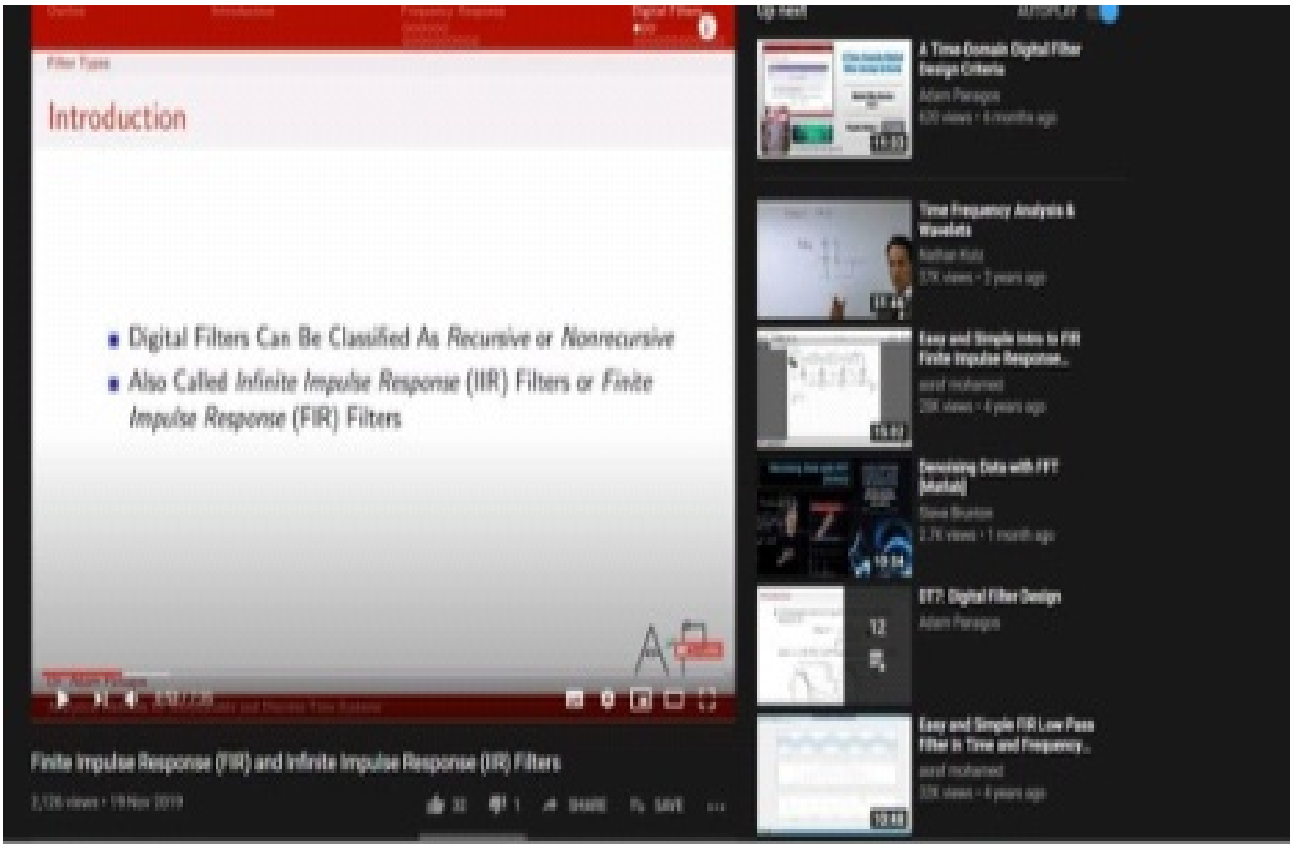
DAILY ASSESSMENT FORMAT

Date:	27-05-2020	Name:	M V Ramya
Course:	DSP	USN:	4AL17EC045
Topic:	Fourier transform	Semester & Section:	6th sem, A sec
Github Repository:	M V Ramya-045		

FORENOON SESSION DET



AILS

27/05/2020

Day:3

Fourier Transform

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

$$f(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} F(s)\, e^{-isx}\, ds$$ called as inverse FT

* Fast Fourier Transform

$$X_p = \sum_{n=0}^{N-1} x_n \cdot W_N^{np} \quad ; \quad W_N = e^{\frac{-j2\pi}{N}}$$

FFT Matlab

```
Fs = 1000;
Ts = 1/Fs;
dt = 0:Ts:5-Ts
f1 = 10;
f2 = 30;
f3 = 70;
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;
nfft = length(y4)
nfft2 = 2 * nextpow2(nfft)
ff = fft(y4, nfft2);
plot (abs(ff));
```

FIR and IIR filters.

