KANDULA SRINIVASA REDDY MEMORIAL COLLEGE OF ENGINEERING
(AUTONOMOUS)

KADAPA-516003. AP

(Approved by AICTE, Affiliated to JNTUA, Ananthapuramu, Accredited by NAAC)

(An ISO 9001-2008 Certified Institution)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATION COURSE

ON

"FUNDAMENTALS OF MATLAB PROGRAMMING"

Resource Person : Sri. Md. Mahaboob Pasha, Assistant Prof. ECE Dept., KSRMCE

Sri. A. Valli Basha, Assistant Prof. ECE Dept., KSRMCE

Course Coordinator : Y. Sravanthi, Assistant Professor, ECE Dept., KSRMCE

Duration: 13/07/2022 to 02/08/2022

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - AUTONOMOUS)
Kadapa, Andhra Pradesh, India - 516003

Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

An ISO 14001:2004 & 9001: 2015 Certified Institution

Lr./KSRMCE/ (Department of ECE)/2022-23

Date: 09-07-2022

To
The Principal
KSRM College of Engineering
Kadapa, AP.

Sub: KSRMCE - (Department of ECE) – Permission to conduct certification course on "Fundamentals of MATLAB Programming" –Request– reg.

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Respected Sir,

With reference to the cited, the Department of ECE in KSRMCE is going to organize a certification course for B.Tech II Sem students at DSP Lab from 13/07/2022 to 02/08/2022 in SJ Block. In this connection I kindly request you to give us permission to organize the certification course successfully.

Yours Faithfully,

Coordinators
Smt. Y Sravanthi

forwarded to the Principal Sir

Cc:

IQAC, KSRMCE.

V.S.S.Murthy
Principal

PRINCIPAL
K.S.R.M. COLLEGE OF ENGINEERING
KADAPA-516005, (A.P.)

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - AUTONOMOUS)

Kadapa, Andhra Pradesh, India - 516003

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An ISO 14001:2004 & 9001: 2015 Certified Institution

Date: 09-07-2022

Circular

All the B.Tech II sem students are hereby informed that the department of ECE is going to conduct certification course on "Fundamentals of MATLAB Programming" from 13-07-2022 to 02-08-2022. Interested students may register their names on or before 12-07-2022.

For any queries contact,

Coordinator
Smt. Y.Sravanthi

HOD
Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

Cc to:

IQAC, KSRMCE.

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KSNR lives on..

DEPARTMENT OF ELETRONICS AND COMMUNICATION ENGINEERING

REGISTRATION FORM

Certification Course
On
"FUNDAMENTALS OF MATLAB PROGRAMMING"
From 13/07/2022 to 02/08/2022

S.No	Full Name	Roll Number	Branch	Semester	Signature

K.S.R.M. COLLEGE OF ENGINEERING

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KSNR lives on..

Date:

Name of the Event: Certification Course on Fundamentals of MATLAB Programming.

Venue : DSP LAB

List of Participants

S. No	Name	Roll No	Contact No./Email Id	Signature
1	A. Vinod kumar	219Y1A0401	219Y1A0401@ksrmce.ac.in	A. Vinod
2	A. Reddi Babu	219Y1A0402	219Y1A0402@ksrmce.ac.in	A. Reddi Babu.
3	A. Akila	219Y1A0403	219Y1A0403@ksrmce.ac.in	A. Akhila
4	B. Vishnu vardhan reddy	219Y1A0410	219Y1A0410@ksrmce.ac.in	B. Vishnu vardhan
5	B. vikram Kalyan	219Y1A0412	219Y1A0412@ksrmce.ac.in	B. vikram kalyan
6	B. Reddamma	219Y1A0414	219Y1A0414@ksrmce.ac.in	B. Reddamma
7	B. Shanmukha Anjaneya	219Y1A0420	219Y1A0420@ksrmce.ac.in	B. shanmukha Anjaneya.
8	C. pavan kalyan	219Y1A0423	219Y1A0423@ksrmce.ac.in	C. pavan kalyan
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10	C. vara prasad	219Y1A0425	219Y1A0425@ksrmce.ac.in	C. vara prasad
11	C. Renuka	219Y1A0427	219Y1A0427@ksrmce.ac.in	C. Renuka
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13	C. Likitha Reddy	219Y1A0431	219Y1A0431@ksrmce.ac.in	C. Likitha
14	D. Hemalatha	219Y1A0437	219Y1A0437@ksrmce.ac.in	D. Hemalatha
15	D. Prasanna	219Y1A0438	219Y1A0438@ksrmce.ac.in	D. prasanna.
16	D. Snekitha	219Y1A0439	219Y1A0439@ksrmce.ac.in	D. Snekitha
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20	K. HariKrishna Reddy	219Y1A0461	219Y1A0461@ksrmce.ac.in	K. HariKrishna Reddy

21	K. Naga Manjula	219Y1A0462	219Y1A0462@ ksrmce.ac.in	K. Naga Manjula.
22	K. Venkata Naga Sahithi	219Y1A0463	219Y1A0463@ ksrmce.ac.in	K. Venkata Naga Sahithi
23	K. Naga pavitha	219Y1A0464	219Y1A0464@ ksrmce.ac.in	K. Poojitha.
24	K. Lavanya	219Y1A0466	219Y1A0466@ ksrmce.ac.in	K. Lavanya
25	K. M. Vishnu vardhan Reddy	219Y1A0467	219Y1A0467@ ksrmce.ac.in	K. M. Vishnu
26	Kasi abul reddy	219Y1A0473	219Y1A0473@ ksrmce.ac.in	Kasi abul reddy
27	K. Nithya Poojaiah	219Y1A0474	219Y1A0474@ ksrmce.ac.in	K. Nithya poojaiah
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30	K. Ashok	219Y1A0480	219Y1A0480@ ksrmce.ac.in	K. Ashok.
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32	K. Mounika	219Y1A0482	219Y1A0482@ ksrmce.ac.in	K. Mounika
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39	M. chinaHarishna	219Y1A0498	219Y1A0498@ ksrm.ac.in	M. chinaHarishna
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46				
47				

Co-ordinator

HOD
Professor & H.O.D.
Department of E.C.E.
KSRM College of Engineering
KADAPA - 516003

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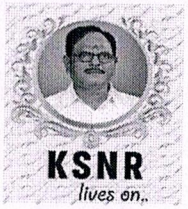

Department of Electronics and Communication Engineering

Certificate Course on Fundamentals of MATLAB Programming

From 13/07/2022 to 02/08/2022

ROLL LIST

S.No.	Roll Number	Name of the Student	Year & Branch	Email id
1	219Y1A0401	A.VINOD KUMAR	B.Tech II Sem ECE	219Y1A0401@ksrmce.ac.in
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Coordinator

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

K.S.R.M. COLLEGE OF ENGINEERING, KADAPA
(AUTONOMOUS)
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
Fundamentals of MATLAB Programming
(Certification course)

Course Objective: **36 Hrs**

- To acquire basic knowledge in MATLAB Programming
- Understand the declaration of variables
- Use of various operators
- Understand the polynomial equations using MATLAB

Course Outcomes:

After successful completion of the course the students will be able to

- CO1: Understand the basic features of MATLAB Programming, Array construction methods, operations, Relational & Logical Operators.
- CO2: Illustrate the Polynomial operations
- CO3: Analyze the Control flow structures IF-ELSE, FOR and WHILE
- CO4: Analyze differentiation and Integration formulae using MATLAB

Module-1:
Basic features: Introduction –Simple math – MATLAB Workspace – About variables – comments, punctuation and aborting execution – Script M-files.
Arrays and Array Operations: Simple arrays – Array addressing – Array construction – Scalar Array Mathematics – Array, Array Mathematics –Array size.
Plots-2D, Subplots, Editing of plots, 3D Plots
Module-2:
Control Flow - Relational & Logical operators – For, While Loops, If-Else-End Construction. Functions
Polynomials: Roots, multiplication, addition, division, derivatives and Integrals
Module-3:
Differentiation in single variable, Higher order differentiation formulae, Numerical Integration, Basics of linear algebra.
Text books:

1. Hanselman Littlefield, "Mastering MATLAB", Pearson Publications, 1st Edition, 2012.
2. David C. Kuncicky, "MATLAB Programming", Prentice Hall, 2004

References:

1. Gerald & Wheatley, "Applied Numerical Analysis", Pearson- 7th Edition, 2003.
2. R.S. Gupta, "Elements of Numerical Analysis", second edition, Cambridge University Press, 2015.
3. Mathew & Fink, "Numerical Methods Using MATLAB", Pearson, 1998.
4. Rudra Pratap, "Getting started with Matlab: A quick introduction for scientist & engineers" , Oxford, 2010.

