

# DAILY ASSESSMENT FORMAT

Date:	19/05/2020	Name:	Nichenametla Bhargavi
Course:	TCS-ION CAREER EDGE	USN:	4AL17EC061
Topic:	Gain Guidance from Career Gurus Write a Winning Resume and Cover Letter. Stay Ahead in Group Discussions	Semester & Section:	6th Sem A sec
Github Repository:	alvas-education-foundation/Bhargavi_Nichenametla		

## FORENOON SESSION DETAILS

Image of session

```
In [2]: 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()
```

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

Fourier Series → Fourier Transform

$$f(x) = \sum_{k=-\infty}^{\infty} C_k e^{ik\pi x/L}$$

$$C_k = \frac{1}{2\pi} \int_{-L}^L f(x) e^{-ik\pi x/L} dx \quad \omega_k = k\pi \frac{1}{L}$$

$$f(x) = \lim_{\Delta\omega \rightarrow 0} \sum_{k=-\infty}^{\infty} \frac{\Delta\omega}{2\pi} \int_{-\pi/\Delta\omega}^{\pi/\Delta\omega} f(\xi) e^{-ik\omega_k \xi} d\xi e^{ik\omega_k x}$$

$$= \int_{-\infty}^{\infty} \frac{1}{2\pi} \int_{-\infty}^{\infty} f(\xi) e^{-i\omega_k \xi} d\xi e^{i\omega_k x} d\omega_k$$

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

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

\* Fourier transform is useful for solving partial derivatives

Derivatives:

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

$$= \left[ f(x) e^{-i\omega x} \right]_{-\infty}^{\infty} - \int_{-\infty}^{\infty} f(x) \left( -i\omega e^{-i\omega x} \right) dx$$

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

$$\mathcal{F}\left(\frac{d^2}{dx^2} f(x)\right) = -\omega^2 \mathcal{F}(f(x))$$

$$u_{tt} = c u_{xx} \xrightarrow{\text{(PDE)}} \hat{u}_{tt} = -\omega^2 \hat{u} \quad \text{(ODE)}$$

