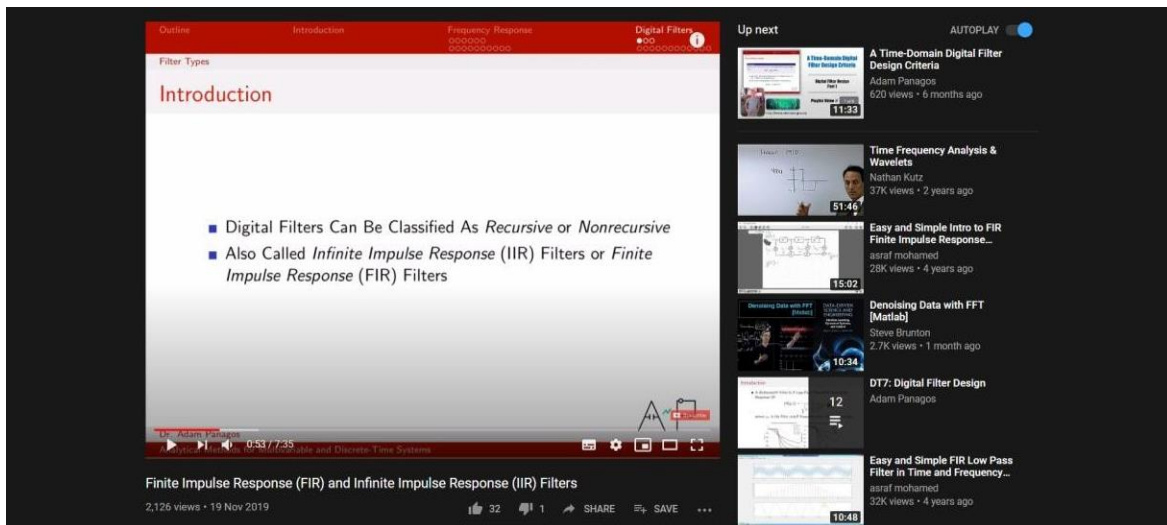


DAILY ASSESSMENT REPORT

Date:	27 May 2020	Name:	PAVITHRAN S
Course:	DIGITAL SIGNAL PROCESSING	USN:	4AL17EC068
Topic:	<ul style="list-style-type: none"> Fourier Transforms FFT FFT Fast Fourier Transform Matlab FIR and IIR Filters 	Semester & Section:	6 th 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 function $F(s)$, defined by

$$F(s) = \int_{-\infty}^{\infty} f(x) \cdot e^{isx} dx$$

is called Fourier Transform of $f(x)$

- The inverse Fourier transform is given as follows.

Also, the function $f(x)$, defined by

$$f(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} F(s) \cdot e^{-isx} ds$$

is called Inverse Fourier Transform of $F(s)$.
Inversion Formula

Fast Fourier Transform:

$$X_p = \sum_{n=0}^{N-1} x_n \cdot W_N^{np} \quad 0 \leq p \leq N-1$$

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

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;

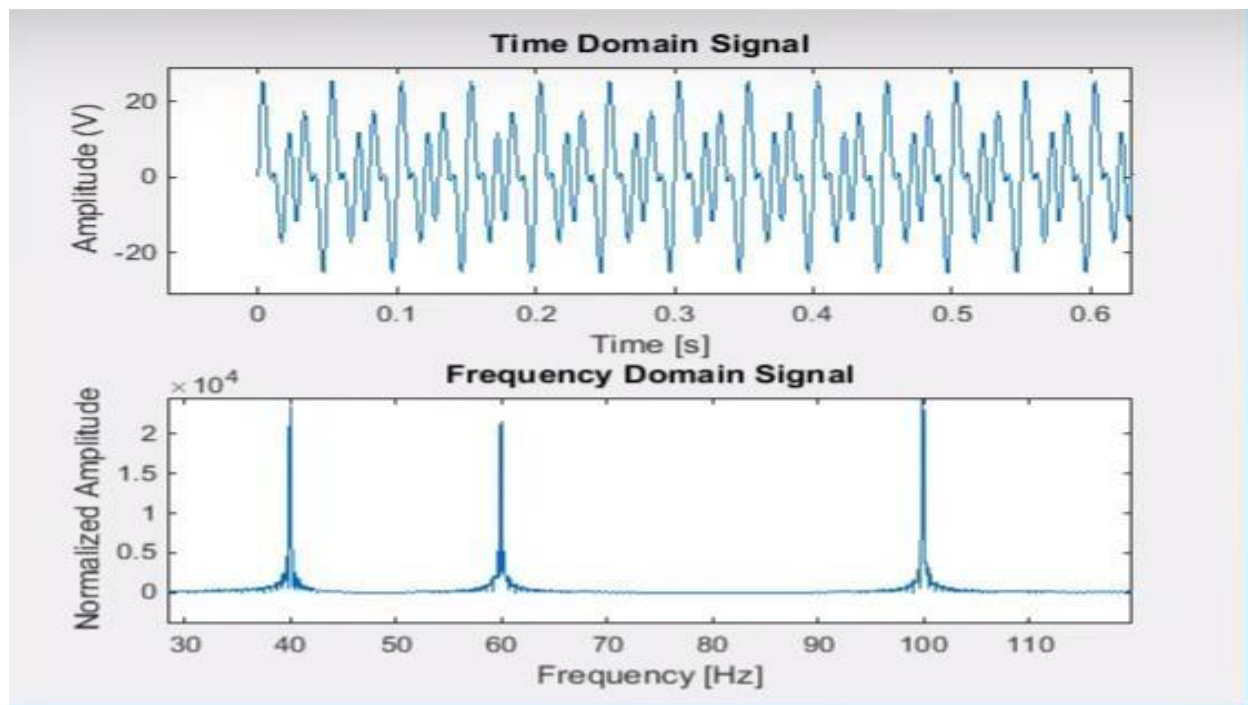
% y=Asin(2pifit+theta);

