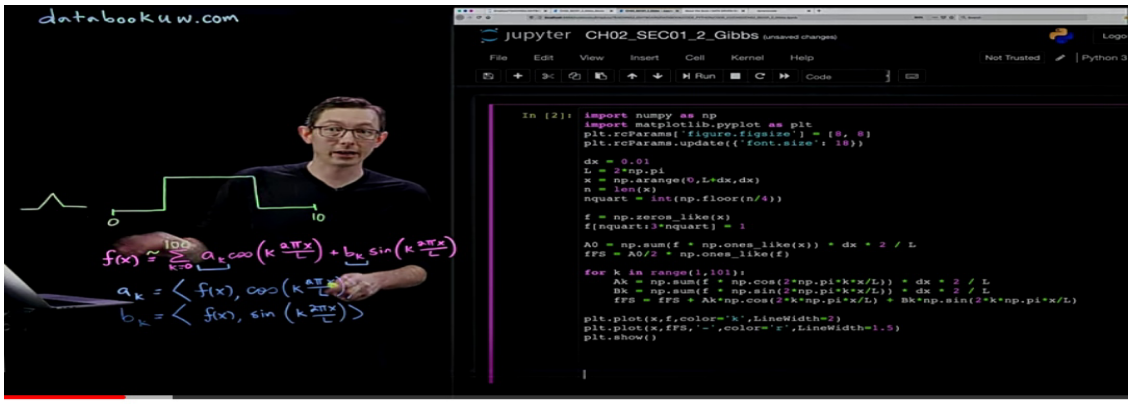
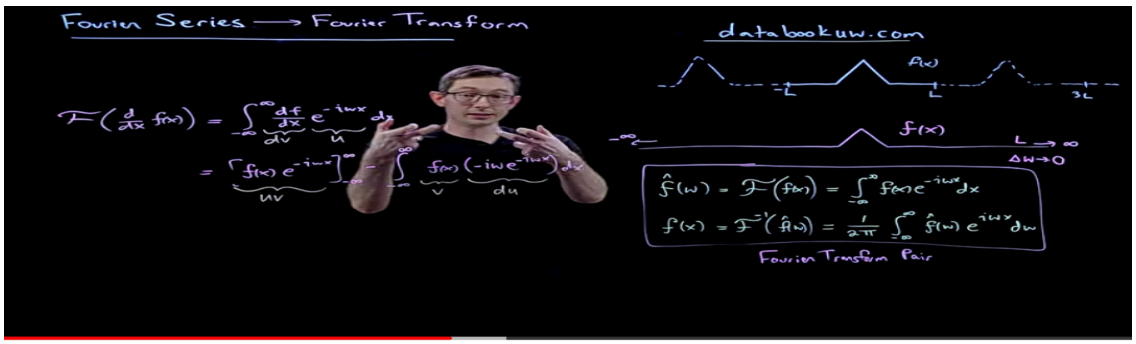
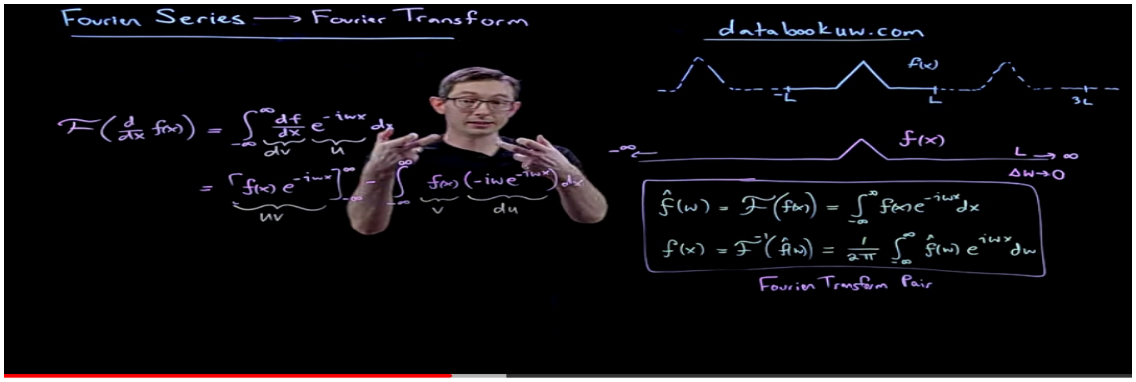
Date:	**26-05-2020**	**Name:**	**Rajeshwari Gadagi**
Course:	**DSP**	**USN:**	**4AL17EC076**
Topic:	Fourier Series & Gibbs,Fourier Transform,Fourier Transform Derivatives,Fourier Transform and Convolution,Intuition of Fourier Transform and Laplace Transform,Laplace Transform of First order,Implementation of Laplace Transform using Matlab,Applications of Z-Transform,Find the Z-Transform of sequence using Matlab	**Semester and section:**	**6th sem and B sec**