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Department of Electronics And Communications Engineering
Certificate Course on Fundamentals of MATLAB Programming
Schedule

S.No	Date	Time	Faculty	Topic
1	13/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha, Sri.A. Valli Basha	Inaugration, Introduction to the MATLAB
2	13/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha, Sri.A. Valli Basha	Basic features: Introduction
3	14/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Simple math – MATLAB Workspace – About variables – comments,
4	14/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Simple math – MATLAB Workspace – About variables – comments,
5	15/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Simple math – MATLAB Workspace – About variables – comments,
6	15/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	Simple math – MATLAB Workspace – About variables – comments,
7	16/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	punctuation and aborting execution – Script M-files.
8	16/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	punctuation and aborting execution – Script M-files.
9	18/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Arrays and Array Operations: Simple arrays
10	18/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Arrays and Array Operations: Simple arrays

11	19/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Array addressing
12	19/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Array addressing
13	20/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Array construction –Scalar Array
14	20/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Array construction –Scalar Array
15	21/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Mathematics – Array, Array Mathematics –Array size.
`16	21/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	Mathematics – Array, Array Mathematics –Array size.
17	22/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Plots-2D, Subplots, Editing of plots, 3D Plots
18	22/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Plots-2D, Subplots, Editing of plots, 3D Plots
19	23/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Module-2: Control Flow - Relational & Logical operators – For,
20	23/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Module-2: Control Flow - Relational & Logical operators – For,
21	25/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	While Loops, If-Else-End Construction. Functions
22	25/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	While Loops, If-Else-End Construction. Functions
23	26/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Polynomials: Roots
24	26/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Polynomials: Roots
25	27/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	multiplication, addition, division
26	27/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	multiplication, addition, division
27	28/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	derivatives and Integrals
28	28/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	derivatives and Integrals

29	29/07/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Module-3: Differentiation in single variable
30	29/07/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Higher order differentiation formulae
31	30/07/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha	Numerical Integration
32	30/07/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha	Numerical Integration
33	01/08/2022	3:00pm-4:00pm	Sri.A. Valli Basha	Numerical Integration
34	01/08/2022	4:00pm-5:00pm	Sri.A. Valli Basha	Numerical Integration
35	02/08/2022	3:00pm-4:00pm	Sri.Md. Mahaboob Pasha, Sri.A. Valli Basha	Exam,Certificate Distribution and Vote of Thanks.
36	02/08/2022	4:00pm-5:00pm	Sri.Md. Mahaboob Pasha, Sri.A. Valli Basha	Exam,Certificate Distribution and Vote of Thanks.

Coordinator

HOD

Professor & H.O.D.
Department of E.C.E.
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Department of Electronics and Communication Engineering

Certificate Course on Fundamentals of MATLAB Programming

Attendance Sheet

S.No	Roll Num	Name of the Student	13/07/2022	14/07/2022	15/07/2022	16/07/2022	18/07/2022	19/07/2022	20/07/2022	21/07/2022	22/07/2022	23/07/2022	25/07/2022	26/07/2022	27/07/2022	28/07/2022	29/07/2022	30/07/2022	01/08/2022	02/08/2022
1	219Y1A0401	A.VINOD KUMAR	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
2	219Y1A0402	A.REDDI BABU	P	A	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P
3	219Y1A0403	A.AKHILA	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
4	219Y1A0410	B.VISHNU VARDHAN REDDY	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P
5	219Y1A0412	B.VIKRAM KALYAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	219Y1A0414	B.REDDAMMA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	219Y1A0420	B.SHANMUKHA ANJANEYA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P
8	219Y1A0423	C.PAVAN KALYAN	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P
9	219Y1A0424	C.SRAVANTHI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10	219Y1A0425	C. VARA PRASAD	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P
11	219Y1A0427	C. RENUKA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	219Y1A0430	C. LAVANYA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	219Y1A0431	C. LIKITHA REDDY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	219Y1A0437	D.HEMALATHA	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P
15	219Y1A0438	D.PRASANNA	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	219Y1A0439	D.SNEHITHA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A

17	219Y1A0442	D.FARIDA	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari	Fari
18	219Y1A0445	G.REDDY NARASIMHA	Reddy	Reddy	Reddy	Reddy	Reddy	Reddy	Reddy	Reddy	Reddy	A	Reddy	Reddy	Reddy	Reddy	Reddy	A	Reddy
19	219Y1A0454	G.UDAY KUMAR																	
20	219Y1A0461	K.HARIKRISHNA REDDY	Hari	Hari	Hari	Hari	Hari	Hari	Hari	A	Hari	Hari	Hari	Hari	Hari	A	Hari	Hari	Hari
21	219Y1A0462	K.NAGA MANJULA	Manju	Manju	Manj	Manj	Manj	A	Manj	Manj	Manj	Manj	Manj	Manj	Manj	Manj	Manj	Manj	Manj
22	219Y1A0463	K.VENKATA NAGA SAHITHI	Sahithi	Sahithi	Sahithi	A	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi	Sahithi
23	219Y1A0464	K.NAGA POOJITHA	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP	KNP
24	219Y1A0466	K.LAVANYA	Klavanya	Klavanya	A	Klavanya	Klavanya	Klavanya	Klavanya	Klavanya	Klavanya	A	Klavanya	Klavanya	Klavanya	Klavanya	Klavanya	Klavanya	Klavanya
25	219Y1A0467	K.M. VISHNU VARDHAN REDDY	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR	KMVR
26	219Y1A0473	KASI OBUL REDDY																	
27	219Y1A0474	K.NITHYA POOJAIAH	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja	Kpooja
28	219Y1A0477	K.CHAMUNDESWARI	Kcha	Kcha	Kcha	Kcha	Kcha	A	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha	Kcha
29	219Y1A0478	K.CHAITANYA SAI	Kchai	A	Kchai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	A	Sai	Sai	Sai	A	Sai
30	219Y1A0480	K.ASHOK	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
31	219Y1A0481	K.SINDHU PRIYA	priya	priya	priya	priya	priya	priya	priya	A	priya	priya	priya	priya	priya	priya	priya	priya	priya
32	219Y1A0482	K.MOUNIKA	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni	Mouni
33	219Y1A0483	K.MALLESH																	
34	219Y1A0484	L.HEMANTH KUMAR	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK	LHK
35	219Y1A0488	M.VEERA BRAHMENDRA	A																
36	219Y1A0489	M.~~VENKATESH~~ Venkatadri					A										A		
37	219Y1A0491	M.SUMANTH	Suman	Suman	Suman	Suman	Suman	Suman	Suman	Suman	Suman	A	Suman	Suman	Suman	Suman	Suman	Suman	Suman
38	219Y1A0492	M.JANARDHAN	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar	Janar
39	219Y1A0498	M.CHINNA HRISHNA																	
40	219Y1A0499	M.DIWAKAR REDDY	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
41	219Y1A04A0	M.SAI RAM NAIK	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai	Sai
42	219Y1A04A3	M.NALAPA REDDY	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
43	219Y1A04A6	N.VENKATA SREEJA	Nsreeja	Nsreeja	Nsreeja	Nsreeja	A	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja	Nsreeja
44	219Y1A04B4	N.SWAPNA																	
45	219Y1A04B5	N.JAGADEESH	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga	A	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga	Jaga

Coordinator

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

K.S.R.M. COLLEGE OF ENGINEERING

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Kadapa, Andhra Pradesh, India– 516 003

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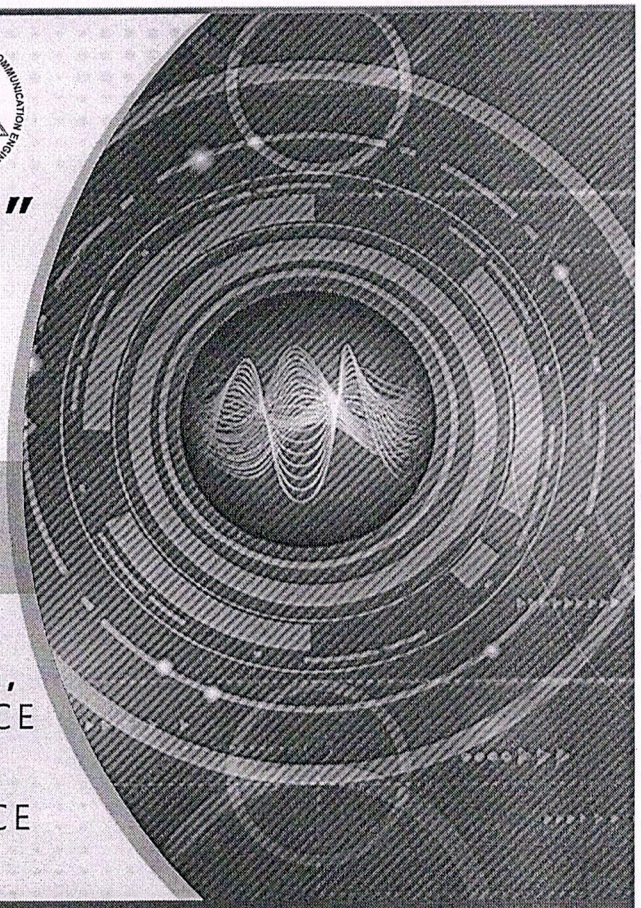
DEPARTMENT OF ECE

