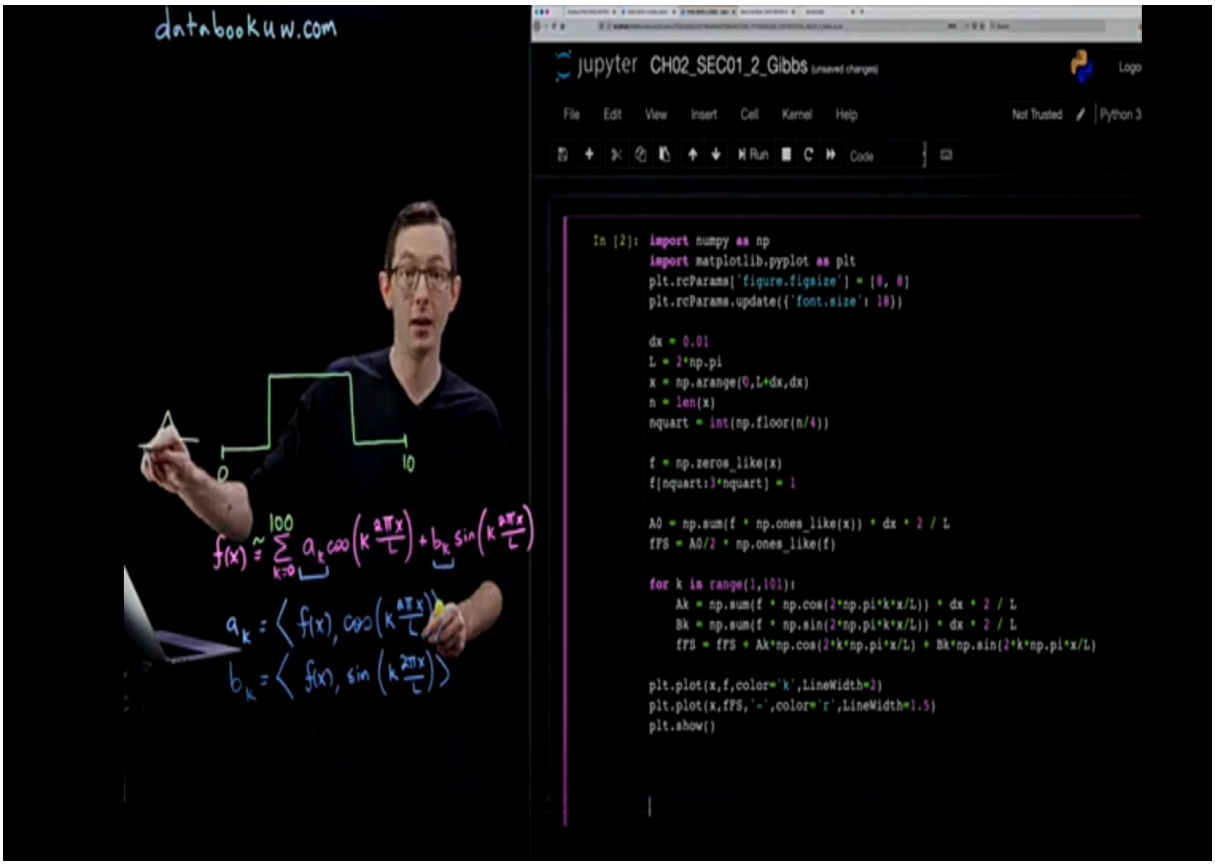
DAILY ASSESSMENT FORMAT

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



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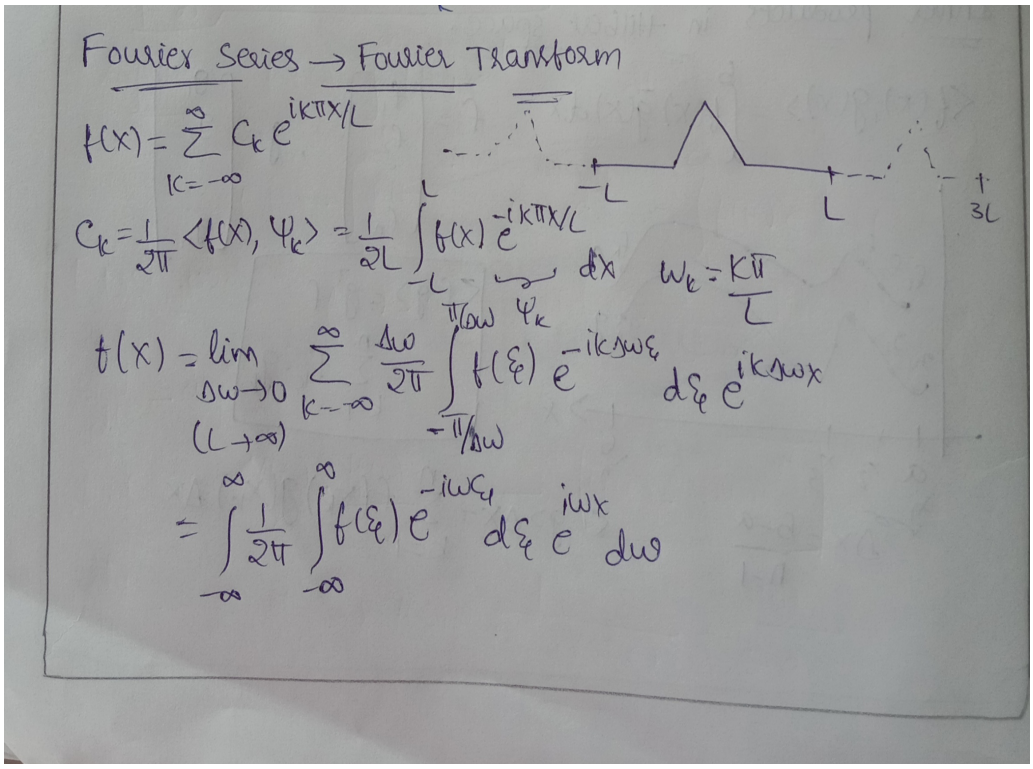


