



# METHODIST COLLEGE OF ENGINEERING AND TECHNOLOGY

Approved by AICTE New Delhi | Affiliated to Osmania University, Hyderabad

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## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

### USAGE OF ICT TOOLS

**NAME OF FACULTY: Dr. JOHN WILLIAM CAREY MEDITHE**

**SUBJECT: Data Science Using R Programming**

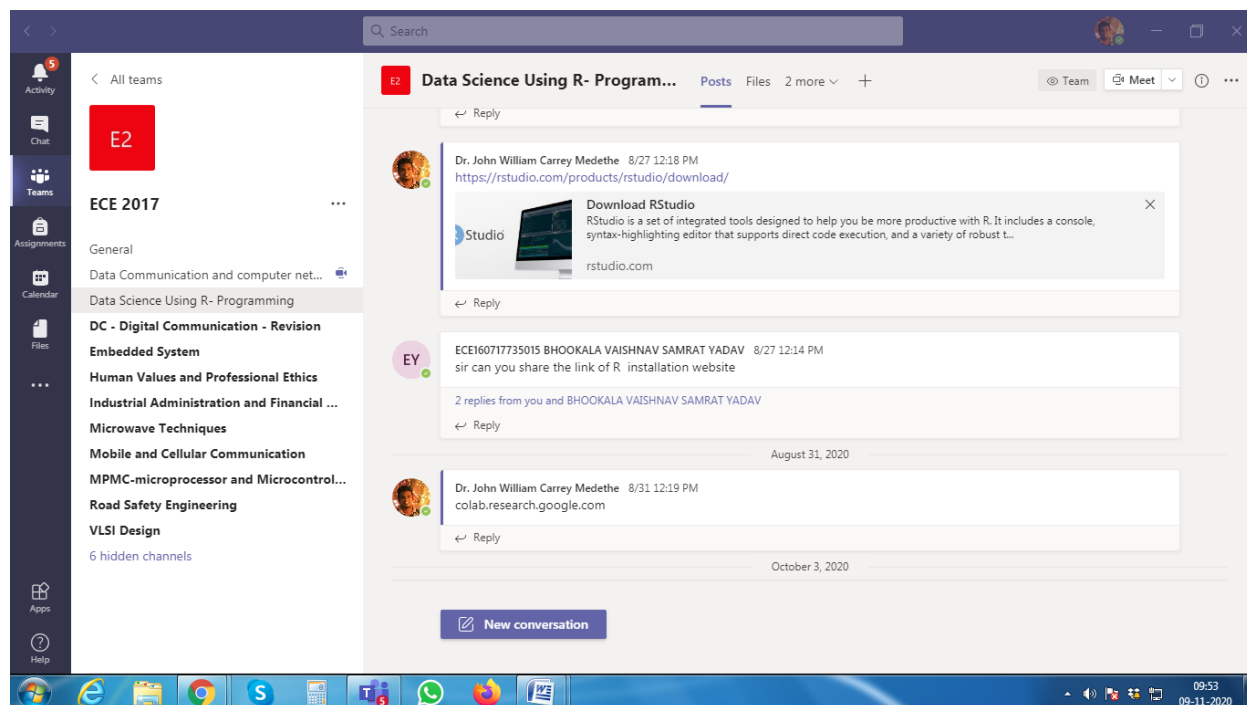
**YEAR AND SEM : IV YEAR- II SEM ACADEMIC YEAR: 2020-2021**

Microsoft Teams is used as a platform to share the innovative teaching methods to the students