Certification course on

"Fundamentals of MATLAB programming"

in association with IETE-ISF

Department of ECE and IETE Student forum



13/07/2022 to 02/08/2022

DSP Lab

Coordinator

Y. Sravanthi,
Asst. Prof,Department of ECE

Resource Persons

Sri. Md. Mahaboob Pasha,
Asst. Prof,Department of ECE

Sri. A. Valli Basha,
Asst. Prof,Department of ECE

I Year II Sem ECE Students

Dr. G. Hemalatha (HOD) | *Dr. V.S.S. Murthy* (Principal) | *Dr. Kandula Chandra Obul Reddy* (Managing Director) | *Smt. K.Rajeswari* (Correspondent,Secretary & Treasurer) | *Sri K. Madan Mohan Reddy* (Vice – Chairman) | *Sri K. Raja Mohan Reddy* (Chairman)

ksrmceofficial | www.ksrmce.ac.in | 8143731980, 8575697569

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACTIVITY REPORT

CERTIFICATION COURSE On
"FUNDAMENTALS OF MATLAB PROGRAMMING"
13th July,2022 to 02nd August,2022

Target Audience	:	**B. Tech II Sem Students**
Details of Participants	:	**45 Students**
Resource person	:	**Sri.Md. Mahaboob Pasha, Assistant Prof. ECE Dept.**
		Sri.A. Valli Basha, Assistant Prof. ECE Dept.
Co-Ordinator(s)	:	**Y. Sravanthi, Assistant Professor, ECE Dept**
Organizing Department	:	**Electronics and Communication Engineering**
Venue	:	**DSP LAB**

Description :

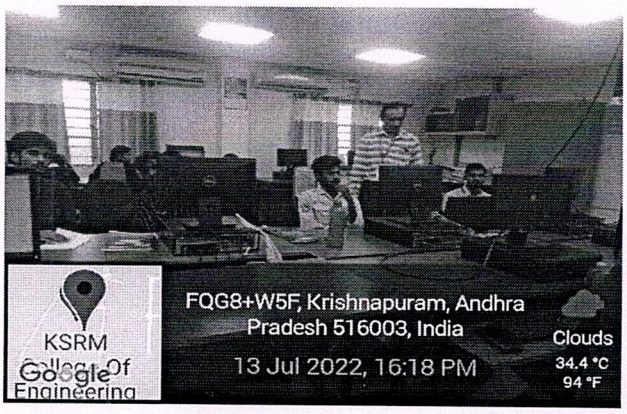
Certification course on fundamentals of MATLAB programming was organized by Dept. of ECE from 13th July,2022 to 02nd August,2022 in offline mode. Sri.Md. Mahaboob Pasha, Assistant Prof. ECE Dept. and Sri.A. Valli Basha, Assistant Prof. ECE Dept. acted as course instructors and around 45 students attended this program. The main aim of this course is to learn fundamentals of MATLAB Programming and its various applications. This is a 36 hours of certification course and certificates has been provided to students on completion of this course.

With this Certificate course students enhanced their knowledge in the area of MATLAB Programing.

Photos:

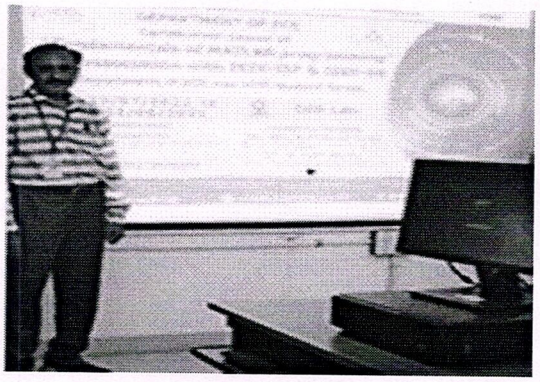
The pictures taken during the course are given below:

Coordinator start the certification course with Resource persons



Resource Person deliver the lecture

Resource Person addressing the Gathering



Resource Person deliver the lecture

Co-Ordinator

Head of the Department

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - Autonomous)

Kadapa, Andhra Pradesh, India - 516003

Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

KSNR lives on..

Certificate of Participation

This is to certify that

Mr/Ms D. Snehitha with

Roll.No. 21941A0439

has attended the Certification course on " Fundamentals of MATLAB Programming" from 13 July to 02 Aug, 2022 organized by Dept. of Electronics and Communication Engineering in Association with IETE-ISF

G. H

Dr. G. Hemalatha
HOD, ECE

V. S. S. Murthy

Prof V S S Murthy
Principal

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - Autonomous)

Kadapa, Andhra Pradesh, India - 516003

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Certificate of Participation

This is to certify that

Mr/Ms B. Vishnu Vardhan Reddy **with**

Roll.No. 219Y1A0410

has attended the Certification course on " Fundamentals of MATLAB Programming" from 13 July to 02 Aug, 2022 organized by Dept. of Electronics and Communication Engineering in Association with IETE-ISF

G. H

Dr. G. Hemalatha
HOD, ECE

V. S. S. Murty

Prof V S S Murthy
Principal

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - Autonomous)
Kadapa, Andhra Pradesh, India - 516003
Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

KSNR lives on..

Certificate of Participation

This is to certify that

Mr/Ms L. Hemanth Kumar with

Roll.No. 219Y1A0484

has attended the Certification course on " Fundamentals of MATLAB Programming" from 13 July to 02 Aug, 2022 organized by Dept. of Electronics and Communication Engineering in Association with IETE-ISF

G. H

Dr. G. Hemalatha
HOD, ECE

V. S. S. Murthy

Prof V S S Murthy
Principal

Feedback form on Certification Course "Fundamentals of MATLAB Programming" from **13/07/2022 to 02/08/2022**

sravanthi.y@ksrmce.ac.in (not shared) Switch account

* Required

Roll Number *

Your answer

Name of the Student *

Your answer

The objectives of the Certification Course were met (Objective) *

- Excellent
- Good
- Satisfactory
- Poor

The content of the course was organized and easy to follow (Delivery) *

- Excellent
- Good
- Satisfactory
- Poor

The Resource Persons were well prepared and able to answer any question (Interaction) *

- Excellent
- Good
- Satisfactory
- Poor

The exercises/role play were helpful and relevant (Syllabus Coverage) *

- Excellent
- Good
- Satisfactory
- Poor

The Certification Course satisfy my expectation (Course Satisfaction) *

- Excellent
- Satisfactory
- Good
- Poor

Any Issues

Your answer

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Kadapa, Andhra Pradesh, India - 516003

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Department of Electronics and Communication Engineering

Feedback Response on Certification Course on **Fundamantalos of MATLAB Programming from 13/07/2022 to 02/08/2022**

S.No.	email ID	Name of the student	Year & Semester	Branch	Roll No.	Is the course content met your expectation	Is the lecture sequence well planned	The contents of the course is explained with examples	Is the level of course high	Is the course exposed you to the new knowledge and practices	Is the lecturer clear and easy to understand	Rate the value of course in increasing your skills	Any issues
1	219Y1A0401@ksrmce.ac.in	A.VINOD KUMAR	B.Tech II sem	ECE	219Y1A0401	Yes	Yes	Agree	Agree	Strongly agree	4	5	Nothing
2	219Y1A0402@ksrmce.ac.in	A.REDDI BABU	B.Tech II sem	ECE	219Y1A0402	Yes	Yes	Agree	Agree	Strongly agree	5	5	Nothing
3	219Y1A0403@ksrmce.ac.in	A.AKHILA	B.Tech II sem	ECE	219Y1A0403	Yes	Yes	Agree	Agree	Strongly agree	4	5	Good
4	219Y1A0410@ksrmce.ac.in	B.VISHNU VARDHAN REDDY	B.Tech II sem	ECE	219Y1A0410	Yes	Yes	Agree	Agree	Strongly agree	5	5	nothing
5	219Y1A0412@ksrmce.ac.in	B.VIKRAM KALYAN	B.Tech II sem	ECE	219Y1A0412	Yes	Yes	Agree	Agree	Strongly agree	5	5	Good
6	219Y1A0414@ksrmce.ac.in	B.REDDAMMA	B.Tech II sem	ECE	219Y1A0414	Yes	Yes	Agree	Agree	Strongly agree	4	5	very good
7	219Y1A0420@ksrmce.ac.in	B.SHANMUKHA ANJANEYA	B.Tech II sem	ECE	219Y1A0420	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Nothing
8	219Y1A0423@ksrmce.ac.in	C.PAVAN KALYAN	B.Tech II sem	ECE	219Y1A0423	Yes	Yes	agree	Agree	Strongly agree	4	4	no
9	219Y1A0424@ksrmce.ac.in	C.SRAVANTHI	B.Tech II sem	ECE	219Y1A0424	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Nothing
10	219Y1A0425@ksrmce.ac.in	C. VARA PRASAD	B.Tech II sem	ECE	219Y1A0425	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
11	219Y1A0427@ksrmce.ac.in	C. RENUKA	B.Tech II sem	ECE	219Y1A0427	Yes	Yes	Agree	Agree	Strongly agree	5	4	Good
12	219Y1A0430@ksrmce.ac.in	C. LAVANYA	B.Tech II sem	ECE	219Y1A0430	Yes	Yes	agree	Agree	Strongly agree	5	5	Good