$$u(x,t) \xrightarrow{\text{FT}} \hat{u}(\omega,t)$$

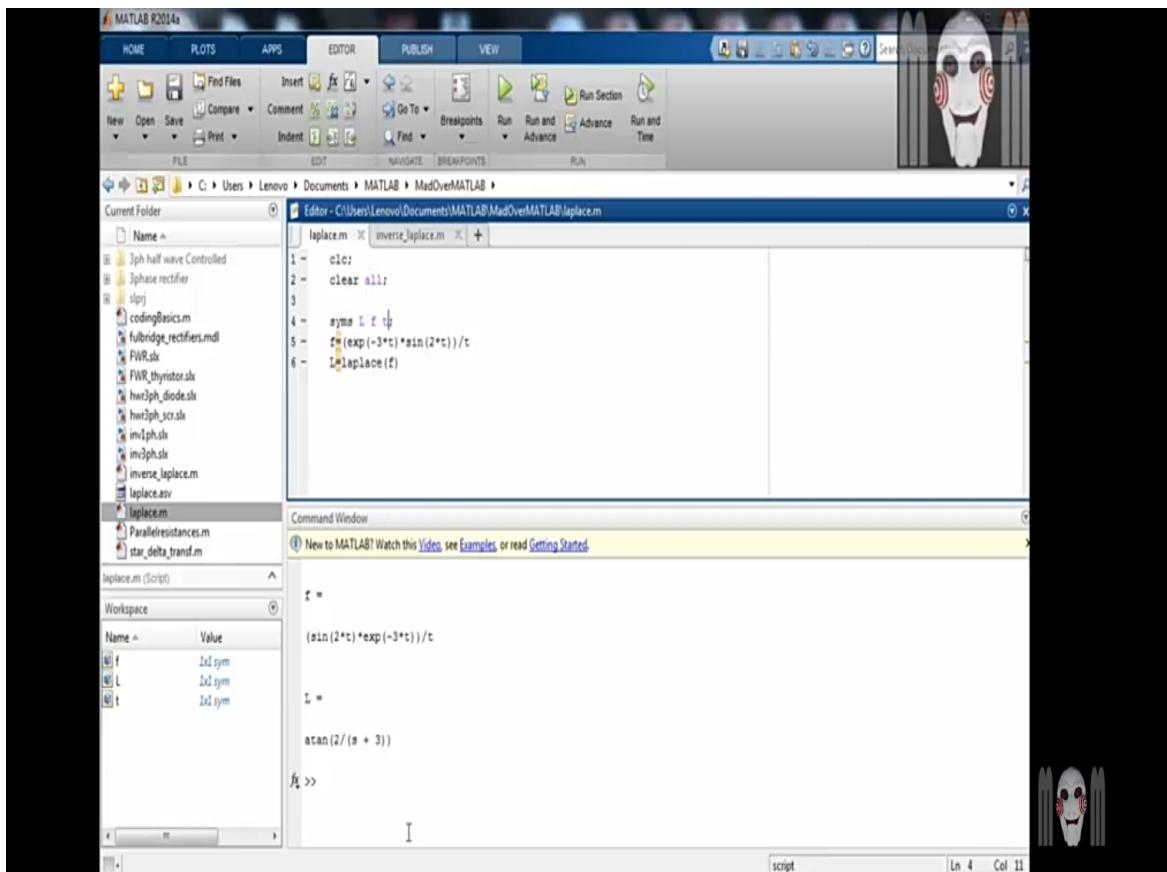
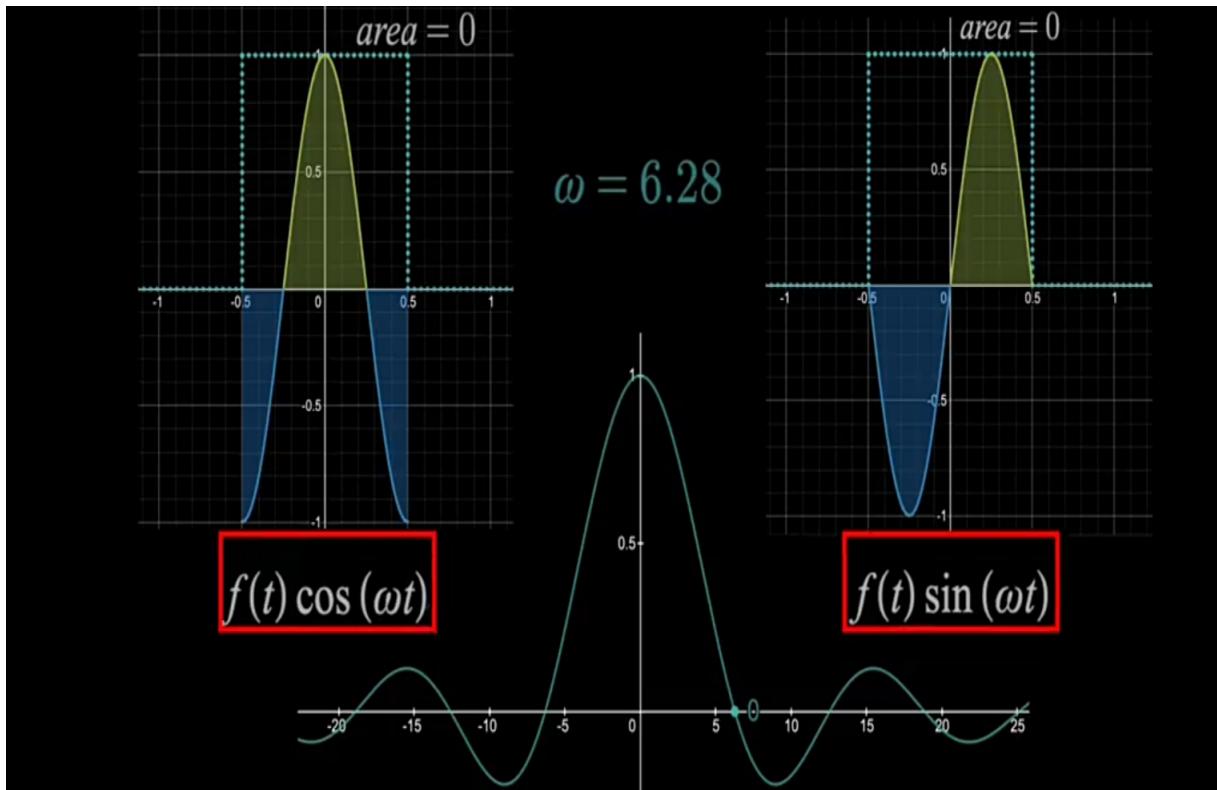
Convolution:

$$(f * g)(x) = \int_{-\infty}^{\infty} f(x-k) g(k) dk$$

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

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

$$= \frac{1}{2\pi} \int_{-\infty}^{\infty} \hat{f}(\omega) \left( \int_{-\infty}^{\infty} g(y) e^{-i\omega y} dy \right) e^{i\omega x} d\omega$$



Date:	26/05/2020	Name:	Nichenametla Bhargavi
Course:	Python	USN:	4AL17EC061
Topic:	Application 2: Create webmaps with python and Folium	Semester & Section:	6th Sem A sec

## AFTERNOON SESSION DETAILS

## Image of session

The screenshot shows a Python code editor with a dark theme. The file being edited is `map1.py`, which contains the following code:

```
1 import folium
2 map = folium.Map(location=[38.58, -99.09], zoom_start=6, tiles="Mapbox Bright")
3
4 fg = folium.FeatureGroup(name="My Map")
5
6 for coordinates in [[38.2, -99.1],[39.2, -97.1]]:
7     fg.add_child(folium.Marker(location=coordinates, popup="Hi I am a Marker", icon=folium.Icon(color='green')))
8
9 map.add_child(fg)
10
11 map.save("Map1.html")
```

Below the code editor, there is a terminal window showing the command `Ardis-MBP:mapping mia$ python3 map1.py` entered and run multiple times.

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



map Atom

```
pip install folium  
pip3 install folium  
import folium  
map = folium.Map(location=[38.58, -99.09], zoom_start=6)  
map.add_child(folium.Marker([38.58, -99.09],  
                           popup="Hi I am a Marker",  
                           icon=folium.Icon(color='green')))  
map.save("Map1.html")
```

\* If one or more than use for loop  
for coordinates in [(38.2, -99.1), (38.5, -98.1)]

