Lab #1
ECE 2026 Fall 2023
LAB COMPLETION REPORT

Name: Mythri Muralikannan Date of Lab: Sept 11th 2023

Part 3.1 Write the string reversal output below and show it to the instructor.

```
5   %% 3.1 Interactive Input in MATLAB
6
7   strInput = input ("Input text: ", "s");
8   strRev = strInput(end:-1:1)
9
```

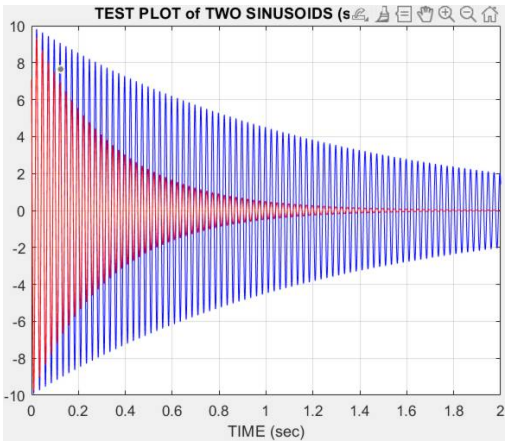
Command Window

```
Input text: Mythri Muralikannan

strRev =

    'nannakilaruM irhtyM'
```

Part 3.2 Replace the inner `for` loop with only one or two lines of vectorized MATLAB code. Write the MATLAB code in the space below:

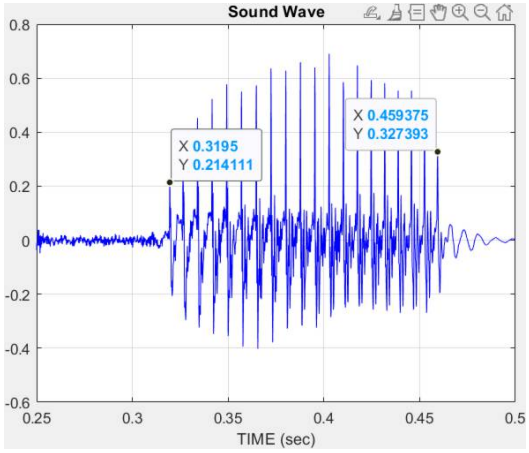
```
%--- make a plot of sum of cosines
dt = 1/800;
XX = rand(1,3).*exp(2i*pi*rand(1,3)); %--Random amplitude and phases
freq = 20;
ccsum = zeros(1,500);
for kx = 1:length(XX)
    tt(1:500) = (1:500)*dt;
    ccsum (1:500) = ccsum(1:500) + abs(XX(kx)).*cos((2*pi*freq).*(1:500)*dt + angle(XX(kx)));
end
plot(tt,ccsum) %-- Plot the sum sinusoid
grid on, zoom on, shg
```

Part 3.3 Show the plot of a decaying sinusoid.



Part 3.4 Read in a voice file and plot a section. Locate a vowel region containing a quasi-periodic waveform with higher amplitude than neighboring consonant sections. Measure the pitch period, which is the duration of a period in the vowel sound. The inverse of it is called pitch which is a vibrating frequency of a speaker's glottis when pronouncing the vowel. We will come back to this issue later in Lab #3.

Pitch Period = (0.459375 - 0.3195)/19 = 0.0073618421
Pitch = 1/Pitch Period = 135.835



Part 3.5.1 Show the plot of a time-reversed decaying sinusoid.