13	219Y1A0431@ksrmce.ac.in	C. LIKITHA REDDY	B.Tech II sem	ECE	219Y1A0431	Yes	Yes	agree	Agree	Strongly agree	3	5	Good
14	219Y1A0437@ksrmce.ac.in	D.HEMALATHA	B.Tech II sem	ECE	219Y1A0437	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
15	219Y1A0438@ksrmce.ac.in	D.PRASANNA	B.Tech II sem	ECE	219Y1A0438	Yes	Yes	agree	Agree	Strongly agree	4	4	very good
16	219Y1A0439@ksrmce.ac.in	D.SNEHITHA	B.Tech II sem	ECE	219Y1A0439	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
17	219Y1A0442@ksrmce.ac.in	D.FARIDA	B.Tech II sem	ECE	219Y1A0442	Yes	Yes	agree	Agree	Strongly agree	3	5	no
18	219Y1A0445@ksrmce.ac.in	G.REDDY NARASIMHA	B.Tech II sem	ECE	219Y1A0445	Yes	Yes	agree	Agree	Strongly agree	4	5	nithing
19	219Y1A0454@ksrmce.ac.in	G.UDAY KUMAR	B.Tech II sem	ECE	219Y1A0454	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Good
20	219Y1A0461@ksrmce.ac.in	K.HARIKRISHNA REDDY	B.Tech II sem	ECE	219Y1A0461	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good
21	219Y1A0462@ksrmce.ac.in	K.NAGA MANJULA	B.Tech II sem	ECE	219Y1A0462	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Good
22	219Y1A0463@ksrmce.ac.in	K.VENKATA NAGA SAHITHI	B.Tech II sem	ECE	219Y1A0463	Yes	Yes	agree	Agree	Strongly agree	4	4	Good
23	219Y1A0464@ksrmce.ac.in	K.NAGA POOJITHA	B.Tech II sem	ECE	219Y1A0464	Yes	Yes	agree	Agree	Strongly agree	5	4	Good
24	219Y1A0466@ksrmce.ac.in	K.LAVANYA	B.Tech II sem	ECE	219Y1A0466	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	Good
25	219Y1A0467@ksrmce.ac.in	K.M. VISHNU VARDHAN REDDY	B.Tech II sem	ECE	219Y1A0467	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
26	219Y1A0473@ksrmce.ac.in	KASI OBUL REDDY	B.Tech II sem	ECE	219Y1A0473	Yes	Yes	agree	Agree	Strongly agree	5	5	Nothing
27	219Y1A0474@ksrmce.ac.in	K.NITHYA POOJAIAH	B.Tech II sem	ECE	219Y1A0474	Yes	Yes	agree	Agree	Strongly agree	5	5	no
28	219Y1A0477@ksrmce.ac.in	K.CHAMUNDESWARI	B.Tech II sem	ECE	219Y1A0477	Yes	Yes	agree	Agree	Strongly agree	3	4	no
29	219Y1A0478@ksrmce.ac.in	K.CHAITANYA SAI	B.Tech II sem	ECE	219Y1A0478	Yes	Yes	Strongly agree	Agree	Strongly agree	3	4	no
30	219Y1A0480@ksrmce.ac.in	K.ASHOK	B.Tech II sem	ECE	219Y1A0480	Yes	Yes	Strongly agree	Agree	Strongly agree		5	no

31	219Y1A0481@ksrmce.ac.in	K.SINDHU PRIYA	B.Tech II sem	ECE	219Y1A0481	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	nothing
32	219Y1A0482@ksrmce.ac.in	K.MOUNIKA	B.Tech II sem	ECE	219Y1A0482	Yes	Yes	agree	Agree	Strongly agree	5	5	Nothing
33	219Y1A0483@ksrmce.ac.in	K.MALLESH	B.Tech II sem	ECE	219Y1A0483	Yes	Yes	agree	Agree	Strongly agree	5	4	no
34	219Y1A0484@ksrmce.ac.in	L.HEMANTH KUMAR	B.Tech II sem	ECE	219Y1A0484	Yes	Yes	agree	Agree	Strongly agree	5	4	Nothing
35	219Y1A0488@ksrmce.ac.in	M.VEERA BRAHMENDRA	B.Tech II sem	ECE	219Y1A0488	Yes	Yes	agree	Agree	Strongly agree	5	4	Good
36	219Y1A0489@ksrmce.ac.in	M.VENKATESH	B.Tech II sem	ECE	219Y1A0489	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
37	219Y1A0491@ksrmce.ac.in	M.SUMANTH	B.Tech II sem	ECE	219Y1A0491	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
38	219Y1A0492@ksrmce.ac.in	M.JANARDHAN	B.Tech II sem	ECE	219Y1A0492	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
39	219Y1A0498@ksrmce.ac.in	M.CHINNA HRISHNA	B.Tech II sem	ECE	219Y1A0498	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
40	219Y1A0499@ksrmce.ac.in	M.DIWAKAR REDDY	B.Tech II sem	ECE	219Y1A0499	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
41	219Y1A04A0@ksrmce.ac.in	M.SAI RAM NAIK	B.Tech II sem	ECE	219Y1A04A0	Yes	Yes	agree	Agree	Strongly agree	4	4	Good
42	219Y1A04A3@ksrmce.ac.in	M.NALAPA REDDY	B.Tech II sem	ECE	219Y1A04A3	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
43	219Y1A04A6@ksrmce.ac.in	N.VENKATA SREEJA	B.Tech II sem	ECE	219Y1A04A6	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
44	219Y1A04B4@ksrmce.ac.in	N.SWAPNA	B.Tech II sem	ECE	219Y1A04B4	Yes	Yes	agree	Agree	Strongly agree	3	5	Good
45	219Y1A04B5@ksrmce.ac.in	N.JAGADEESH	B.Tech II sem	ECE	219Y1A04B5	Yes	Yes	agree	Agree	Strongly agree	3	5	Nothing

Coordinator

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
CERTIFICATE COURSE ON
FUNDAMENTALS OF MATLAB PROGRAMMING
FROM 13/07/2022 TO 02/08/2022
AWARD LIST

S.No	Roll Number	Name of the Student	Marks Obtained
1	219Y1A0401	A.VINOD KUMAR	15
2	219Y1A0402	A.REDDI BABU	12
3	219Y1A0403	A.AKHILA	12
4	219Y1A0410	B.VISHNU VARDHAN REDDY	14
5	219Y1A0412	B.VIKRAM KALYAN	10
6	219Y1A0414	B.REDDAMMA	15
7	219Y1A0420	B.SHANMUKHA ANJANEYA	11
8	219Y1A0423	C.PAVAN KALYAN	10
9	219Y1A0424	C.SRAVANTHI	09
10	219Y1A0425	C. VARA PRASAD	08
11	219Y1A0427	C. RENUKA	11
12	219Y1A0430	C. LAVANYA	12
13	219Y1A0431	C. LIKITHA REDDY	13
14	219Y1A0437	D.HEMALATHA	10
15	219Y1A0438	D.PRASANNA	11
16	219Y1A0439	D.SNEHITHA	11
17	219Y1A0442	D.FARIDA	12
18	219Y1A0445	G.REDDY NARASIMHA	13
19	219Y1A0454	G.UDAY KUMAR	10
20	219Y1A0461	K.HARIKRISHNA REDDY	10
21	219Y1A0462	K.NAGA MANJULA	10
22	219Y1A0463	K.VENKATA NAGA SAHITHI	16
23	219Y1A0464	K.NAGA POOJITHA	14
24	219Y1A0466	K.LAVANYA	15
25	219Y1A0467	K.M. VISHNU VARDHAN REDDY	12
26	219Y1A0473	KASI OBUL REDDY	12
27	219Y1A0474	K.NITHYA POOJAIAH	11
28	219Y1A0477	K.CHAMUNDESWARI	10
29	219Y1A0478	K.CHAITANYA SAI	10
30	219Y1A0480	K.ASHOK	10
31	219Y1A0481	K.SINDHU PRIYA	09
32	219Y1A0482	K.MOUNIKA	12
33	219Y1A0483	K.MALLESH	14
34	219Y1A0484	L.HEMANTH KUMAR	13
35	219Y1A0488	M.VEERA BRAHMENDRA	11
36	219Y1A0489	M.VENKATESH	12
37	219Y1A0491	M.SUMANTH	12
38	219Y1A0492	M.JANARDHAN	13
39	219Y1A0498	M.CHINNA HRISHNA	11
40	219Y1A0499	M.DIWAKAR REDDY	10
41	219Y1A04A0	M.SAI RAM NAIK	12

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FUNDAMENTALS OF MATLAB PROGRAMMING FROM 13/07/2022 TO 02/08/2022
ASSESSMENT TEST

