Daily Assessment format

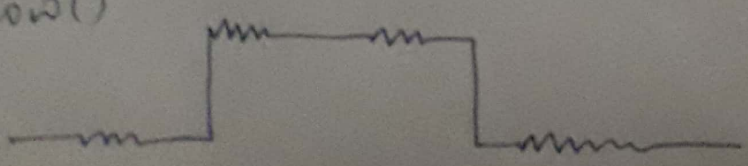
Date: 26/06/2020
Name: Jyoti S Donur
USN: 4AL17EC037
Course: Digital signal processing
Topic: fourier series & gibbs phenamena, fourier transform derivatives & convolution, implementation of laplace transform & z-transform using matlab
Github repository: jyoti-courses

forenoon session details

fourier series & gibb's phenomena

```
import numpy as np
import mat.plotlib.pyplot as plt
plt.rcparams['figure.figsize'] = [8,8]
plt.rcparams.update({'font.size':18})
dx=0.01
L=2*np.pi
x=np.arrange(0,L+dx,dx)
n=len(x)
nquart=int(np.floor(n/4))
f=np.zeros_like(x)
f[nquart:3*nquart]=1
A0=np.sum(f*np.ones_like(x)*dx*2/L
fFs= A0/2*np.ones_like(f)
for k in range(1,101);
   Ak=np.sum(f*np.cos(2*np.pi*k*x/L)*dx*2/L
   Bk=np.sum(f*np.sin(2*np.pi*k*x/L)*dx*2/L
fFs=fFs+Ak+np.cos(2*k*np.pi*x/L)+Bk*np.sin(2*k*np
          .pi*x/L)
plt.plot(x,f,color='k',linewidth=2)
plt.plot(x,fFs,'-',color='r',linewidth=1.5)
plt.show()
```

o/p



Fourier transform derivatives

$$f(w) = F(f(x)) = \int_{-\infty}^{\infty} f(x) e^{-jwx} dx$$

$$f(x) = F^{-1}(f(w)) = \frac{1}{2\pi} \int_{-\infty}^{\infty} f(w) e^{jwx} dw$$

$$F\left(\frac{d}{dx} f(x)\right) = \int_{-\infty}^{\infty} \frac{d}{dx} f e^{-jwx} dx$$

$$= jw \int_{-\infty}^{\infty} f e^{-jwx} dx = \frac{jw F(f(x))}{F\left(\frac{d^1}{dx}\right)}$$

- $F(f * g) = F(f) F(g) = \hat{f}\hat{g}$

$$F^{-1}(\hat{f}\hat{g})(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} \hat{f}(w) \hat{g}(w) e^{jwx} dw$$

$$= \int_{-\infty}^{\infty} g(y) f(x-y) dy$$

$$= f * g$$

- $F(w) = \int_{-\infty}^{\infty} f(t) e^{-jwt} dt$

$$F(w) = \int_{-\infty}^{\infty} f(t) \cos(wt) dt - i \int_{-\infty}^{\infty} f(t) \sin(wt) dt$$

- Z-transforms in matlab

```
syms n w0;
% signal
a = n+1;
disp('the input equation is');
disp(a);
% taking z-transform
b = ztrans(a)
```

o/p
```
a = n
b = ztrans(a)
b = z
    ---
    z-1
```

```
a = sin(w0*n)
b = ztrans(a)
disp(b)
```

$$\frac{z \sin(w)}{z^2 - 2\cos(w) z + 1}$$

Date: 26/05/2020
Course: python
Topic: Application 4: build a personal website with python & flask

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Github Repository : jyoti-courses

Afternoon session detail

Report
Application 4: Build a personal website with python and flask

→ building first website:
first create a python file & then write the code in that file

```
from flask import flask
app = flask(__name)
@app.route('/')
def home():
    return render_template("home.html")

@app.route('/about/')
def about():
    return render_template("about.html")

if __name__ == "__main"
    app.run(debug.true)
```

```
<!DOCTYPE html>
<html>
 <body>
  <header>
   <div class="container">
   <h1 class = "logo">Aditi's webpage</h>
   <strong> <nav>
   <ul class = "menu">
```

```
    <li><a href="{% url_for('home') %}">Home</li>
<li><a href="{{ url_for('about') }}">about</a></li>
</ul>
</nav></strong>
</div>
</header>
<div class="container">
    {% block content %}
    {% endblock %}
    </div>
    </body>
    </html>
```