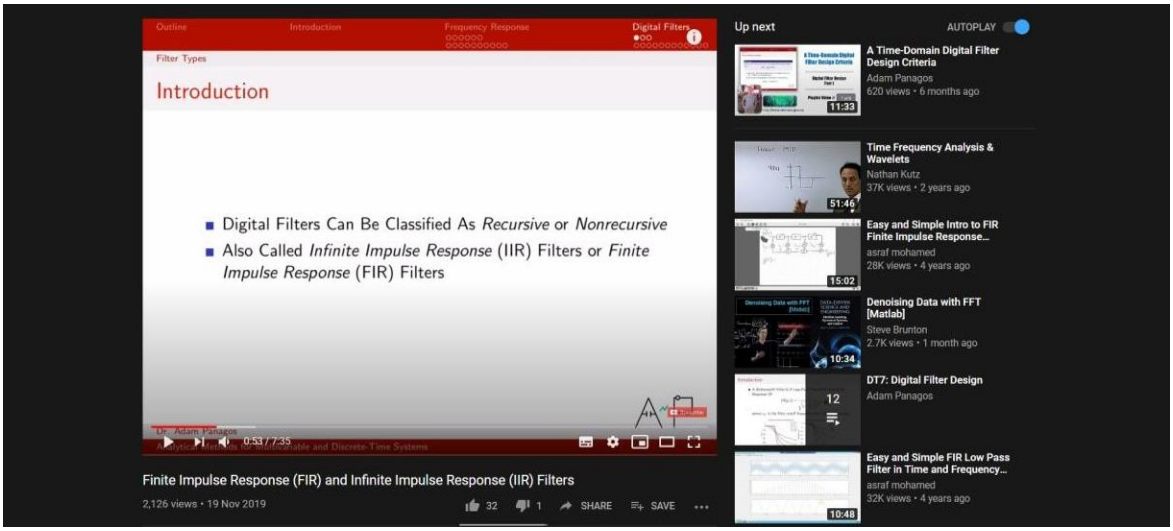
DAILY ASSESSMENT REPORT

Date:	**27 May 2020**	**Name:**	**PAVITHRAN S**
Course:	**DIGITAL SIGNAL PROCESSING**	**USN:**	**4AL17EC068**
Topic:	• **Fourier Transforms** • **FFT** • **FFT Fast Fourier Transform Matlab** • **FIR and IIR Filters**	**Semester & Section:**	**6th B**
Github Repository:	**Pavithran**		

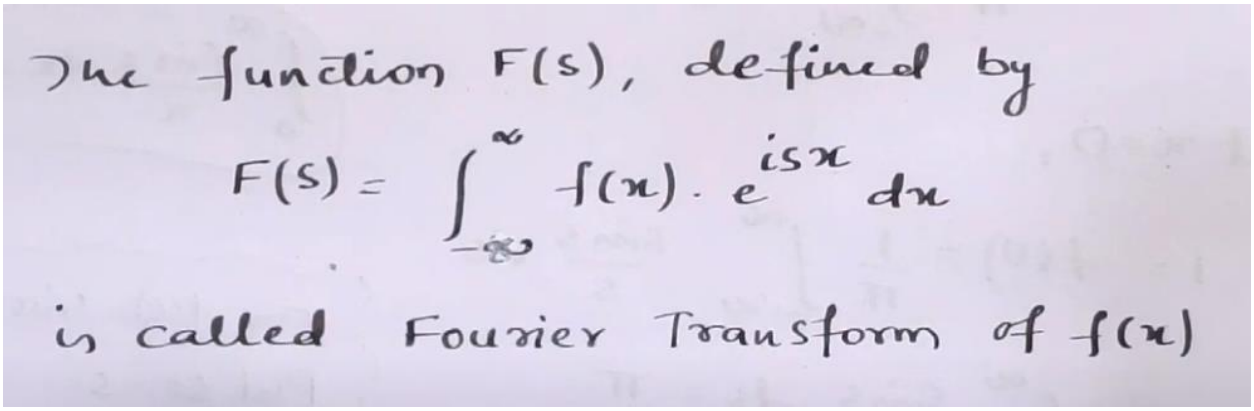
FORENOON SESSION DETAILS
Image of session