Roll Number: 219Y1A0430 **Name of the Student:** C Lavanya

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1. Which of the following is not a valid plotting command in MATLAB ? [b]
   a) Figure b) prod c) print d) plot
2. Which of the following software is used for numerical computing? [b]
   a) matlab b) simulink c) pspice d) Lbview
3. In MATLAB, -------- command is used to text label to X-axis? [d]
   a) Axes b) Xlabel c) Axis d) Ylabel
4. Which of the following is NOT a negative effect when the class or array of a matlab is changed in MATLAB? [a]
   a) It slows down the process b) it works with special features
   c) performance is negative d)it takes extra time
5. Which software provides automation in electrical power system? [c]
   a) Pspice b) EPAT c) ETAP d) PSCAD
6. Which function is NOT provided by matlab mathematical function library?[c]
   a) Bessel functions b) matrix eigenvalues c) fourier transforms d)line diagram
7. Which type of analysis is not done by MATLAB software ? [b]
   a) Numerical computing c) Algebraic solutions
   b) Plant planning Analysis d) Dynamic system simulatios
8. Which of the following is used to analyze and visualize the data in MATLAB? [d]
   a) Pspice b) power world simulator c) simulink d) PCAD
9. Which of the following commands is used to find the maximum element of a matrix in MATLAB?. [c]
   a)min b) max c) maximum d) findmax
10. Which command in MATLAB is used to create a new variable? [b]
    a) New b) var c) create d) let
11. What is the default extension of a MATLAB script file? [b]
    a) .mat b) .m c) .md d) .txt
12. Which of the following statements is used to create a for loop in MATLAB?[c]
    a) while b) do-while c) for d) repeat-until
13. Which command in MATLAB is used to display the contents of a variable [c]
    a) show b) display c) disp d) print
14. What is the result of the following expression in MATLAB: 3 + 5 * 2 [d]
    a) 16 b) 13 b) 11 d) 15
15. Which of the following commands is used to create a matrix with all elements set to 0?
    a) zeros b) ones c) eye d) rand [a]

16. What does MATLAB stand for matrix laboratory

17. What is the result of the following code in MATLAB:

```
a = [1 2 3; 4 5 6];
b = [7 8 9; 10 11 12];
c = a + b;
```

[8, 11, 14; 17, 20, 23]

18. Which command in MATLAB is used to create a plot?

Plot Command

19. What is the result of the following code in MATLAB: x = 1:5; y = x.^2;

X = [1, 2, 3, 4, 5] Y = [1 4 9 16 25]

20. What is the result of the following code in MATLAB:

```
x = [1 2; 3 4];
y = [5 6; 7 8];
z = x*y;
```

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ASSESSMENT TEST

Roll Number: 21941A0481 **Name of the Student:** K. Sindha priya

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1. Which of the following is not a valid plotting command in MATLAB ? [a]
   a) Figure b) prod c) print d) plot
2. Which of the following software is used for numerical computing? [b]
   a) matlab b) simulink c) pspice d) Lbview
3. In MATLAB, -------- command is used to text label to X-axis? [c]
   a) Axes b) Xlabel c) Axis d) Ylabel
4. Which of the following is NOT a negative effect when the class or array of a matlab is changed in MATLAB? [d]
   a) It slows down the process b) it works with special features
   c) performance is negative d)it takes extra time
5. Which software provides automation in electrical power system? [d]
   a) Pspice b) EPAT c) ETAP d) PSCAD
6. Which function is NOT provided by matlab mathematical function library?[a]
   a) Bessel functions b) matrix eigenvalues c) fourier transforms d)line diagram
7. Which type of analysis is not done by MATLAB software ? [b]
   a) Numerical computing c) Algebraic solutions
   b) Plant planning Analysis d) Dynamic system simulatios
8. Which of the following is used to analyze and visualize the data in MATLAB? [a]
   a) Pspice b) power world simulator c) simulink d) PCAD
9. Which of the following commands is used to find the maximum element of a matrix in MATLAB?. [b]
   a)min b) max c) maximum d) findmax
10. Which command in MATLAB is used to create a new variable? [b]
    a) New b) var c) create d) let
11. What is the default extension of a MATLAB script file? [b]
    a) .mat b) .m c) .md d) .txt
12. Which of the following statements is used to create a for loop in MATLAB?[b]
    a) while b) do-while c) for d) repeat-until
13. Which command in MATLAB is used to display the contents of a variable [c]
    a) show b) display c) disp d) print
14. What is the result of the following expression in MATLAB: 3 + 5 * 2 [d]
    a) 16 b) 13 b) 11 d) 15
15. Which of the following commands is used to create a matrix with all elements set to 0?
    a) zeros b) ones c) eye d) rand [b]

16. What does MATLAB stand for Matrix Laboratory

17. What is the result of the following code in MATLAB:

```
a = [1 2 3; 4 5 6];
b = [7 8 9; 10 11 12];
c = a + b;
```

18. Which command in MATLAB is used to create a plot?

Plot command is used.

19. What is the result of the following code in MATLAB: x = 1:5; y = x.^2;

x = [1 2 3 4 5] y = [1 4 9 16 25]

20. What is the result of the following code in MATLAB:

```
x = [1 2; 3 4];
y = [5 6; 7 8];
z = x*y;
```

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ASSESSMENT TEST

Roll Number: 219Y1A0473 **Name of the Student:** Kasi abul Reddy.

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1. Which of the following is not a valid plotting command in MATLAB ? [a]
   a) Figure b) prod c) print d) plot
2. Which of the following software is used for numerical computing? [a]
   a) matlab b) simulink c) pspice d) Lbview
3. In MATLAB, -------- command is used to text label to X-axis? [b]
   a) Axes b) Xlabel c) Axis d) Ylabel
4. Which of the following is NOT a negative effect when the class or array of a matlab is changed in MATLAB? [b]
   a) It slows down the process b) it works with special features
   c) performance is negative d)it takes extra time
5. Which software provides automation in electrical power system? [C]
   a) Pspice b) EPAT c) ETAP d) PSCAD
6. Which function is NOT provided by matlab mathematical function library?[C]
   a) Bessel functions b) matrix eigenvalues c) fourier transforms d)line diagram
7. Which type of analysis is not done by MATLAB software ? [d]
   a) Numerical computing c) Algebraic solutions
   b) Plant planning Analysis d) Dynamic system simulatios
8. Which of the following is used to analyze and visualize the data in MATLAB? [d]
   a) Pspice b) power world simulator c) simulink d) PCAD
9. Which of the following commands is used to find the maximum element of a matrix in MATLAB?. [a]
   a)min b) max c) maximum d) findmax
10. Which command in MATLAB is used to create a new variable? [b]
    a) New b) var c) create d) let
11. What is the default extension of a MATLAB script file? [b]
    a) .mat b) .m c) .md d) .txt
12. Which of the following statements is used to create a for loop in MATLAB?[C]
    a) while b) do-while c) for d) repeat-until
13. Which command in MATLAB is used to display the contents of a variable [C]
    a) show b) display c) disp d) print
14. What is the result of the following expression in MATLAB: 3 + 5 * 2 [d]
    a) 16 b) 13 b) 11 d) 15
15. Which of the following commands is used to create a matrix with all elements set to 0?
    a) zeros b) ones c) eye d) rand

[a]

16. What does MATLAB stand for Matrix Laboratory

17. What is the result of the following code in MATLAB:

```
a = [1 2 3; 4 5 6];
b = [7 8 9; 10 11 12];
c = a + b;
```

[8 10 12 ; 14 16 18]

18. Which command in MATLAB is used to create a plot?

Plot Command is used.

19. What is the result of the following code in MATLAB: x = 1:5; y = x.^2;

x = {1, 2, 3, 4, 5} y = {1, 4, 9, 16, 25}

20. What is the result of the following code in MATLAB:

```
x = [1 2; 3 4];
y = [5 6; 7 8];
z = x*y;
```

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ASSESSMENT TEST

Roll Number: 219Y1A0424 **Name of the Student:** C. Sravanthi

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1. Which of the following is not a valid plotting command in MATLAB ? [d] ✗
   a) Figure b) prod c) print d) plot
2. Which of the following software is used for numerical computing? [C] ✗
   a) matlab b) simulink c) pspice d) Lbview
3. In MATLAB, -------- command is used to text label to X-axis? [b] ✗
   a) Axes b) Xlabel c) Axis d) Ylabel
4. Which of the following is NOT a negative effect when the class or array of a matlab is changed in MATLAB? [a] ✗
   a) It slows down the process b) it works with special features
   c) performance is negative d)it takes extra time
5. Which software provides automation in electrical power system? [a] ✗
   a) Pspice b) EPAT c) ETAP d) PSCAD
6. Which function is NOT provided by matlab mathematical function library?[b] ✓
   a) Bessel functions b) matrix eigenvalues c) fourier transforms d)line diagram
7. Which type of analysis is not done by MATLAB software ? [C] ✗
   a) Numerical computing c) Algebraic solutions
   b) Plant planning Analysis d) Dynamic system simulatios
8. Which of the following is used to analyze and visualize the data in MATLAB? [d] ✗
   a) Pspice b) power world simulator c) simulink d) PCAD
9. Which of the following commands is used to find the maximum element of a matrix in MATLAB?. [b] ✓
   a)min b) max c) maximum d) findmax
10. Which command in MATLAB is used to create a new variable? [b] ✗
    a) New b) var c) create d) let
11. What is the default extension of a MATLAB script file? [b] ✓
    a) .mat b) .m c) .md d) .txt
12. Which of the following statements is used to create a for loop in MATLAB?[C] ✓
    a) while b) do-while c) for d) repeat-until
13. Which command in MATLAB is used to display the contents of a variable [C] ✓
    a) show b) display c) disp d) print
14. What is the result of the following expression in MATLAB: 3 + 5 * 2 [d] ✓
    a) 16 b) 13 b) 11 d) 15
15. Which of the following commands is used to create a matrix with all elements set to 0?
    a) zeros b) ones c) eye d) rand
    [d] ✗

