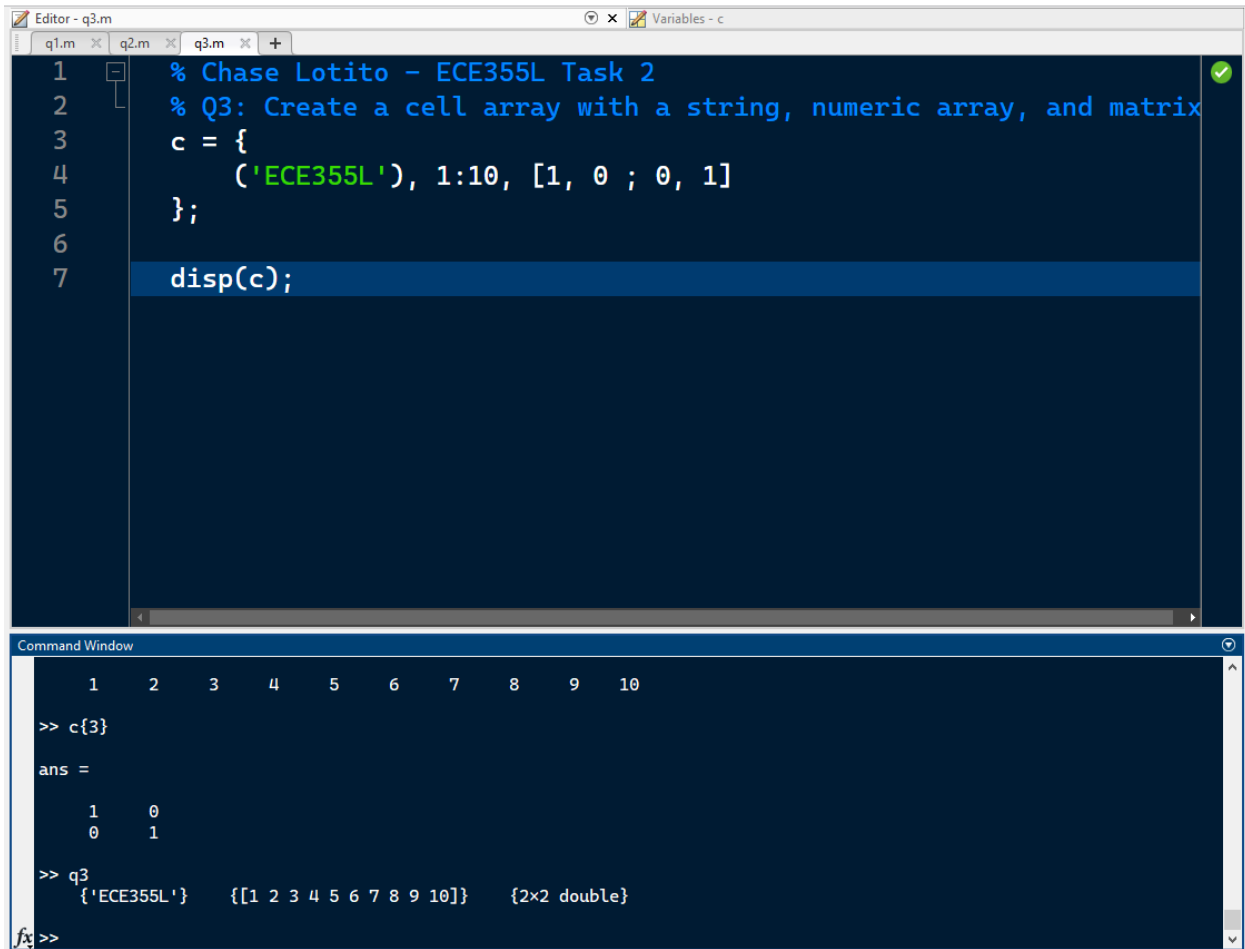


The image shows a MATLAB environment with two windows. The top window is the MATLAB Editor, displaying a script named 'q2.m'. The script contains a function definition for 'factorial(n)'. The function initializes 'ans' to 0 and enters a 'while' loop that continues as long as 'n' is greater than 0. Inside the loop, 'ans' is multiplied by 'n', and 'n' is decremented by 1. The function ends with 'end'. The bottom window is the Command Window, showing the execution of the function. It displays the results of 'factorial(5)' as 120 and 'factorial(3)' as 6.

```
Editor - C:\Users\Chase Lotito\Desktop\SIUC\SPRING 2024\355 - SIGNALS AND SYSTEMS\LABS\TASK2\q2.m
q1.m q2.m +
1 % Chase Lotito - ECE355L Task 2
2 % Q2: Create a function that calculates the factorial of a given
3 % positive integer.
4
5 % n! = n(n-1)(n-2) ... (2)(1) → while loop this
6
7 function ans = factorial(n)
8     % initialize output
9     ans = 0;
10
11     % loop until n = 0
12     while n > 0
13         ans = ans * n;
14         n = n - 1;
15     end
16 end

Command Window
>> factorial(5)
ans =
    120
>> factorial(3)
ans =
     6
fx>>
```

Q3:



The image shows a MATLAB environment with two windows. The top window is the 'Editor - q3.m' window, which contains the following code:

```
1 % Chase Lotito - ECE355L Task 2
2 % Q3: Create a cell array with a string, numeric array, and matrix
3 c = {
4     ('ECE355L'), 1:10, [1, 0 ; 0, 1]
5 };
6
7 disp(c);
```

The bottom window is the 'Command Window', which shows the output of the code:

```
>> c{3}

ans =

     1     0
     0     1

>> q3
{'ECE355L'}    {[1 2 3 4 5 6 7 8 9 10]}    {2x2 double}
```

The Command Window also shows a prompt for the next command: `f>>`.