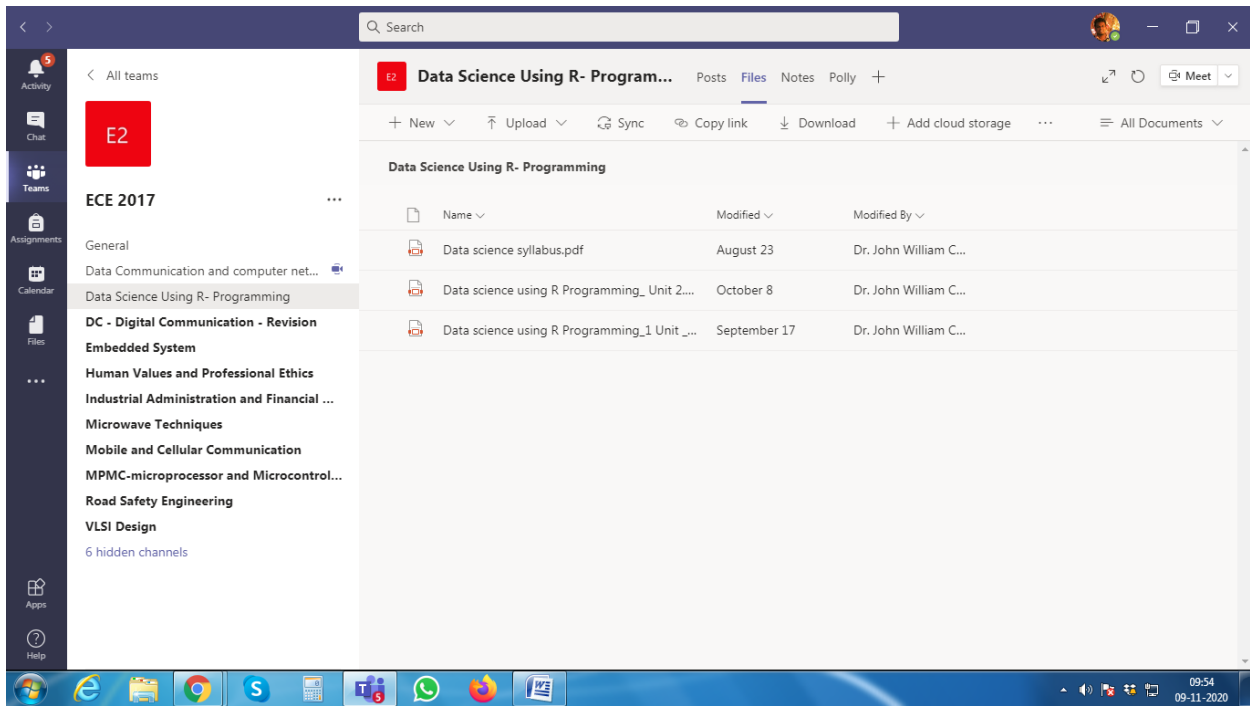
Live chat enabled in MS Teams to raise the issue among the subject group where faculty and other can answer and share material

Raise your Hand option makes student to notify teaching faculty or presenter to express their doubts in the class

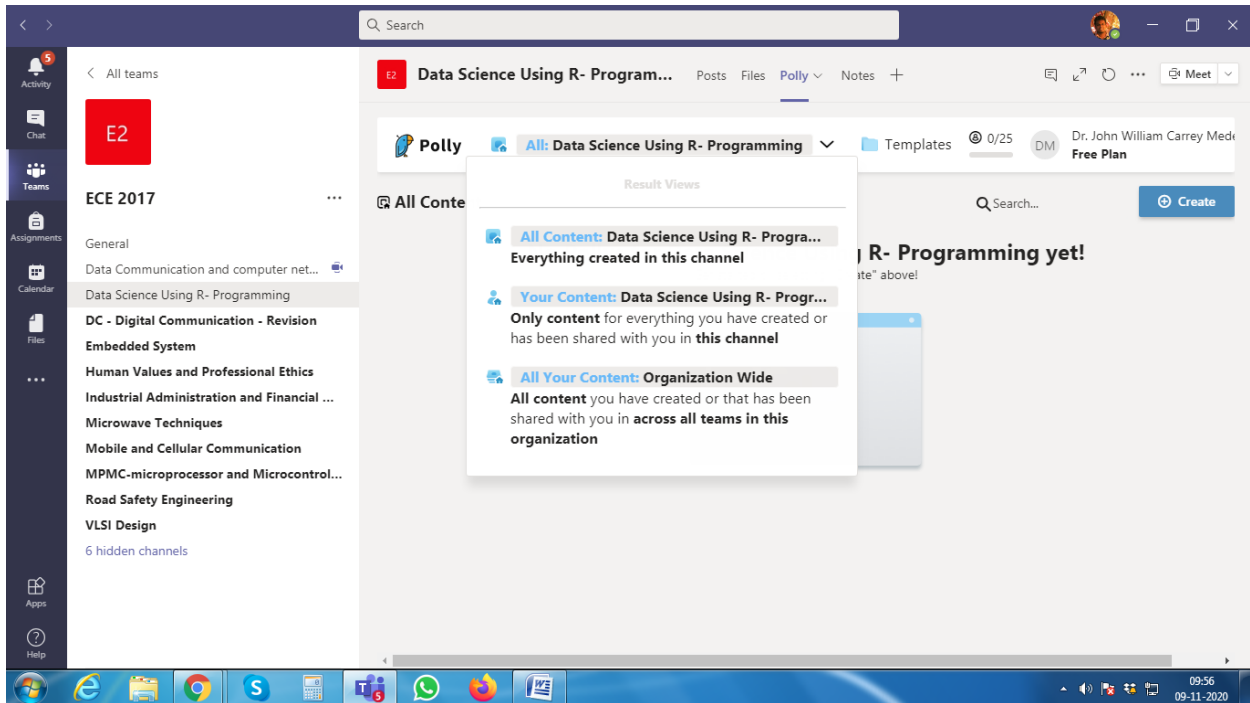
Polly is an additional plug-in used to track the student alertness and attendance