16. What does MATLAB stand for matrix Laboratory

17. What is the result of the following code in MATLAB:

```
a = [1 2 3; 4 5 6];
b = [7 8 9; 10 11 12];
c = a + b;
```

[8, 10, 11 ; 14, 16, 18]

18. Which command in MATLAB is used to create a plot?

Plot Command

19. What is the result of the following code in MATLAB: x = 1:5; y = x.^2;

x = [1, 2, 3, 4, 5] ; y = [1, 4, 9, 16, 24]

20. What is the result of the following code in MATLAB:

```
x = [1 2; 3 4];
y = [5 6; 7 8];
z = x*y;
```

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ASSESSMENT TEST

Roll Number: _____ **Name of the Student:** _____

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1. Which of the following is not a valid plotting command in MATLAB ? [ ]
   a) Figure b) prod c) print d) plot
2. Which of the following software is used for numerical computing? [ ]
   a) matlab b) simulink c) pspice d) Lbview
3. In MATLAB, -------- command is used to text label to X-axis? [ ]
   a) Axes b) Xlabel c) Axis d) Ylabel
4. Which of the following is NOT a negative effect when the class or array of a matlab is changed in MATLAB? [ ]
   a) It slows down the process b) it works with special features
   c) performance is negative d)it takes extra time
5. Which software provides automation in electrical power system? [ ]
   a) Pspice b) EPAT c) ETAP d) PSCAD
6. Which function is NOT provided by matlab mathematical function library?[ ]
   a) Bessel functions b) matrix eigenvalues c) fourier transforms d)line diagram
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9. Which of the following commands is used to find the maximum element of a matrix in MATLAB?. [ ]
   a)min b) max c) maximum d) findmax
10. Which command in MATLAB is used to create a new variable? [ ]
    a) New b) var c) create d) let
11. What is the default extension of a MATLAB script file? [ ]
    a) .mat b) .m c) .md d) .txt
12. Which of the following statements is used to create a for loop in MATLAB?[ ]
    a) while b) do-while c) for d) repeat-until
13. Which command in MATLAB is used to display the contents of a variable [ ]
    a) show b) display c) disp d) print
14. What is the result of the following expression in MATLAB: 3 + 5 * 2 [ ]
    a) 16 b) 13 b) 11 d) 15
15. Which of the following commands is used to create a matrix with all elements set to 0?
    a) zeros b) ones c) eye d) rand

16. What does MATLAB stand for

17. What is the result of the following code in MATLAB:

```
a = [1 2 3; 4 5 6];
b = [7 8 9; 10 11 12];
c = a + b;
```

18. Which command in MATLAB is used to create a plot?

19. What is the result of the following code in MATLAB: `x = 1:5;` `y = x.^2;`

20. What is the result of the following code in MATLAB:

```
x = [1 2; 3 4];
y = [5 6; 7 8];
z = x*y;
```

Outline

1. Introduction
   1. Overview
   2. Variables
   3. Matrix
   4. Misc.
2. Image Processing with Matlab
3. References

What & Why

- Matrix Laboratory
  - Dynamically typed language
    - Variables require no declaration
    - Creation by initialization (x=10;)
  - All variables are treated as matrices
    - Scalar: 1×1 matrix; Vector: N×1 or 1×N matrix
    - Calculations are much faster
- Advantages
  - Fast implementation and debugging
  - Natural matrix operation
  - Powerful image processing toolbox

MATLAB

Outline

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   1. Overview
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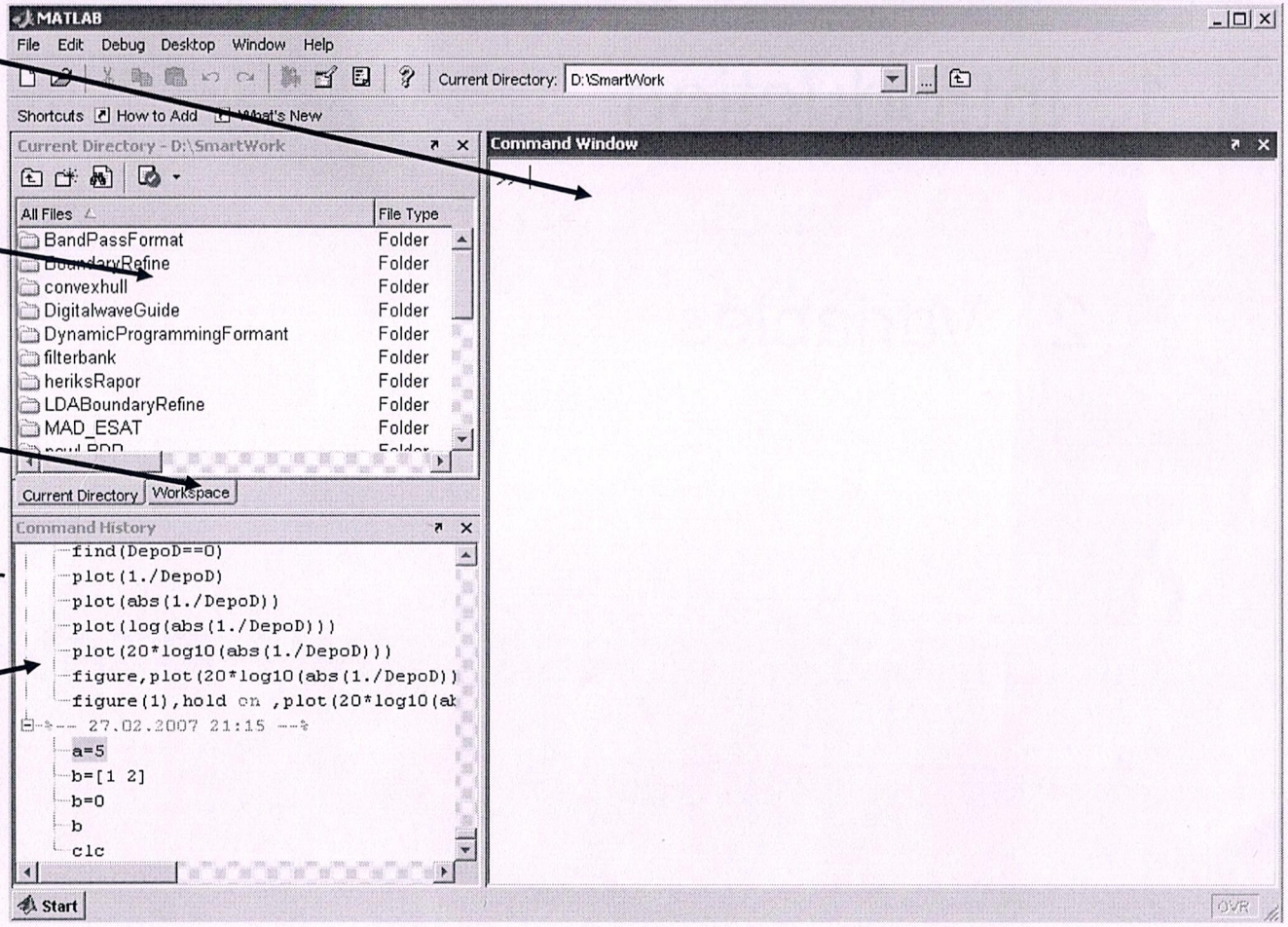
Matlab Main Screen

- Command Window
  - type commands
- Current Directory
  - View folders and m-files
- Workspace
  - View variables
  - Double click on a variable to see it in the Array Editor
- Command History
  - view past commands
  - save a whole session using diary



Slide credit: İ.Yücel Özbek

Variables

Defining variables

```
int a;
a=1;
double b;
b=2+4;
```

C/C++

```
>>a=1;
>>b=2+4;
```

Matlab

```
>> a=1
a =
     1
>> b=2+4
b =
     6
```

Variables are created when they are used

All variables are created as matrices with “some” type (unless specified)

Variables

a = 1;

a <1x1 double>

	1	2
1	1	
2		

```
>> whos a
  Name      Size            Bytes  Class     Attributes

  a         1x1                 8  double
```

b = false;

