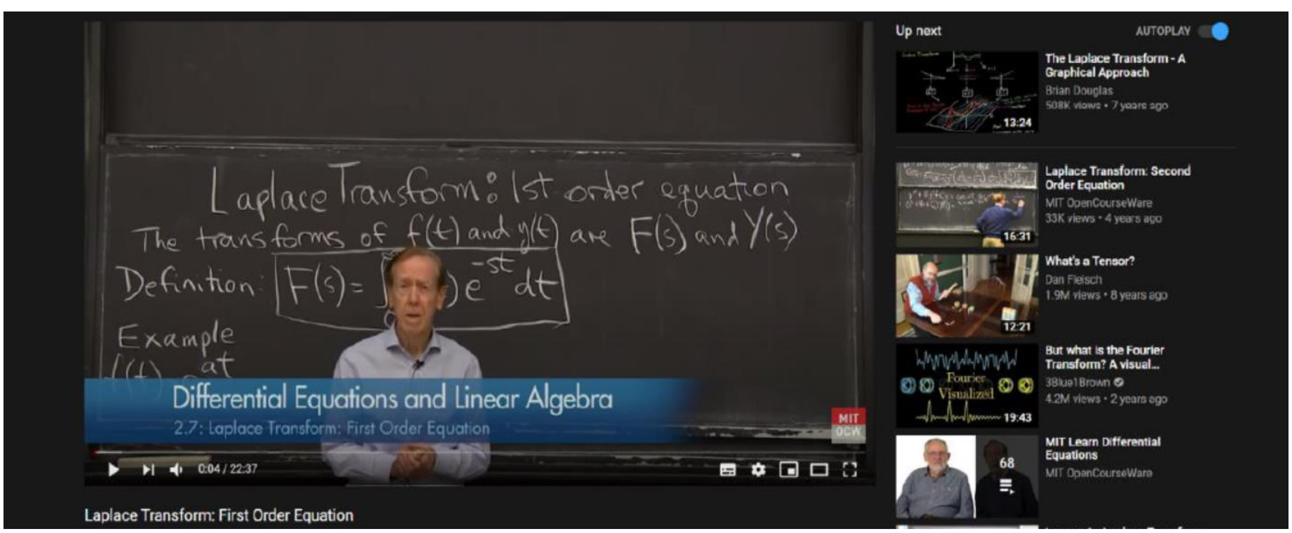
DAILY ASSESSMENT REPORT

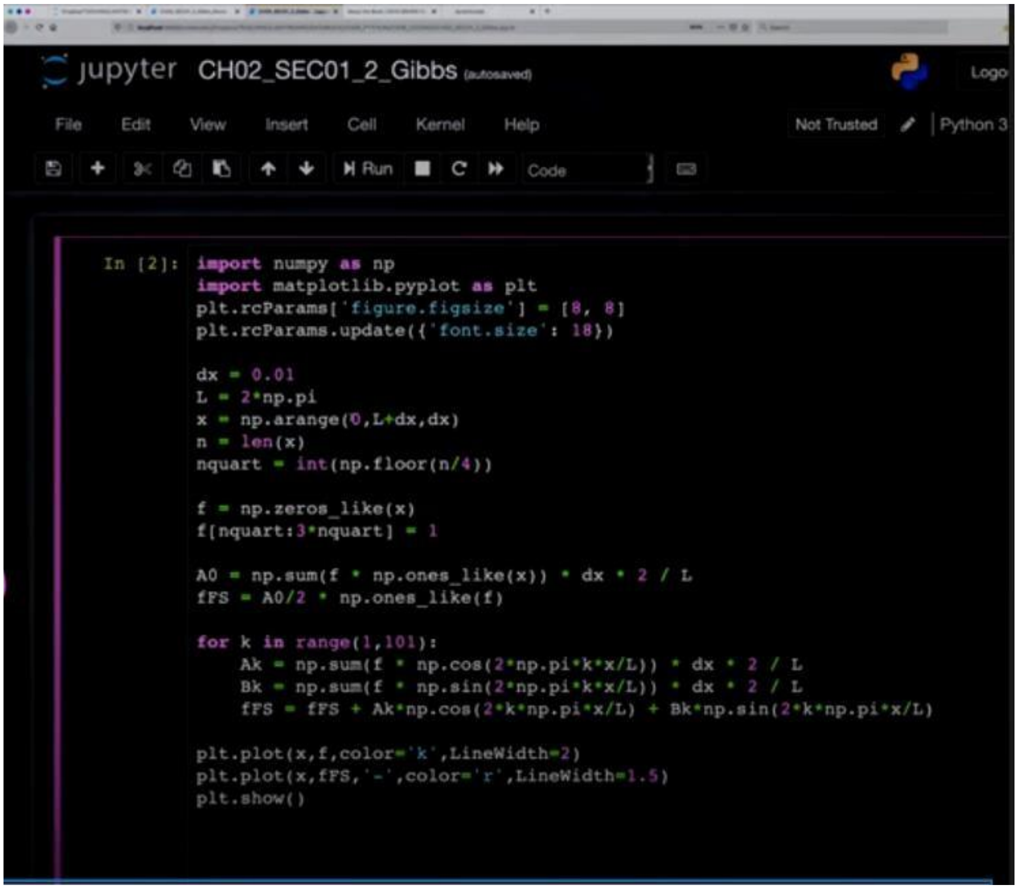
Date:	**26 May 2020**	**Name:**	**PAVITHRAN S**
Course:	**DIGITAL SIGNAL PROCESSING**	**USN:**	**4AL17EC068**
Topic:	• **Fourier Series & Gibbs Phenomena using Python** • **Fourier Transform** • **Fourier Transform Derivatives** • **Fourier Transform and Convolution** • **Intuition of Fourier Transform and Laplace Transform** • **Laplace Transform of First order** • **Implementation of Laplace Transform using Matlab** • **Applications of Z-Transform** • **Find the Z-Transform of sequence using Matlab**	**Semester & Section:**	**6th B**
Github Repository:	**Pavithran**		