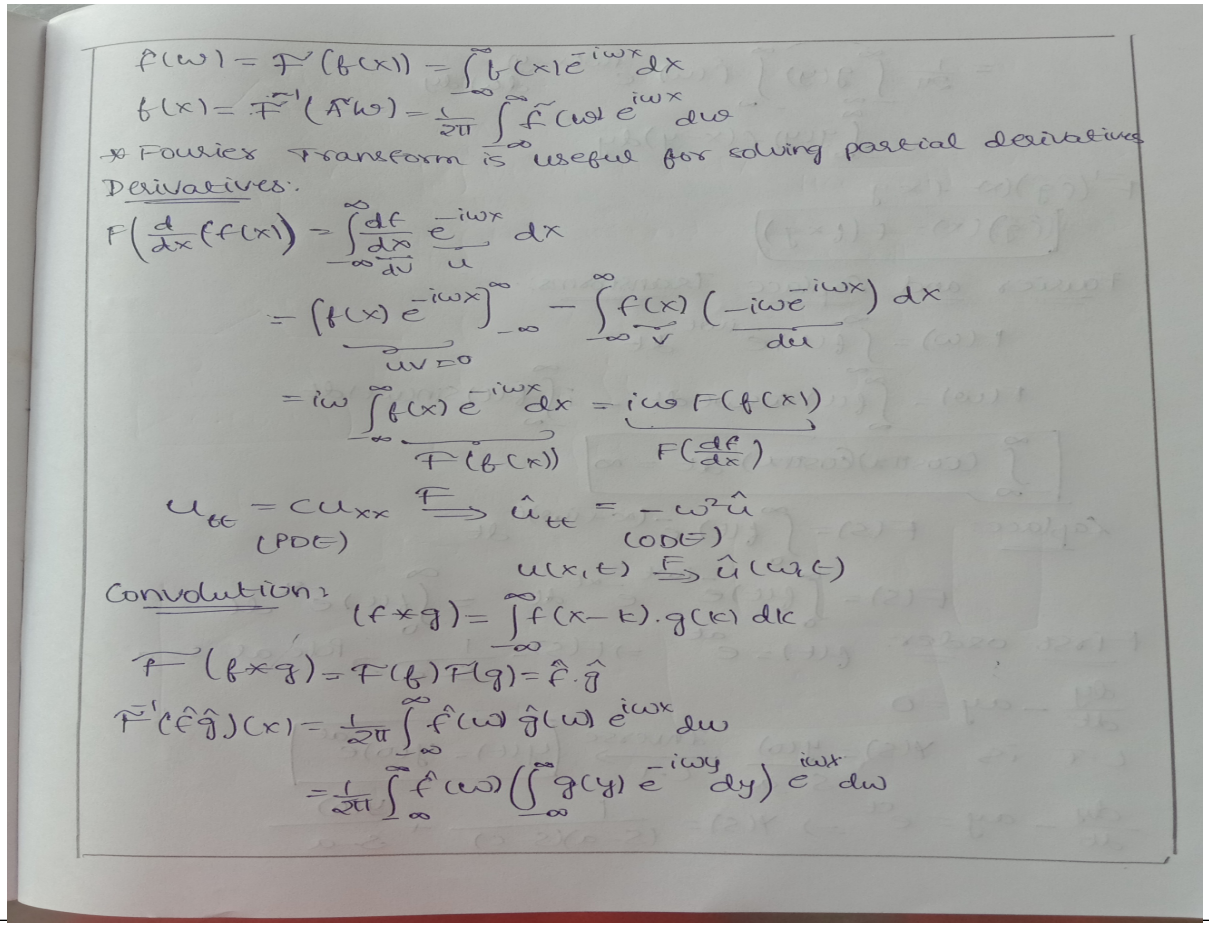
Fourier Series → Fourier Transform

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

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

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

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



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

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

* Fourier Transform is useful for solving partial derivatives

Derivatives:

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

$$= \underbrace{\left[f(x) e^{-i\omega x}\right]_{-\infty}^{\infty}}_{uv=0} - \int_{-\infty}^{\infty} \underbrace{f(x)}_{v} \underbrace{\left(-i\omega e^{-i\omega x}\right)}_{du} dx$$

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

$$u_{tt} = c u_{xx} \xrightarrow{\mathcal{F}} \hat{u}_{tt} = -\omega^2 \hat{u}$$

(PDE) (ODE)

$$u(x,t) \xrightarrow{\mathcal{F}} \hat{u}(\omega, t)$$

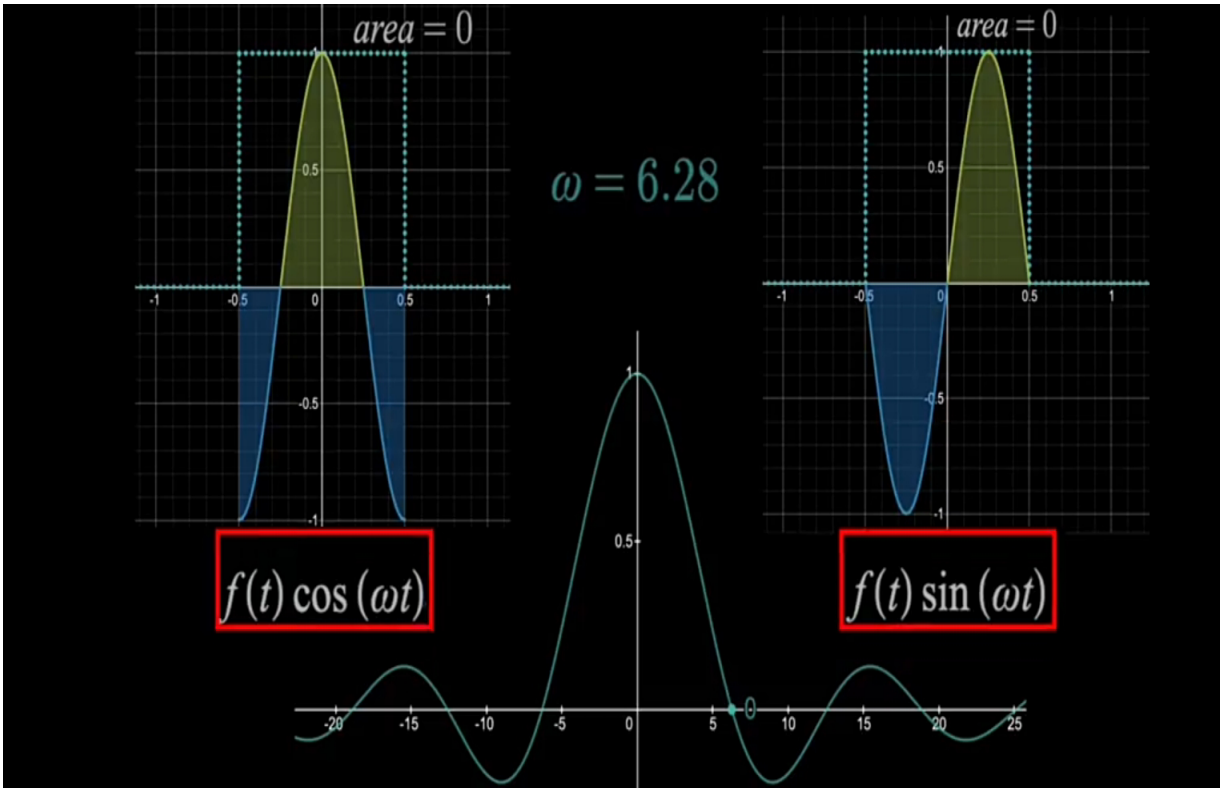
Convolution:

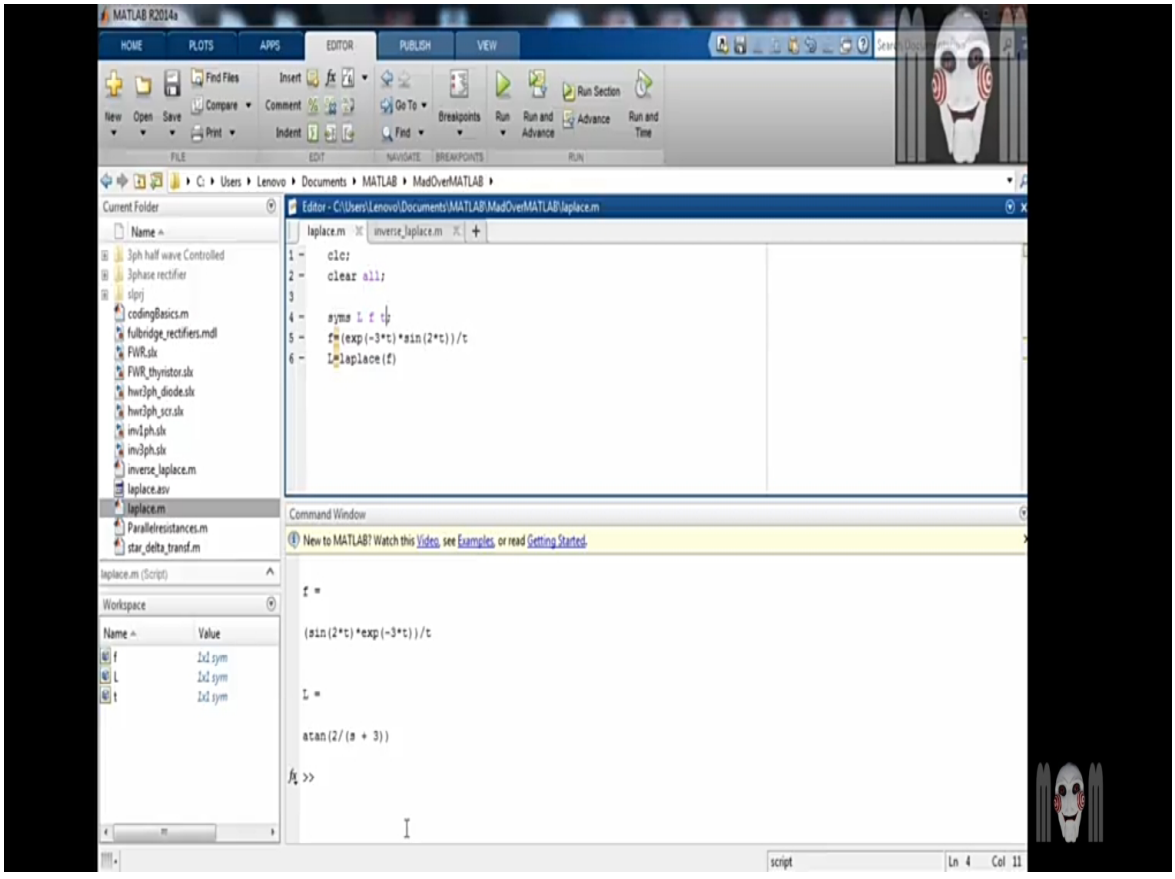
$$(f * g) = \int_{-\infty}^{\infty} f(x-k) \cdot g(k) \, dk$$