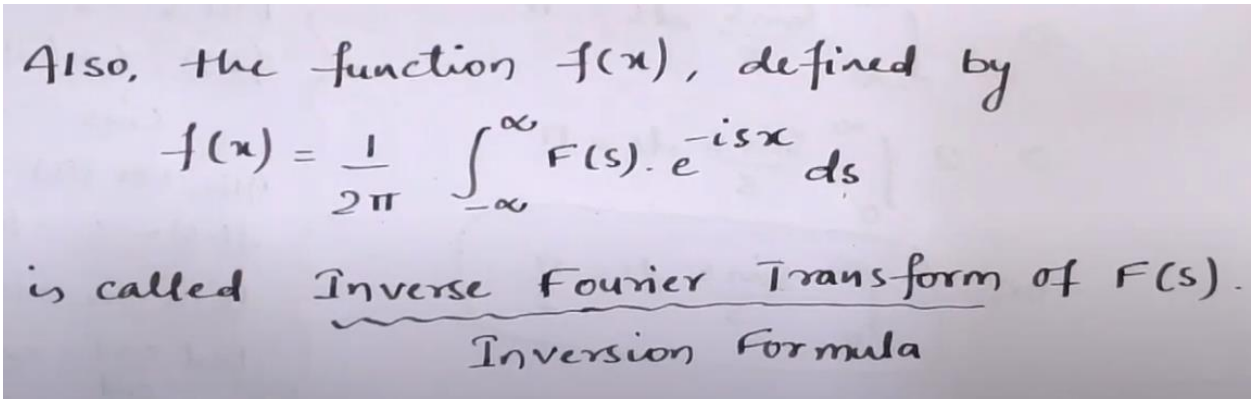
Report – Report can be typed or hand written for up to two pages.

Fourier Transforms:

- **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.**



- **The inverse Fourier transform is given as follows.**



Fast Fourier Transform:

$$X_p = \sum_{n=0}^{N-1} x_n \bullet W_N^{np} \qquad 0 \le p \le N-1$$

$$W_N \triangleq e^{-j\frac{2\pi}{N}}$$

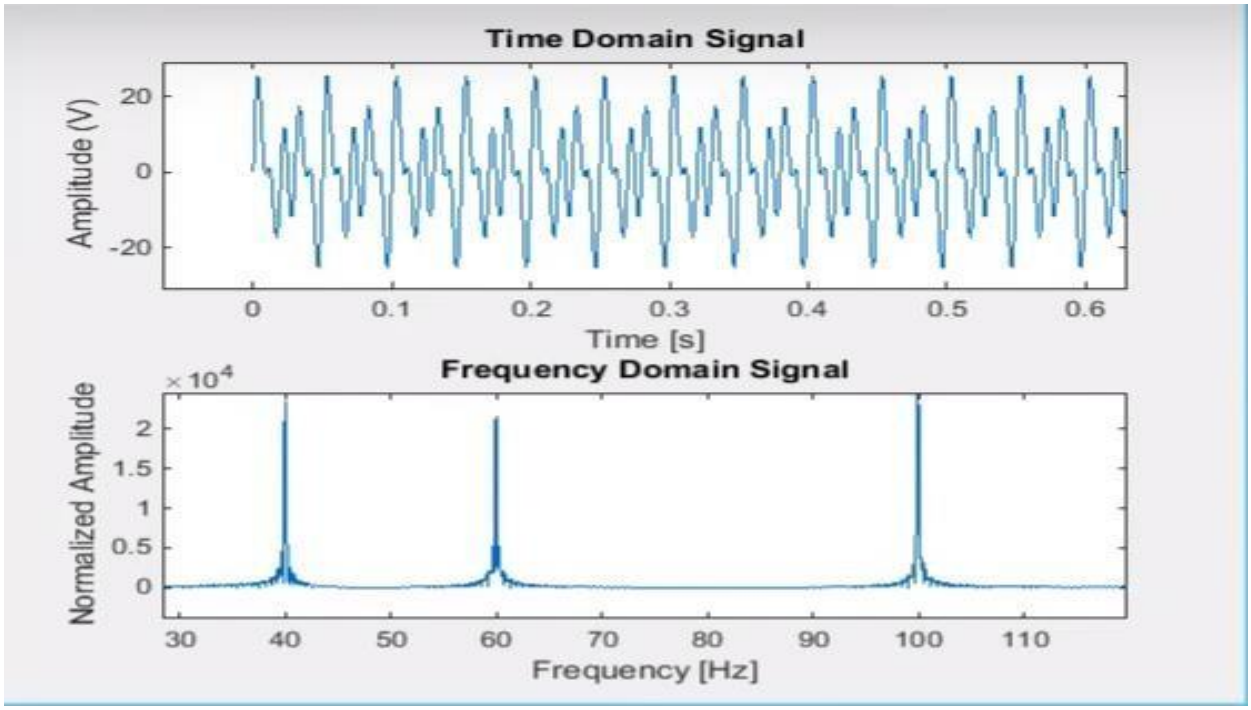
FFT Fast Fourier Transform Matlab :

