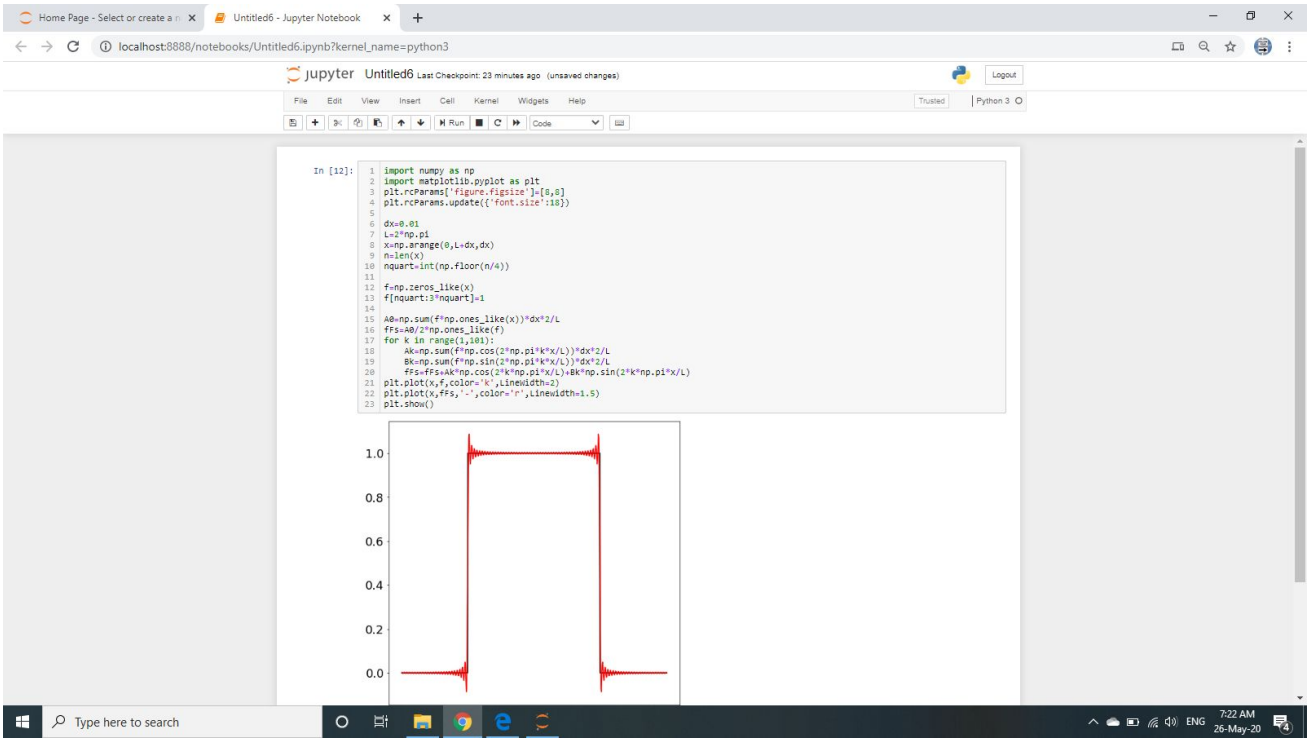
REPORT MAY 26

Date:	**26 MAY 2020**	**Name:**	**Rakshith B**
Course:	**Digital Signal Processing**	**USN:**	**4AL16EC409**
Topic:	**Fourier Series and Gibbs Phenomenon using Python, Laplace transform using Matlab,Z Transform Using Matlab.**	**Semester & Section:**	**6th SEM B**
Github Repository:	**Rakshith-B**		

FORENOON SESSION DETAILS

Image of session



Report –

Fourier Series and Fourier Transform

Fourier Series

$$f(x) = \frac{1}{2}a_0 + \sum_{-\infty}^{\infty}(a_k cos2kt + b_k sin2kt)$$

Fourier Transform

$$X(F) = \int_{-\infty}^{\infty} x(t)e^{-j2Ft}dt$$

Fourier Series and Gibbs Phenomana Using Python

```
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()
```

Laplace Transform [Matlab]

```
clear all;
close all;
syms L f t;
f=(exp(-3*t)*sin(2*t))/t
L=laplace(f)
```

Inverse Laplace Transform

```
clear all;
close all;

syms F,s,x;
F=(s+29)/(s^3+4*s^2+9*s+36)
ilaplace(F,x)
```

