355L - Task 1

↗ Course	🪧 SIGNALS AND SYSTEMS
☑ Complete	☐
📅 Due date	@February 10, 2024
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≔ TYPE	LAB

Q1: What is MATLAB?

MATLAB is a programming language and IDE; the official name is "Matrix Laboratory", as it is well-designed for computing with matricies.

Q2: How to plot a graph in MATLAB?

```
t = [0:0.1:20];
a = sin(t);
plot(t, a, 'B*--');
xlabel('time');
ylabel('amplitude');
title('f(t) = sin(t)');
```

This code plots sin(t) from 0 to 20 in steps of 0.1. We can specify that we want a blue plot with B, f(t) values to be plotted with *, and the remainder of the plot to be connected with - -.

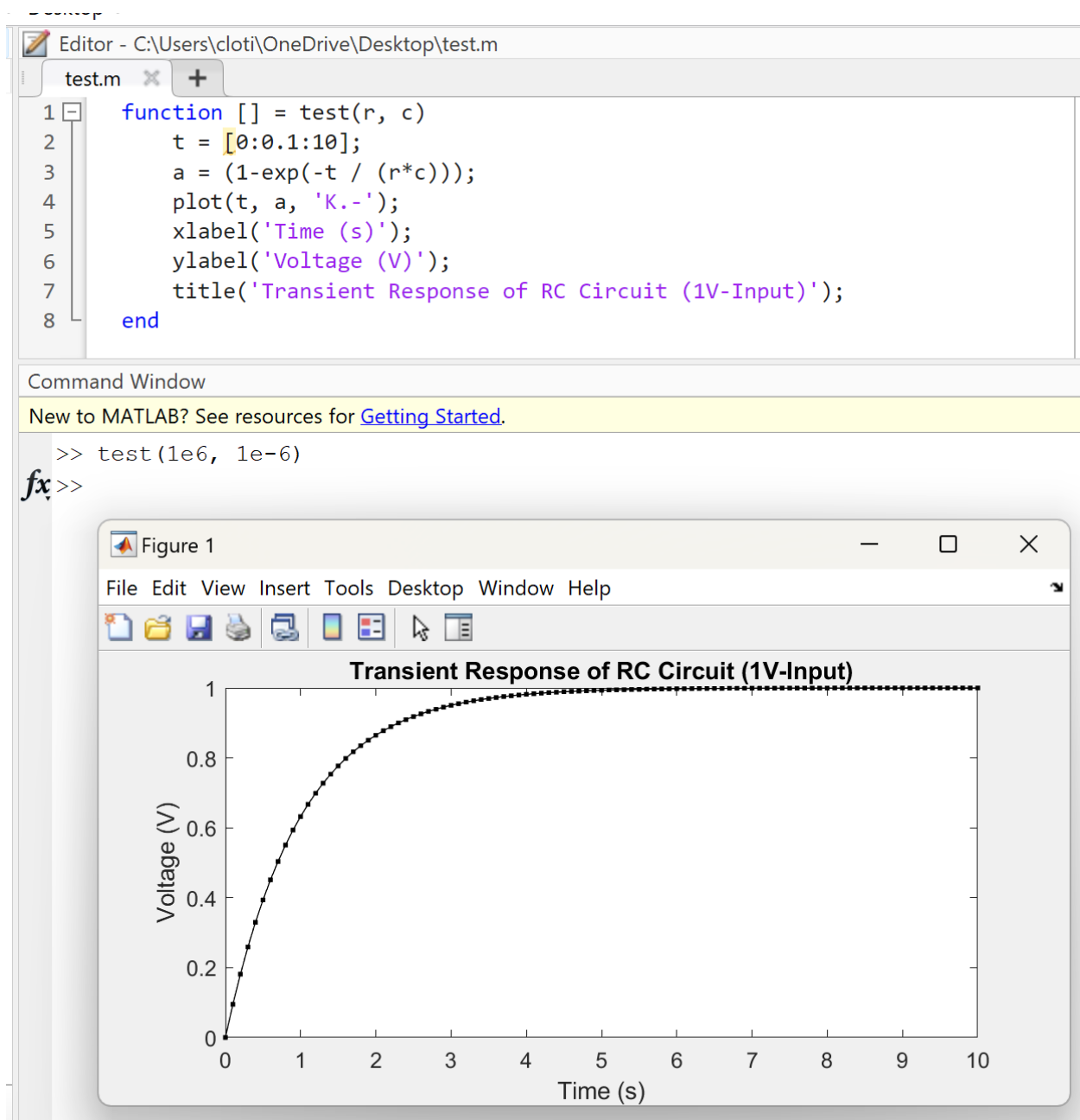We also can add axis labels and a plot title.

Q3: What is MATLAB used for?

MATLAB can be used for analyzing data, like making plots or doing computations. It is a robust computational tool, which can be helpful with solving problems with matricies and even complex numbers.

Q4: How to run MATLAB code?

You can run one-line commands or execute scripts in the 'Command Window'.

You can write a script (.m file extension) and call the name of that script with any input parameters as needed.

Example of written script, test.m, and then the code called in Command Window, and then the output via a plot.

Q5: How to call a function in MATLAB?

There are two types of functions in MATLAB: built-in functions, and user-defined functions.

- Built-in functions can be called anywhere with the proper syntax, either in a script or the Command Window.

```
% COMMAND WINDOW
>> sin(pi)
0
```

- User-defined functions are written in scripts and then can be called by the script name in the command window, along with any input variables as needed.

```
% helloWorld.m
function [] = helloWorld() % this function has no inputs and
    disp('Hello World');
end

% COMMAND WINDOW
>> helloWorld
'Hello World'
```