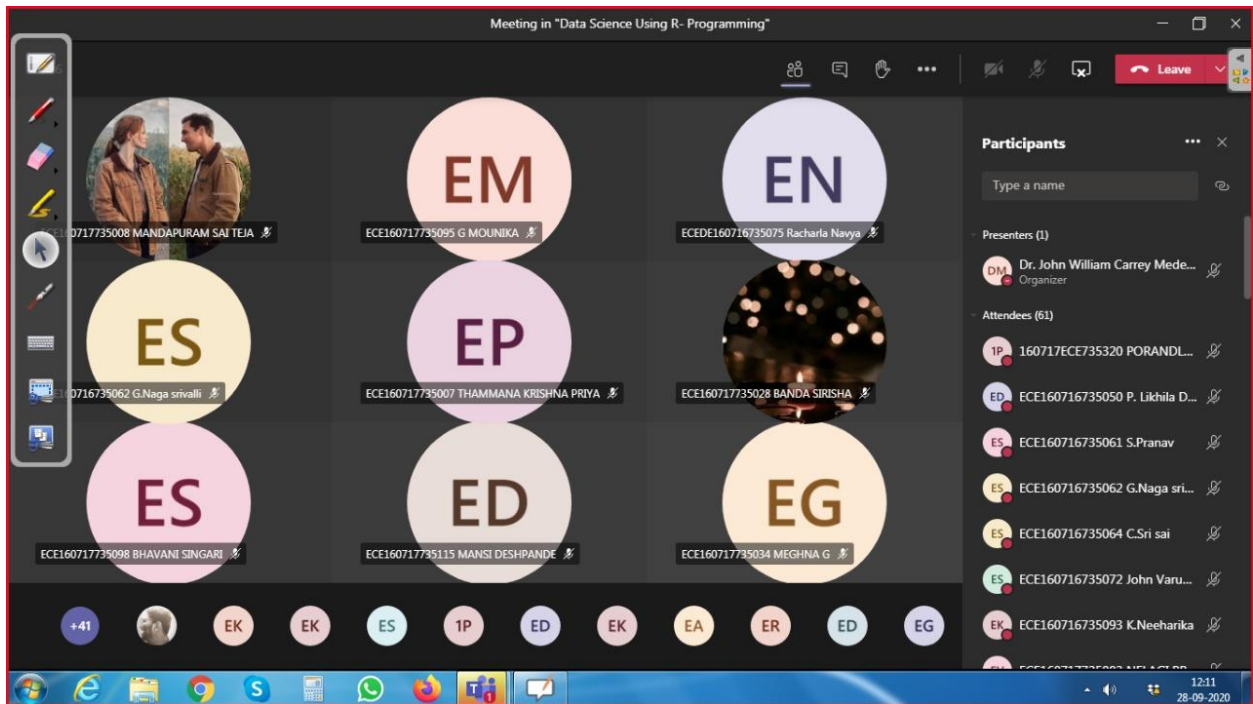
Notes uploaded into the files section of the subject section