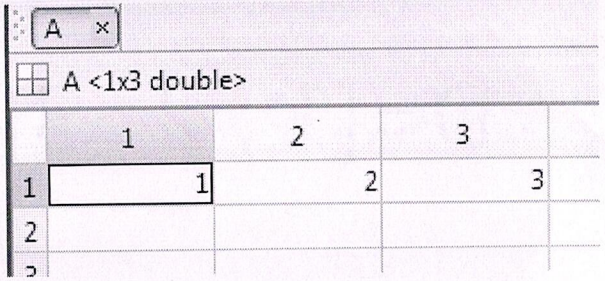
b <1x1 logical>

	1	2
1	0	
2		

Variables

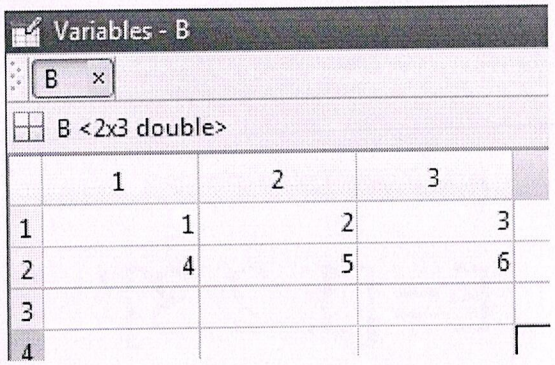
A = [1, 2, 3]

```
>> A=[1 2 3]
A =
     1     2     3
```



B = [1,2,3;4,5,6]

```
>> B=[1,2,3;4,5,6]
B =
     1     2     3
     4     5     6
```



C=[1 2 3;4 5 6;7 8 9]

```
>> C= [1 2 3 ; 4 5 6; 7 8 9]
C =
     1     2     3
     4     5     6
     7     8     9
```

Variables

D=[1 ; 2 ; 3]

```
>> D= [1 ;2 ;3]
D =
     1
     2
     3
```

D <3x1 double>

	1	2
1	1	
2	2	
3	3	
4		

E=[1 2 3]'

```
>> E=[1 2 3]'
E =
     1
     2
     3
```

Variables

```
>> A=1:10
A =
     1     2     3     4     5     6     7     8     9    10


>> B= 0:2:10
B =
     0     2     4     6     8    10


>> 1:0.5:5
ans =
    1.0000    1.5000    2.0000    2.5000    3.0000    3.5000    4.0000    4.5000    5.0000
```

Variables

C = ‘Hello World!';

```
>> C='Hello World!'
C =
Hello World!
```

Variables

```
A = zeros(3);
B = ones(5);
C = rand(100,2);
D = eye(20);
E = sprintf('%d\n',9);
```

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Matrix Index

Matrix indices begin from 1 (not 0!!!)

Matrix indices must be positive integers

```
A =
     1     2     3
     4     5     6
     7     8     9
```

```
>> A(1,3)
ans =
     3
```

```
>> A(1)
ans =
     1
```

```
>> A(2)
ans =
     4
```

Column-Major Order

```
>> A(0)
Subscript indices must either be real positive integers or logicals.
>> A(1,4)
Index exceeds matrix dimensions.
>>
```

Matrix Index

```
A =

     1     2     3
     4     5     6
     7     8     9
```

```
>> A(2,2:3)

ans =

     5     6
```

```
>> A(2,1:end)

ans =

     4     5     6
```

```
>> A(2,:)

ans =

     4     5     6
```

```
>> A(:)

ans =

     1
     4
     7
     2
     5
     8
     3
     6
     9
```

```
>> A(2,1:2:3)

ans =

     4     6
```

```
>> A(2,[1 3])

ans =

     4     6
```

Matrix Index

Accessing Elements

```
A = rand(4);
A(2,3)
A(:,2)
A(end,:)
A([1,2],[1,3])
A(1:2,3:end)
```

http://www.mathworks.com/company/newsletters/articles/matrix-indexing-in-matlab.html

Matrix Operations

+ addition

- subtraction

* multiplication

^ power

‘ complex conjugate transpose

Matrix Operations

Given A and B:

```
>> A = [1 2 3;4 5 6;7 8 9]

A =

     1     2     3
     4     5     6
     7     8     9
```

```
>> B = [3 5 2; 5 2 8; 3 6 9]

B =

     3     5     2
     5     2     8
     3     6     9
```

Addition

```
>> X = A + B

X =

     4     7     5
     9     7    14
    10    14    18
```

Subtraction

```
>> Y = A - B

Y =

    -2    -3     1
    -1     3    -2
     4     2     0
```

Product

```
>> Z = A * B

Z =

    22    27    45
    55    66   102
    88   105   159
```

Transpose

```
>> T = A'

T =

     1     4     7
     2     5     8
     3     6     9
```

Slide credit: İ.Yücel Özbek

Matrix Operations

.* element-wise multiplication

./ element-wise division

.^element-wise power

Slide credit: İ.Yücel Özbek

Matrix Operations

```
A = [1 2 3; 5 1 4; 3 2 1]
A =
        1    2    3
        5    1    4
        3    2   -1
```

```
x = A(1,:)

x=
     1   2   3
```

```
y = A(3 ,:)

y=
     3   4  -1
```

```
b = x .* y

b=
     3   8  -3
```

```
c = x . / y

c=
   0.33   0.5   -3
```

```
d = x .^y

d=
     1    16    0.33
```

Slide credit: İ.Yücel Özbek

Matrix Operations

A/B Solve linear equation xA=B for x

A\B Solve linear equation Ax=B for x

Matrix Concatenation

X=[1 2], Y=[3 4]

```
>> A=[X Y]
A =
     1     2     3     4
```

```
>> A=[X ; Y]
A =
     1     2
     3     4
```

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Strings

```
A =  'vision and geometry'
strfind(A,  'geometry')
strcmp(A,'computer vision')
B = strcat(A,' 12345')
c = [A,' 12345']
D = sprintf('I am %02d years old.\n',9)
int2str, str2num, str2double
```

http://www.mathworks.com/help/matlab/ref/strings.html

Cell and Structure

- Cells
  - a = {}; a = cell(1)
  - b = {1,2,3}
  - c = {{1,2},2,{3}}
  - D = {'cat','dog','sheep','cow'}
  - E = {'cat',4}

```
>> D{2}
ans =
dog
```

```
>> E{1}
ans =
cat
>> E{2}
ans =
     4
```

- Structures
  - A = struct('name','1.jpg','height',640,'width',480);
  - b.name = '1.jpg‘

http://www.mathworks.com/help/matlab/matlab_prog/cell-vs-struct-arrays.html

Operators

== Equal to

~= Not equal to

< Strictly smaller

> Strictly greater

<= Smaller than or equal to

>= Greater than equal to

& And operator

| Or operator

Flow Control

- if, for, while ....

```
if (a<3)
    Some Matlab Commands;
elseif (b~=5)
    Some Matlab Commands;
end
```

```
while  ((a>3) & (b==5))
    Some Matlab Commands;
end
```

```
for ii=1:100
    Some Matlab Commands;
end
```

```
for j=1:3:200
    Some Matlab Commands;
end
```

```
for k=[0.1 0.3 -13 12 7 -9.3]
    Some Matlab Commands;
end
```

http://www.mathworks.com/help/matlab/control-flow.html

Slide credit: İ.Yücel Özbek

Vectorization

Optimize your code for Matrix operations

Examples

In other languages:

```
tic; i = 0;
for t = 0:.001:1000
    i = i + 1;
    y(i) = sin(t);
end; toc;
```

Elapsed time is 0.509381 seconds.

In MATLAB:

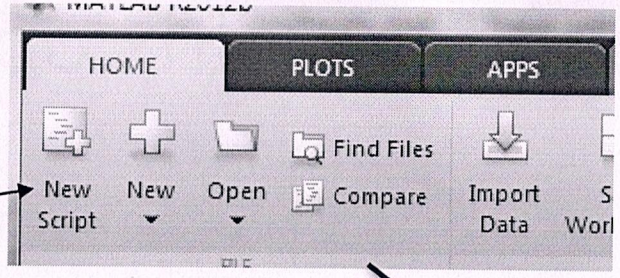
```
tic; t = 0:.001:1000;
y = sin(t); toc;
```

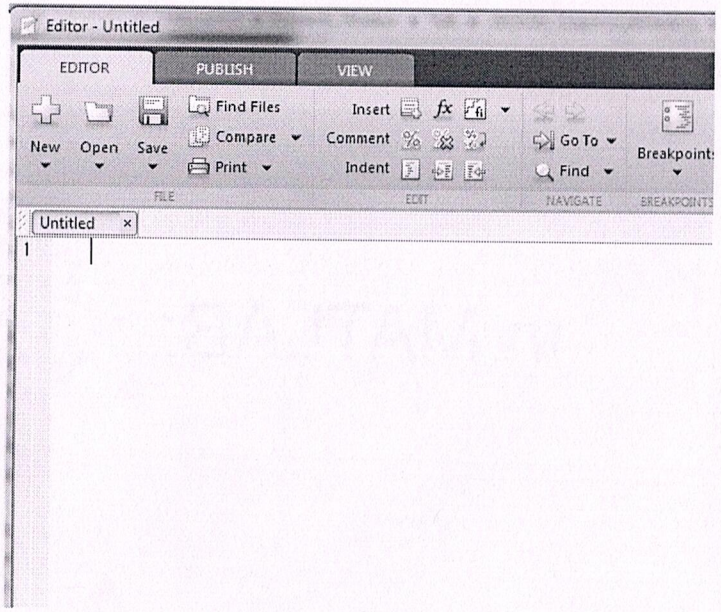
Elapsed time is 0.011212 seconds.