FORENOON SESSION DETAILS
Image of session



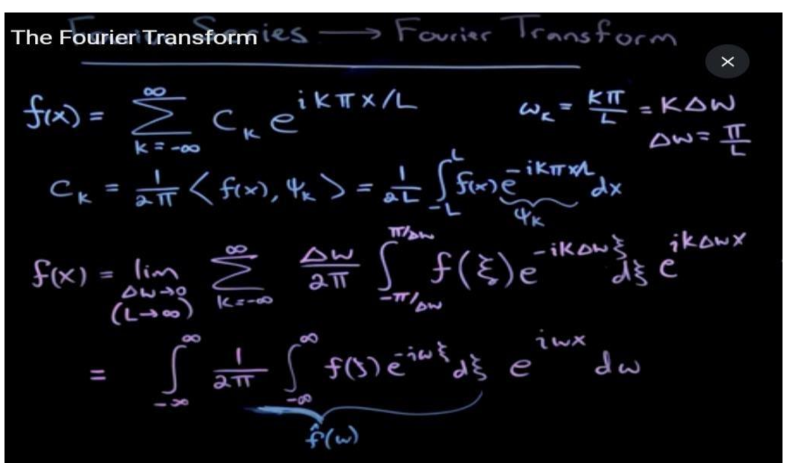
Report – Report can be typed or hand written for up to two pages.

Fourier Series & Gibbs Phenomena using Python:



Fourier Transform & Fourier Transform Derivatives:

- **Digital Signal Processing/Discrete Fourier Transform. As the name implies, the Discrete Fourier Transform (DFT) is purely discrete: discrete-time data sets are converted into a discrete-frequency representation. This is in contrast to the DTFT that uses discrete time, but converts to continuous frequency.**



Fourier Transform and Convolution:

- **Why study Fourier transforms and convolution? Each of these sinusoidal terms has a magnitude (scale factor) and a phase (shift). – Note that in a computer, we can represent a function as an array of numbers giving the values of that function at equally spaced points.**

Laplace Transform of First order:

- **One familiar input to a first order system is the step change or step input. A step change from 0 to 1 is equivalent to a function that is equal to 0 for time < 0, and is equal to 1 for time ³ 0. The Laplace transform of such a function is 1/s.**

$$\frac{\theta_o(s)}{\theta_i(s)} = \frac{\theta_o(s)}{a/s}$$

$$\Rightarrow \theta_o(s) = \frac{a}{s}\frac{K}{(1+\tau s)} = Ka\frac{1}{s(1+\tau s)}$$

$$\Rightarrow \theta_o(s) = Ka\frac{1/\tau}{s(1/\tau + s)} = Ka\frac{1/\tau}{s(s+1/\tau)}$$