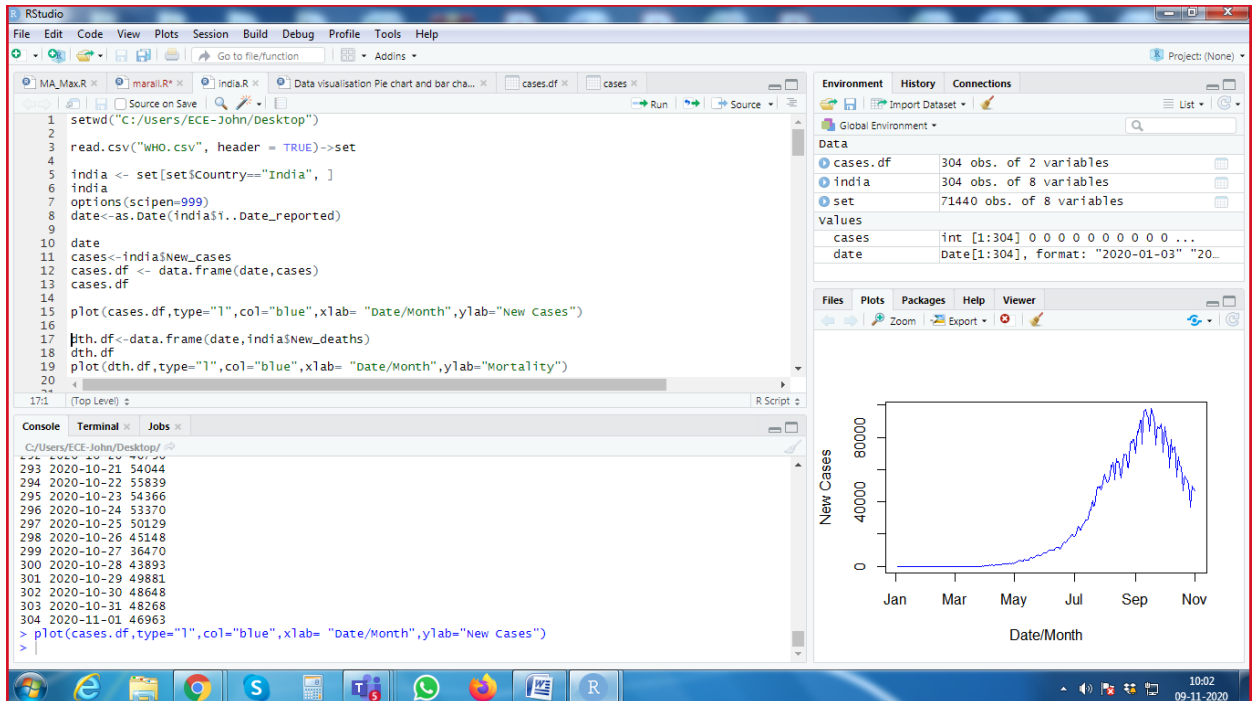
## Creating polls

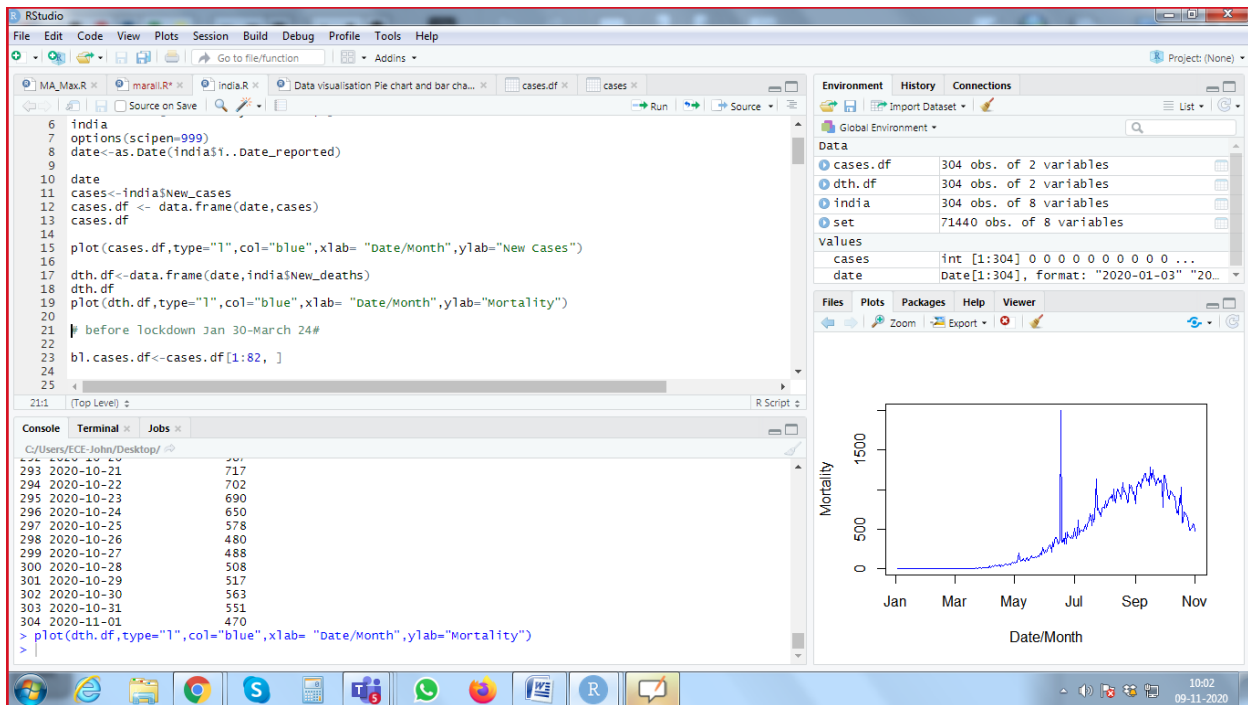


## Student's attending virtual class



Sharing R studio Screen for execution and simulating R Programs





Open Board is multi-resource and innovative presentation tool for creative teaching

The screenshot shows the OpenBoard presentation tool interface. The slide content is as follows:

## Data Science Using R Programming

### Difference between R and Python

Parameter	R	Python
Objective	Data analysis and statistics	Deployment and production
Primary Users	Scholar and R&D	Programmers and developers
Flexibility	Easy to use available library	Easy to construct new models from scratch. I.e., matrix computation and optimization
Learning curve	Difficult at the beginning	Linear and smooth
Popularity of Programming Language. Percentage change	4.23% in 2018	21.69% in 2018
Integration	Run locally	Well-integrated with app
Task	Easy to get primary results	Good to deploy algorithm
Database size	Handle huge size	Handle huge size
IDE	Rstudio	Spyder, Ipython Notebook
Important Packages and library	tidyverse, ggplot2, caret, zoo	pandas, scipy, scikit-learn, TensorFlow, caret
Disadvantages	Slow High Learning curve Dependencies between library	Not as many libraries as R

18-Aug-20 Dr. John William Carey Medithe 5

How to find nullity of any matrix??

$A \cdot b = 0$

$$A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 4 & 0 \\ 3 & 6 & 0 \end{bmatrix}$$

$$b = \begin{bmatrix} b_1 \\ b_2 \\ b_3 \end{bmatrix}$$