FIR - (finite impulse Response)

$$TF,\ H(z) = \frac{b_3 z^3 + b_2 z^2 + b_1 z^1 + b_0}{z^3}$$

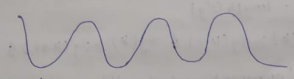
difference equation :-

$$y[k] = -a_2 y[k-1] - a_1 y[k-2] - a_{b_1} y[k-3] + b_3 f[k] + b_2 f[k-1] + b_1 f[k-2] + b_2 f[k-3]$$

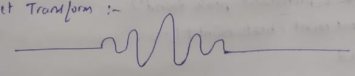
* FIR filters only have poles at the Origin

* Introduction to wr (wavelet)

FT :-



wavelet Transform :-



$$X(a,b) = \int_{-\infty}^{\infty} x(t)\, \psi_{a,b}^{2}(t)\, dt$$

* Short time FT and spectogram

$$Y[n,\lambda] = \sum_{m=-\infty}^{\infty} x[n+m]\, w[m]\, e^{-\lambda m}$$

$n \rightarrow$ Location in time

$\lambda \rightarrow$ Frequency

Inverse STFT :- $$x[n+m] = \frac{1}{N w[m]} \sum_{k=0}^{N-1} X[n,k]\, e^{j\frac{2\pi}{N} km}$$

length increase, bandwidth decrease and impulse response 'duration' increase

```
# EGG signal analyse using matLab
-> save the data in pwd file
-> sig = load ('ecg.txt');
plot (sig)
xlabel ('samples')
ylabel ('electrical activity');
title ('ECG signal')

hold on
plot (sig, 'zo');

-> for k = 1 : length (sig)
    if (sig(k) > sig(k-1) & sig(k) > sig(k+1) & sig(k)>1)
    disp ('prominant peak found')
    beat count = beat_count+1;
    end
end
fs=100;
N = length (sig);
duration_in_seconds = N/fs;
duration_in_minutes =duration_in_seconds/60;
BPM = beat_count / duration_in_minutes.
```

Date:27may2020

Name: MV Ramya

Course: python

USN:4AL17EC045

Topic: python

Semester & Section: 6th sem Asec

AFTERNOON SESSION DETAILS
Image of session

Python 27/04/2020

Graphical User Interface with Tkinter

```
-> From tkinter import *
   window = Tk()

   b1 = Button (window, text = "Execute ")
   b1 . grid (row = 0, column = 0)
   e1 = Entry (window)
   e1 . grid (row = 0, column = 1)
   t1 . text (window, hieght = 1, width = 20)
   t1 . grid (row = 0 , column = 2).

window . mainloop()

-> from tkinter import *
   window = Tk()
   def km_to_miles():
       miles = float (e1_value.get ()) * 1.6
       t1 . Insert (END, miles)
   b1 = Button (window, text = "Execute ", command = km_t
   b1 . grid (row = 0 , column = 0).

   e1_value = stringVar()
   e1 = entry (window , textvariable = e1_value).
   e1 . grid (row = 0 , column = 1)
   t1 = Text (window , hieght = 1 , width = 20)
   e1 = grid (row = 0 , column = 2).

   window . mainloop()
```

Introduction to "Python with Database"

```
import sqlite3
def create_table():
    conn = sqlite3 . connect ("lite.db")
    cur = conn . cursor()
    cur . execute ("CREATE TABLE IF NOT EXISTS STORE
                    (item TEXT , quantity INTEGER , price
                    REAL")

    conn . commit()
    conn . close()

def insert (item , quantity , price)
    conn = sqlite4 . connect ("lite . db")
    cur = conn . cursor()
    cur . execute ("INSERT INTO store VALUES (???)",
                   (item , quality , price) )

    conn . commit()
    conn . close()

insert ("coff cup", 10.5)
def view()
    conn = sqlite3 . connect ("lite . db")
    cur = conn . cursor()
    cur . execute ("SELECT * from store")
    rows = cur . fetch()
    conn . close()
    return rows
print (view()).
```