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

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

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


area = 0
area = 0
ω = 6.28
f(t) cos (ωt)
f(t) sin (ωt)


MATLAB R2014a
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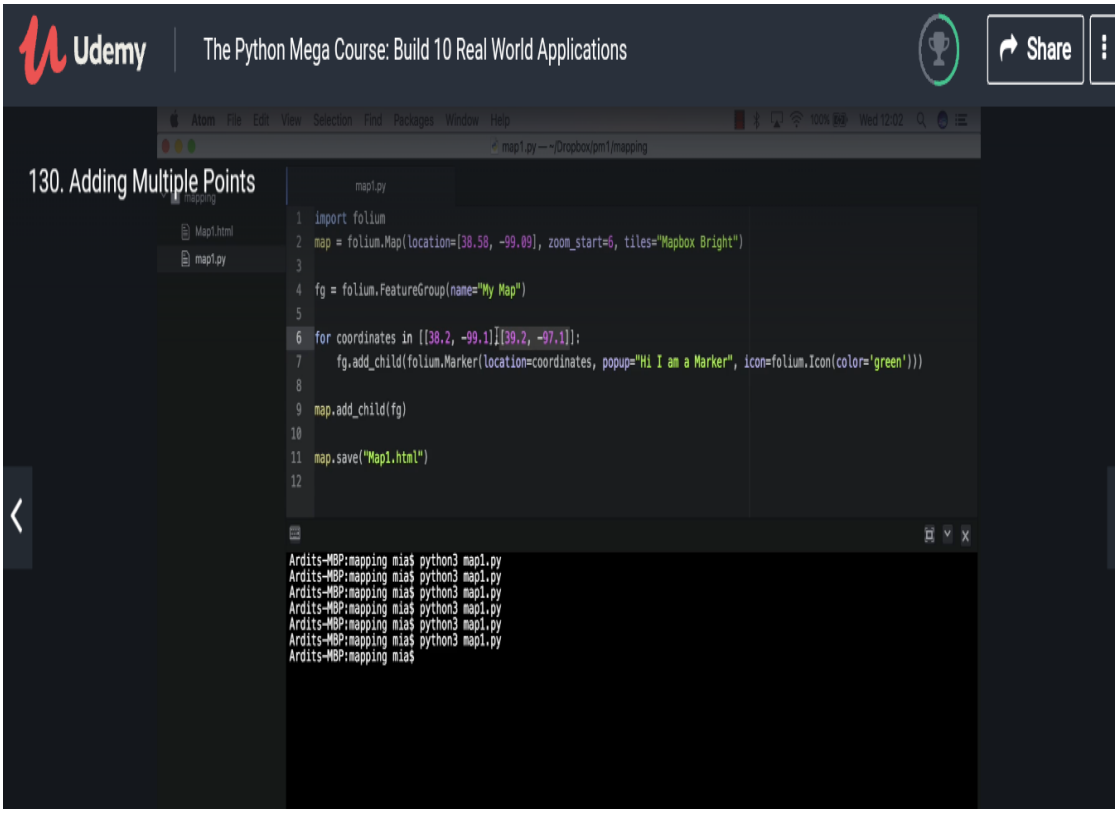
Editor - C:\Users\Lenovo\Documents\MATLAB\MadOverMATLAB\laplace.m
laplace.m
inverse_laplace.m
clc;
clear all;
syms L f t
f=(exp(-3*t)*sin(2*t))/t
L=laplace(f)
Command Window
New to MATLAB? Watch this Video, see Examples, or read Getting Started.
f =
(sin(2*t)*exp(-3*t))/t
L =
atan(2/(s + 3))
>>
Workspace
Name
Value
script
Ln 4
Col 11

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



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