eq:1  $b_1 + 2b_2 + b_3 = 0$   
 eq:2  $2b_1 + 4b_2 = 0 \rightarrow b_1 + 2b_2 = 0$   
 eq:3  $3b_1 + 6b_2 = 0 \rightarrow b_1 + 2b_2 = 0$

Substitute, eq 3 in 1;  $b_3 = 0$

$$\begin{bmatrix} -2 & 1 \\ 1 & 0 \end{bmatrix} b_2 = 0$$

no of samples = no of equations = no of rows

Ct1

$m=n$  - equations and variables are same

- Easy to solve

$m=n$ 

- $A$  is Full Rank ---- Unique Solution
- $A$  is not Full Rank
  - Infinite solutions
  - No Solutions

Microsoft Teams interface showing a channel named "Data Science Using R- Programming" within a team named "ECE 2017". The channel view displays a list of files:

Name	Modified	Modified By
Data science syllabus.pdf	August 23	Dr. John William C...
Data science using R Programming_ Unit 2...	October 8	Dr. John William C...
Data science using R Programming_1 Unit_...	September 17	Dr. John William C...

The left sidebar shows the team "ECE 2017" with various channels listed, including "Data Communication and computer n...", "Data Science Using R- Programming", "DC - Digital Communication - Revision", "Embedded System", "Human Values and Professional Ethics", "Industrial Administration and Financial ...", "Microwave Techniques", "Mobile and Cellular Communication", "MPMC-microprocessor and Microcontrol...", "Road Safety Engineering", and "VLSI Design".

The bottom taskbar shows the Windows operating system with various application icons (Edge, Chrome, Word, PowerPoint, Teams, WhatsApp, Firefox, File Explorer, R) and the system tray displaying the time as 10:05 on 09-11-2020.