http://www.mathworks.com/help/matlab/matlab_prog/vectorization.html

M-File

Click to create
a new M-File





- A text file containing script or function
- Extension ".m"

Functions

For example,

Implement your own function Add3()

B = Add3(A)

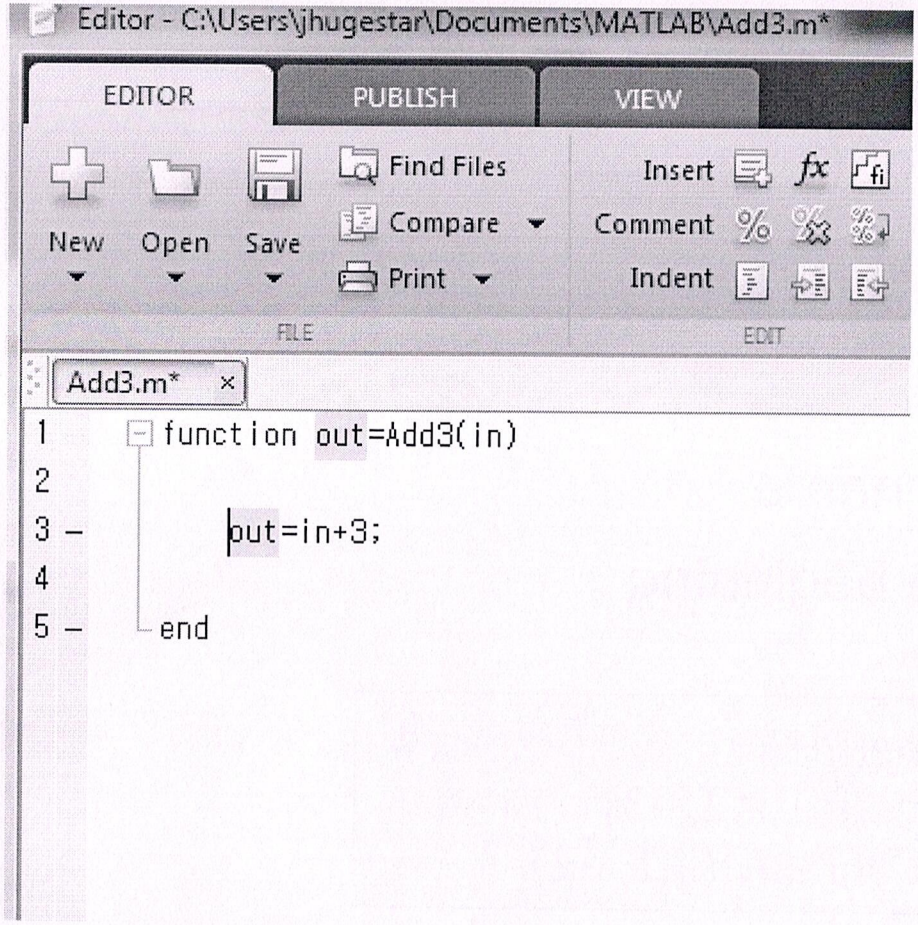
How?

Create a M-file with the function name

Use the function definition at the beginning

```
function out1=functionname(in1)
function out1=functionname(in1,in2,in3)
function [out1,out2]=functionname(in1,in2)
```

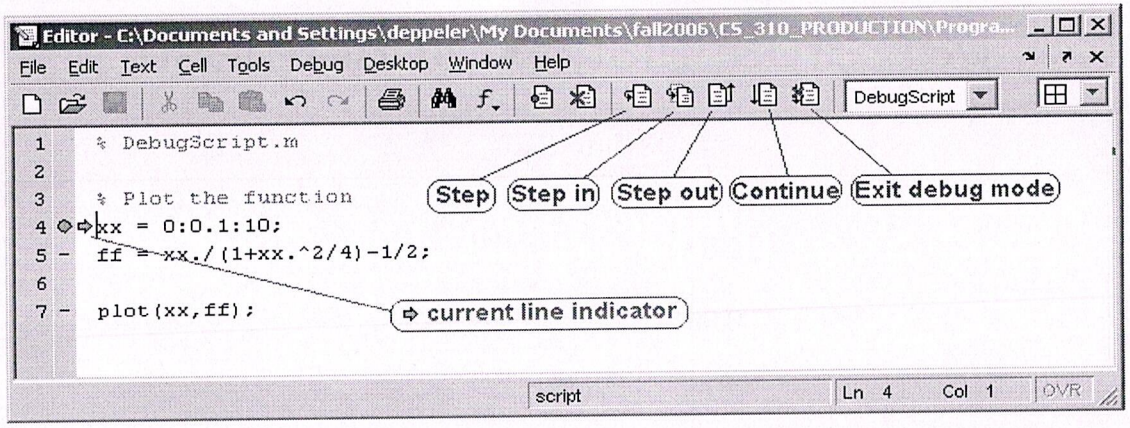
Functions




```
>> a =magic(3)
a =
     8     1     6
     3     5     7
     4     9     2
>> b =Add3(a)
b =
    11     4     9
     6     8    10
     7    12     5
```

Debugging

Breakpoints

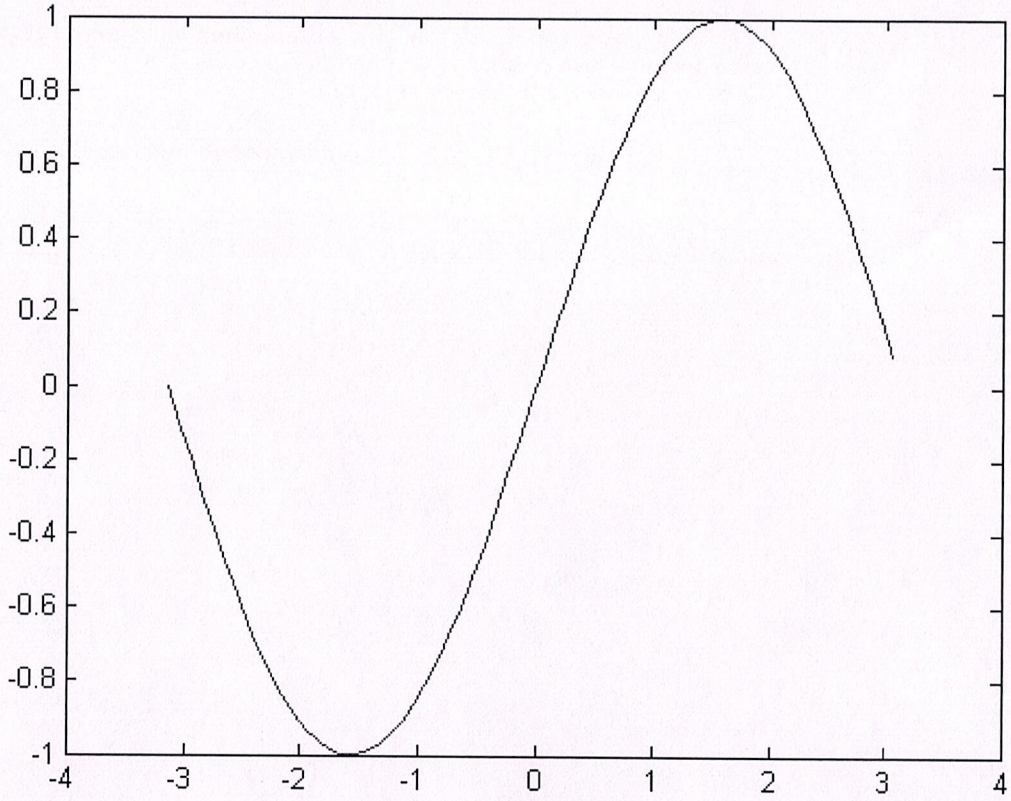


Plotting

Plotting functions

plot, plot3d, bar, area, hist, contour, mesh

```
x = -pi:.1:pi;
y = sin(x);
plot(x,y)
```



Help & Doc

help functionName

doc functionName

References

More tutorials

- Matlab course @ ETHZ (http://goo.gl/W2jmZJ)
- Introductory Digital Processing @ IIT (http://goo.gl/U0osD2)

Open source CV algorithms with Matlab interface

- VLFeat (http://www.vlfeat.org/)
- Piotr Dollar's toolbox (http://vision.ucsd.edu/~pdollar/toolbox/)
- Mexopencv (http://www.cs.stonybrook.edu/~kyamagu/mexopencv/)