Fourier Series and Gibbs Phenomena [Python]



The Fourier Transform and Derivatives



The Fourier Transform and Derivatives

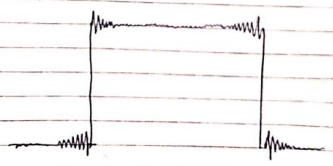
STUDENT'S NAME | TOTAL MARKS OBTAINED
CLASS | SUBJECT
ROLL NO. | DATE

Day2

Fourier Series and Gibbs Phenomena:

```
import numpy as np
import matplotlib.pyplot as plt
plt.rcParams['figure.figsize'] = [8, 8]
plt.rcParams.update({'font.size': 18})

dx = 0.01
L = 2*np.pi
x = np.arange(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:-

$$\hat{f}(\omega) = F(f(x)) = \int_{-\infty}^{\infty} f(x) e^{-j\omega x} dx$$

$$f(x) = F^{-1}(\hat{f}(\omega)) = \frac{1}{2\pi} \int_{-\infty}^{\infty} \hat{f}(\omega) e^{j\omega x} d\omega$$

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

$$= j\omega \int_{-\infty}^{\infty} f e^{-j\omega x} dx = \frac{j\omega F(f(x))}{F\left(\frac{df}{dx}\right)}$$

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

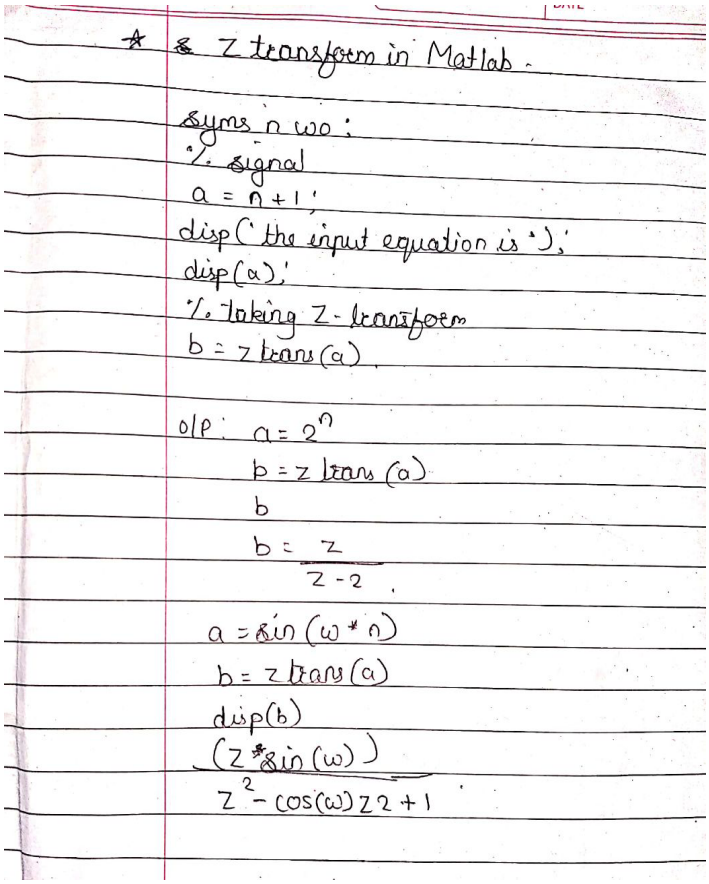
$$F^{-1}(\hat{f}\hat{g})(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} \hat{f}(\omega)\hat{g}(\omega) e^{j\omega x} d\omega$$

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

$$= f * g$$

★ $F(\omega) = \int_{-\infty}^{\infty} f(t) e^{-j\omega t} dt$

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



Date:	**26-05-2020**	**Name:**	**Rajeshwari Gadagi**
Course:	**Python programming**	**USN;**	**4AL17EC076**
Topic:	**Building a website**	**Semester and section**	**6th sem and B sec**

ROLL NO. DATE

Day 7

Application 4 : Build a Personal Website with Python and Flask

→ Building first Website

- First create a python file and then write the code in that file.

```
from flask import Flask
app = Flask (__name__)
@app.route ('/')
def home():
    return "website content goes here!"
if __name__ == "__main__":
    app.run(debug.true)
```

→

```
from flask import Flask, render_template
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">Ardit's web page</h1>
                <strong><nav>
                    <ul class = "menu">
                        <li><a href = "{{ url_for('home') }}">Home</
                                                                    </l
                    <li><a href = "{{ url_for('about') }}">about</a>
                </ul>
            </nav></strong>
            </div>
            </header>
            <div class = "container">
                {% block content %}
                {% endblock %}
            </div>
            </body>
    </html>
```