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:	<ul style="list-style-type: none"> Graphical User Interfaces with Tkinter Interacting with Databases 	Semester & Section:	6 th B

AFTERNOON SESSION DETAILS

Image of session:

The screenshot displays a Udemy video player interface. The video title is "The Python Mega Course: Build 10 Real World Applications". The video content shows a code editor with Python code for interacting with a SQLite database. The code includes functions for creating a table, inserting data, selecting data, and deleting data. The video player interface includes a progress bar, a search bar, and a course content sidebar.

Course content sidebar:

- 178. Selecting, Inserting, Deleting, and Updating PostgreSQL Records (13min)
- 179. Querying data from a MySQL database (1min)
- Section 23: Application 5: Build a Desktop Database Application (0 / 9 | 1hr 32min)
- Section 24: Object Oriented Programming (0 / 8 | 1hr 15min)
- Section 25: Python for Image and Video Processing with OpenCV (0 / 8 | 1hr 2min)
- Section 26: Application 6: Build a Webcam Motion Detector (0 / 3 | 53min)
- Section 27: Interactive Data Visualization with Bokeh (0 / 17 | 58min)
- Section 28: Webscraping with Python (Beautiful Soup)

About this course

A complete Python course for both beginners and intermediates! Master Python 3 by making 10 amazing Python apps.

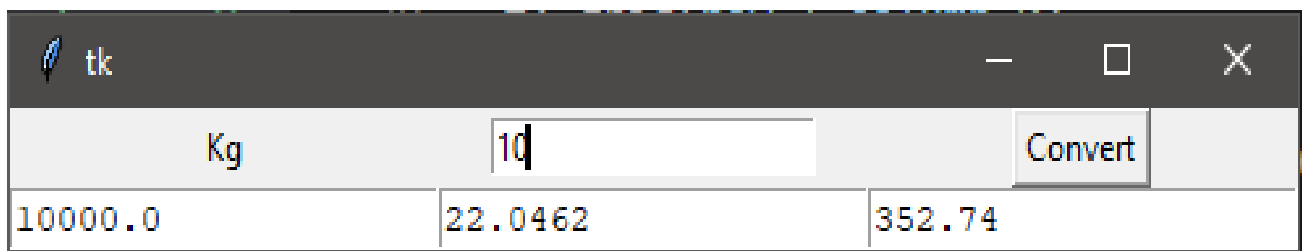
Report – Report can be typed or hand written for up to two pages.

GRAPHICAL USER INTERFACES WITH TKINTER:

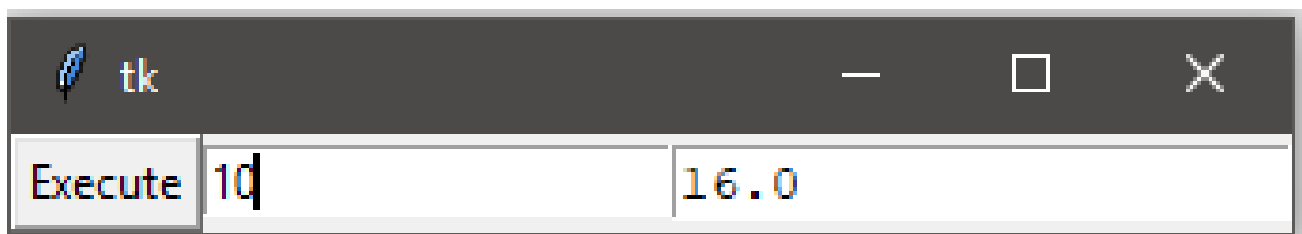
- Python offers multiple options for developing GUI (Graphical User Interface).
- Out of all the GUI methods, tkinter is the most commonly used method.
- It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter is the fastest and easiest way to create the GUI applications.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