Code:

```
Fs=1000; %sampling frequency
Ts=1/Fs; %sampling period or time step
dt=0:Ts:5-Ts; %signal duration
f1=10;
f2=30;
f3=70;

% y=Asin(2pift+theta);

y1=10*sin(2*pi*f1*dt);
y2=10*sin(2*pi*f2*dt);
y3=10*sin(2*pi*f3*dt);
y4=y1+y2+y3;

% subplot(4,1,1);
% plot(dt,y1,'r');
% subplot(4,1,2);
% plot(dt,y2,'r');
% subplot(4,1,3);
% plot(dt,y3,'r');
% subplot(4,1,4);
% plot(dt,y4,'r');
```

```
nfft=length(y4); % length of time domain signal
nfft2=2^nextpow2(nfft); % length of signal in power of 2
ff=fft(y4,nfft2);

plot(abs(ff));
```

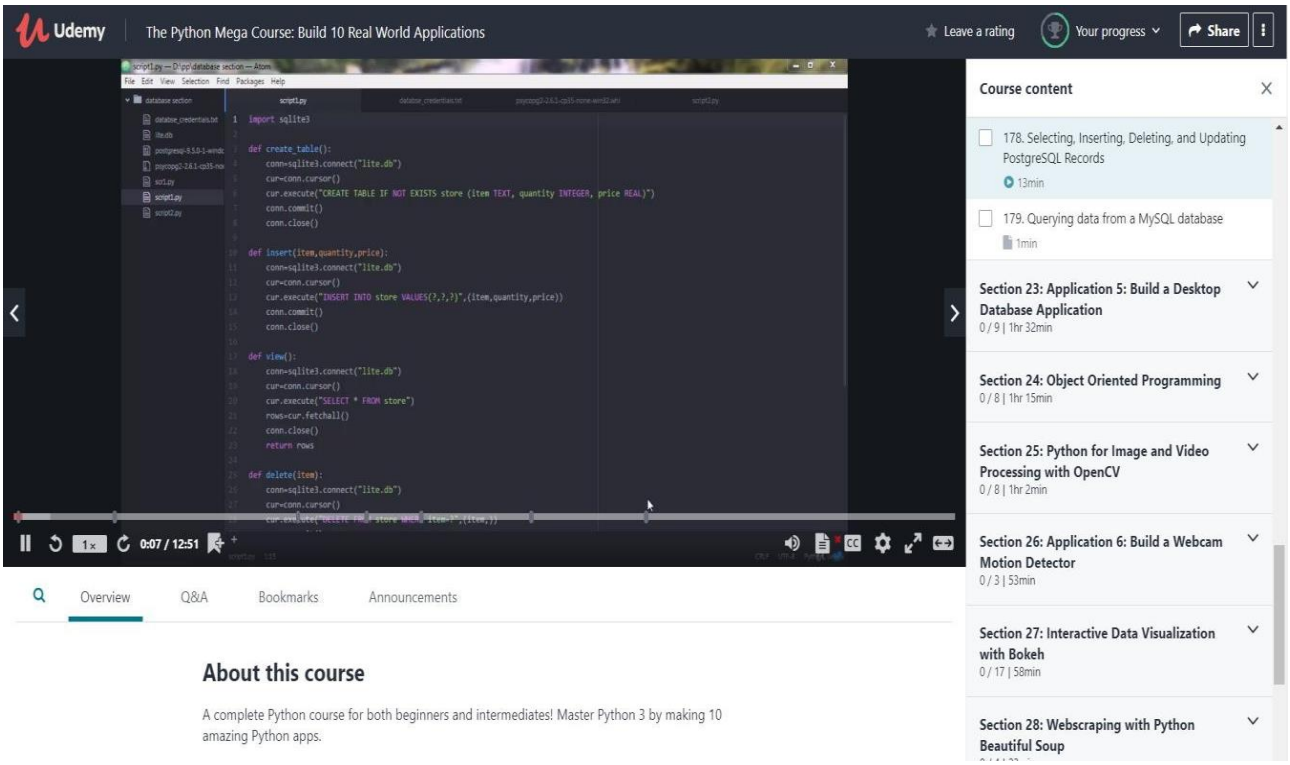
Output:



Date:	27 May 2020	Name:	PAVITHRAN S
Course:	The Python Mega Course	USN:	4AL17EC068
Topic:	• Graphical User Interfaces with Tkinter • Interacting with Databases	Semester & Section:	6th B

AFTERNOON SESSION DETAILS

Image of session:



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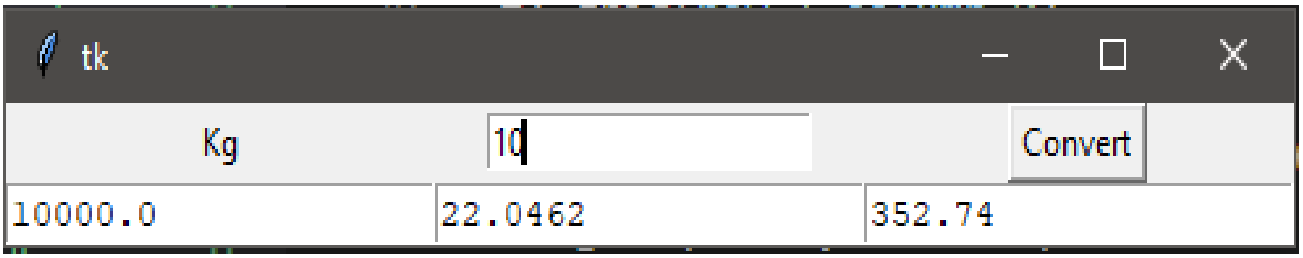
GRAPHICAL USER INTERFACES WITH TKINTER:

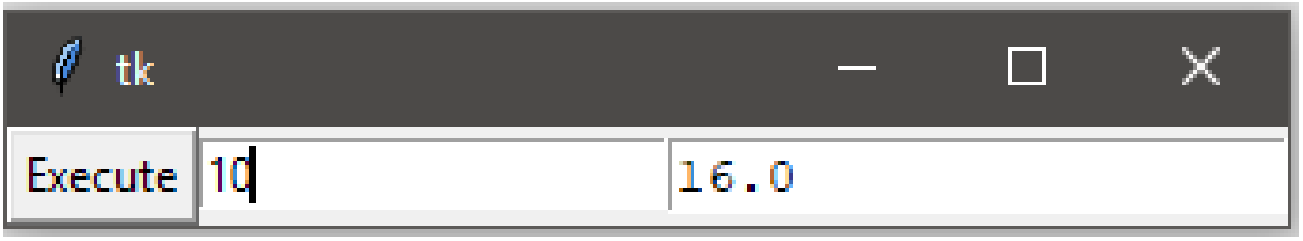
- **Python offers multiple options for developing GUI (Graphical User Interface).**
- **Out of all the GUI methods, tkinter is the most commonly used method.**
- **It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter is the fastest and easiest way to create the GUI applications.**
- **Creating a GUI using tkinter is an easy task.**

INTERACTING WITH DATABASES:

- **Given the variety of techniques available to produce protein-protein interaction data and the large number of studies that are published every day, an enormous effort is required to store this information in a way that is both accessible and intelligible to the user.**
- **Molecular interaction databases aim to fulfil this need by extracting information from scientific publications or, in some cases, by including protein-protein interaction predictions found using computational method. The storage of interactions in publicly available databases allows access to a large volume of interaction data and subsequent analysis of the interactome**



- **The above image converts Kg into Grams, pounds and ounces respectively.**



- **The above image converts Kilo meter into Miles.**