Implementation of Laplace Transform using Matlab:

Code:

```
Editor - C:\Users\Lenovo\Documents\MATLAB\
laplace.m    inverse_laplace.m

clc;
clear all;

syms L f t a;
f=exp(-a*t);
L=laplace(f)
```

Output:

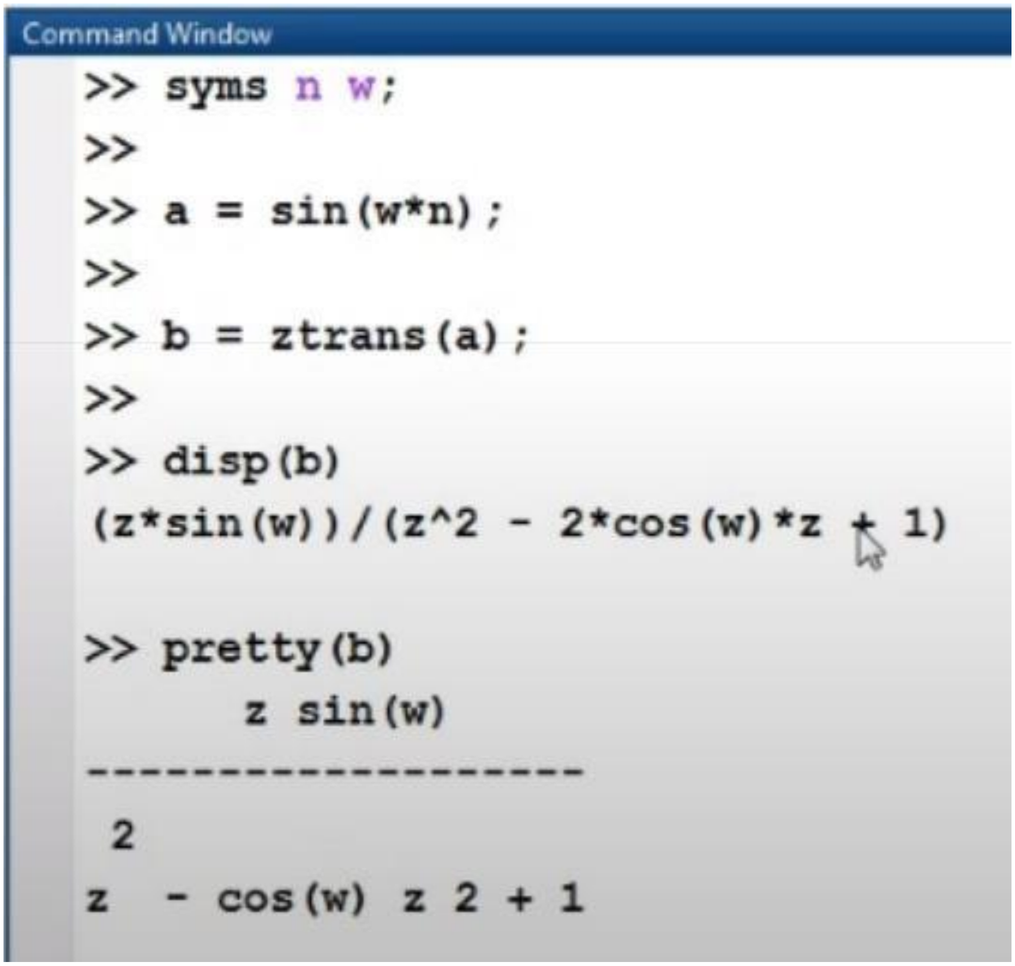
```
L =

1/(a + s)
```

Applications of Z-Transform

- **Sampled systems**
- **Inputs and outputs are related by difference equations and Z-transform techniques are used to solve those difference equations.**
- **VOICE TRANSMISSION: To band-limit the signal and filter noise from the signal.**
- **Calculation of a signal to control a system.**

Find the Z-Transform of sequence using Matlab:

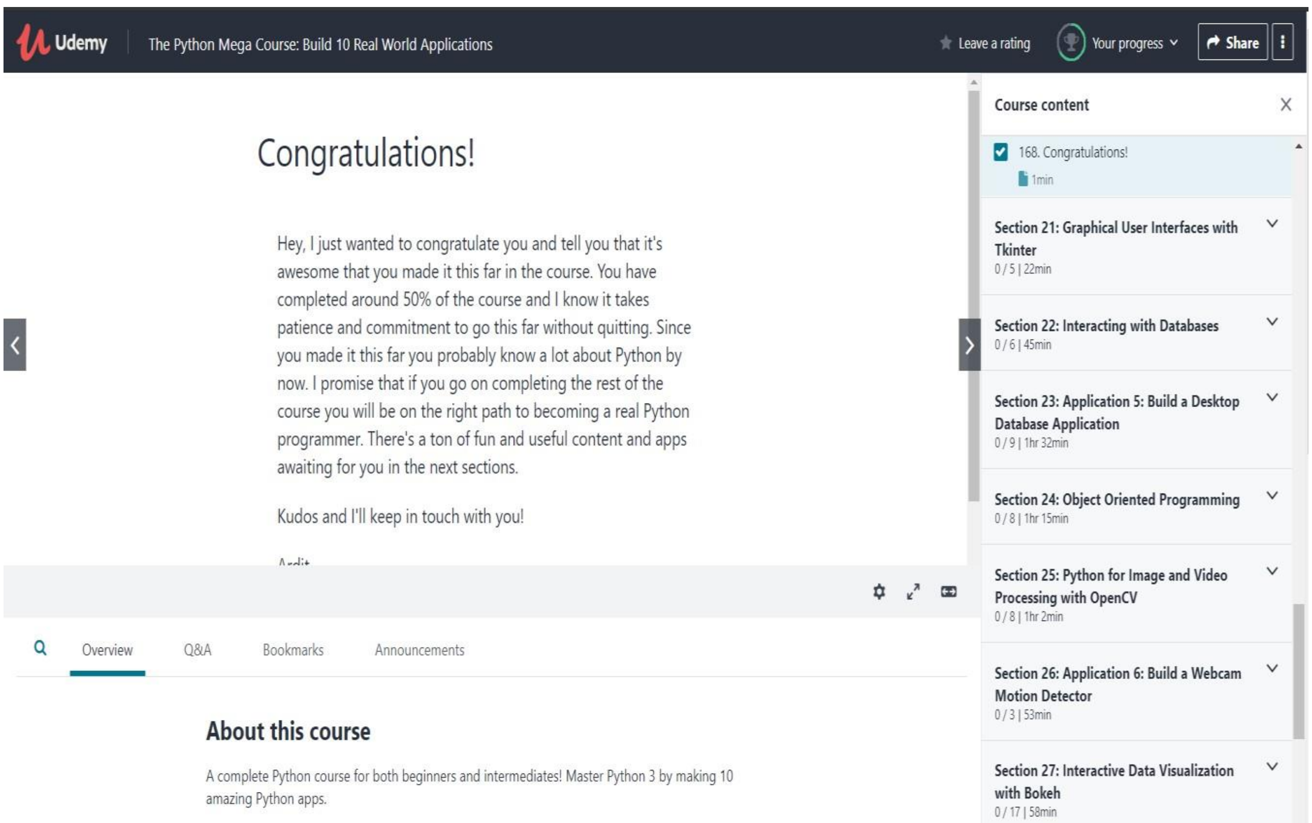


- **The above picture is a basic example of Z-Transform using Matlab.**

Date:	26 May 2020	Name:	PAVITHRAN S
Course:	The Python Mega Course	USN:	4AL17EC068
Topic:	Application 4: Build a Personal Website with Python and Flask	Semester & Section:	6th B

AFTERNOON SESSION DETAILS

Image of session:



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Build a Personal Website with Python and Flask:

- **We have learnt to build our Personal website using Python.**
- **It shows how to render links from one page to another.**
- **It also includes HTML format for making good visuals.**
- **Also shows how to create virtual environment to run the app.**
- **This course helped in putting our website into global domain as well.**
- **There is scope for further improvement in the current website.**
- **The below shown are some images of personal website built by me.**