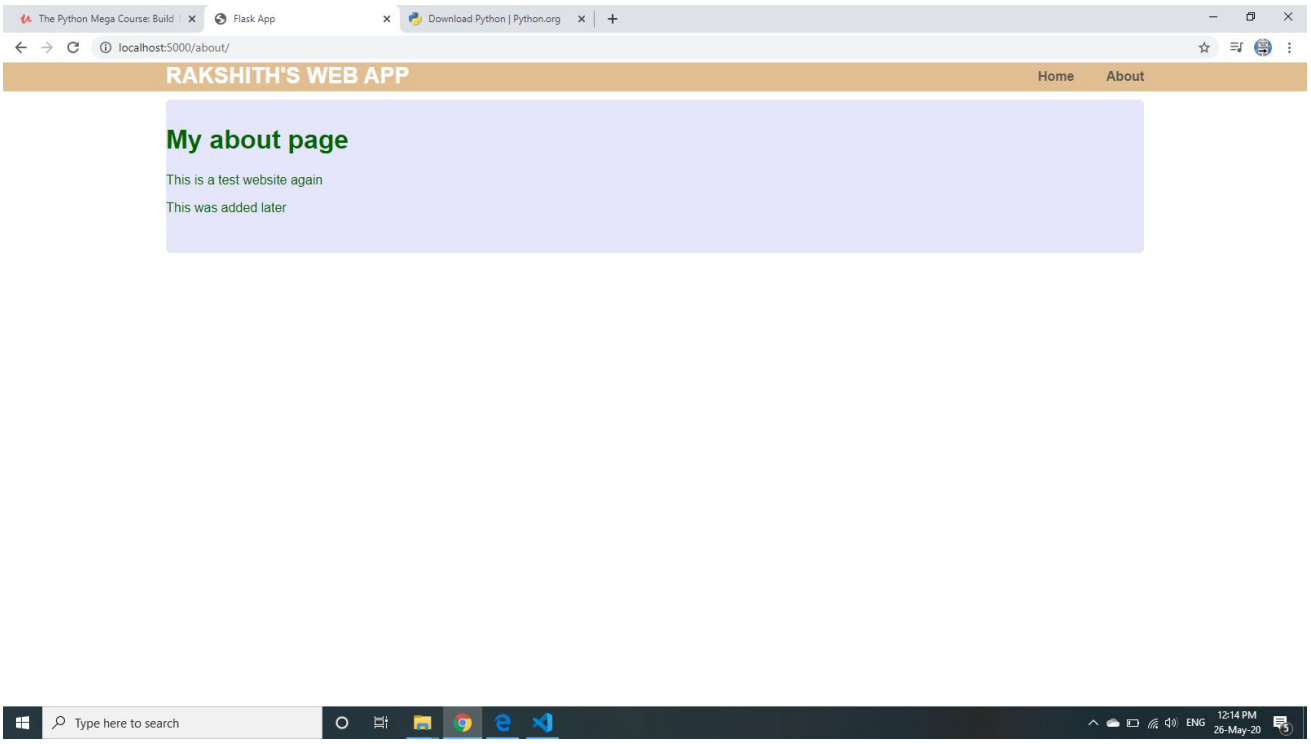
Z Transform Using Matlab

```
clear all;
close all;
syms n,w;
a=sin(w*n)
b=ztrans(a)
disp(b)
(z*sin(w))/(z^2 -2*cos(w)*z+1)
pretty(b)
```

Date:	**26 MAY 2020**	**Name:RAKSHITH B**
Course:	**PYTHON On Udemy**	**USN:4AL16EC409**
Topic:	**Personal Website with Python and Flask**	**Semester & Section:6 B**

AFTERNOON SESSION DETAILS

Image of session



Report –

script1.py

```
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)
```

home.html

```
{% extends "layout.html" %}
{% block content %}
<div class="home">
    <h1>My homepage</h1>
    <p>This is a test website</p>
</div>
{% endblock %}
```

about.html

```
{% extends "layout.html" %}
{% block content %}
<div class="about">
    <h1>My about page</h1>
    <p>This is a test website again</p>
    <p>This was added later</p>
</div>
{% endblock %}
```

layout.html

```
<!DOCTYPE html>
<html>
  <head>
```

```
      <title>Flask App</title>
      <link rel="stylesheet"
href="{{url_for('static',filename='css/main.css')}}">
  </head>
  <body>
    <header>
      <div class="container">
        <h1 class="logo">Rakshith's web app</h1>
        <strong><nav>
          <ul class="menu">
            <li><a href="{{ url_for('home') }}">Home</a></li>
            <li><a href="{{ url_for('about') }}">About</a></li>
          </ul>
        </nav></strong>
      </div>
    </header>
    <div class="container">
        {%block content%}
        {%endblock%}
    </div>
  </body>
</html>
```