DAILY ASSESSMENT REPORT

Date:	06 July 2020	Name:	Gagan M K
Course:	Matlab Onramp	USN:	4AL17EC032
Topic:	- Course Overview - Commands - MATLAB Desktop and Editor - Vectors and Matrices	Semester & Section:	6th sem & 'A' sec
GitHub Repository:	Alvas-education-foundation/Gagan-Git		

FORENOON SESSION DETAILS
Image of session

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

Matlab:

- **MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation.**
- **Typical uses include: Math and computation. MATLAB (Matrix Laboratory) is a programming environment for algorithm development, data analysis, visualization, and numerical computation, developed by MathWorks.**
- **MATLAB is widely used for matrix-based computation designed for scientific and engineering use. Features of MATLAB It is a high-level language for numerical computation, visualization and application development.**
- **It provides vast library of mathematical functions for linear algebra, statistics, Fourier analysis, filtering, optimization, numerical integration and solving ordinary differential equations MATLAB (matrix laboratory) is a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks.**
- **Although MATLAB is intended primarily for numerical computing, an optional toolbox uses the MuPAD symbolic engine allowing access to symbolic computing abilities.**
- **MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation.**
- **Typical uses include: Math and computation MATLAB is an interactive system whose basic data element is an array that does not require dimensioning.**
- **This allows you to solve many technical computing problems, especially those with matrix and vector formulations, in a fraction of the time it would take to write a program in a scalar non interactive language such as C or Fortran.**
- **The name MATLAB stands for matrix laboratory. MATLAB was originally written to provide easy access to matrix software developed by the LINPACK and EISPACK projects, which together represent the state-of-the-art in software for matrix computation.**
- **MATLAB has evolved over a period of years with input from many users. In university environments, it is the standard instructional tool for introductory and advanced courses in mathematics, engineering, and science. In industry, MATLAB is the tool of choice for high-productivity research, development, and analysis.**
- **MATLAB features a family of application-specific solutions called toolboxes. Very important to most users of MATLAB, toolboxes allow you to learn and apply specialized technology. Toolboxes are comprehensive collections of MATLAB functions (M-files) that extend the MATLAB environment to solve particular classes of problems. Areas in which toolboxes are available include signal processing, control systems, neural networks, fuzzy logic, wavelets, simulation, and many others.**

4.3 Array Creation Functions   ← PREVIOUS   NEXT →

Task 1
Task 2
Task 3
Further Practice

HOME | LIVE EDITOR | VIEW

Text | B *I* U M | Code | Task ▾ Control ▾ Refactor ▾ | Section Break | Run Section / Run and Advance / Run to End | Run | Step | Stop

TEXT | CODE | SECTION | RUN

How do you get the size of an existing matrix? You can use the `size` function.

```
size(x)
```

You can also create a matrix with the same size as an existing matrix in one line of code.

```
rand(size(x))
```

Next section >

createarrays.mlx * × +

Array Creation Functions

Instructions are in the task pane to the left. Complete and submit each task one at a time.

Task 1
```
1   x= rand(5)
2
```

Task 2
```
3   x= rand(5,1)
4
```

Task 3
```
5   x = zeros(6,3)
6
```

Further Practice
```
7   size(x)
8   rand(size(x))
9
```

```
x = 5×5
    0.751267059305653   0.959291425205444 ...
    0.255095115459269   0.547215529963803
    0.505957051665142   0.138624442828679
    0.699076722656686   0.149294005559057
    0.890903252535798   0.257508254123736

x = 5×1
    0.285839018820374
    0.757200229110721
    0.753729094278495
    0.380445846975357
    0.567821640725221

x = 6×3
    0   0   0
    0   0   0
    0   0   0
    0   0   0
    0   0   0
    0   0   0

ans = 1×2
    6   3

ans = 6×3
    0.075854289563064   0.568823660872193 ...
    0.053950118666607   0.469390641058206
    0.530797553008973   0.011902069501241
    0.779167230102011   0.337122644398882
    0.934010684229183   0.162182308193243
    0.129906208473730   0.794284540683907
```

4.2 Creating Evenly-Spaced Vectors   ← PREVIOUS   NEXT →

Task 1
Task 2
Task 3
Task 4
Task 5
Task 6
Task 7
Further Practice

HOME | LIVE EDITOR | VIEW

Text | B *I* U M | Code | Task ▾ Control ▾ Refactor ▾ | Section Break | Run Section / Run and Advance / Run to End | Run | Step | Stop

TEXT | CODE | SECTION | RUN

Notice that if you are using `linspace` or `:` to create a vector, you don't need to use brackets (`[ ]`).

If you wanted to create an evenly-spaced vector from 1 to 2π with 100 elements, would you use `linspace` or `:` ?

Next section >

evenvectors.mlx * × +

Task 4
```
7   x = 3:2:13
8
```

Task 5
```
9   x = linspace(1,10,5)
10
```

Task 6
```
11  x= x'
12
```

Task 7
```
13  x = (5:2:9)'
14
```

Further Practice
```
15  x = linspace(1,2*pi,100)
16
```

```
x = 1×4
    1   2   3   4

x = 1×9
    1.000000000000000   1.500000000000000 ...

x = 1×6
    3   5   7   9   11   13

x = 1×5
    1.000000000000000   3.250000000000000 ...

x = 5×1
    1.000000000000000
    3.250000000000000
    5.500000000000000
    7.750000000000000
   10.000000000000000

x = 3×1
    5
    7
    9

x = 1×100
    1.000000000000000   1.053365508153329 ...
```
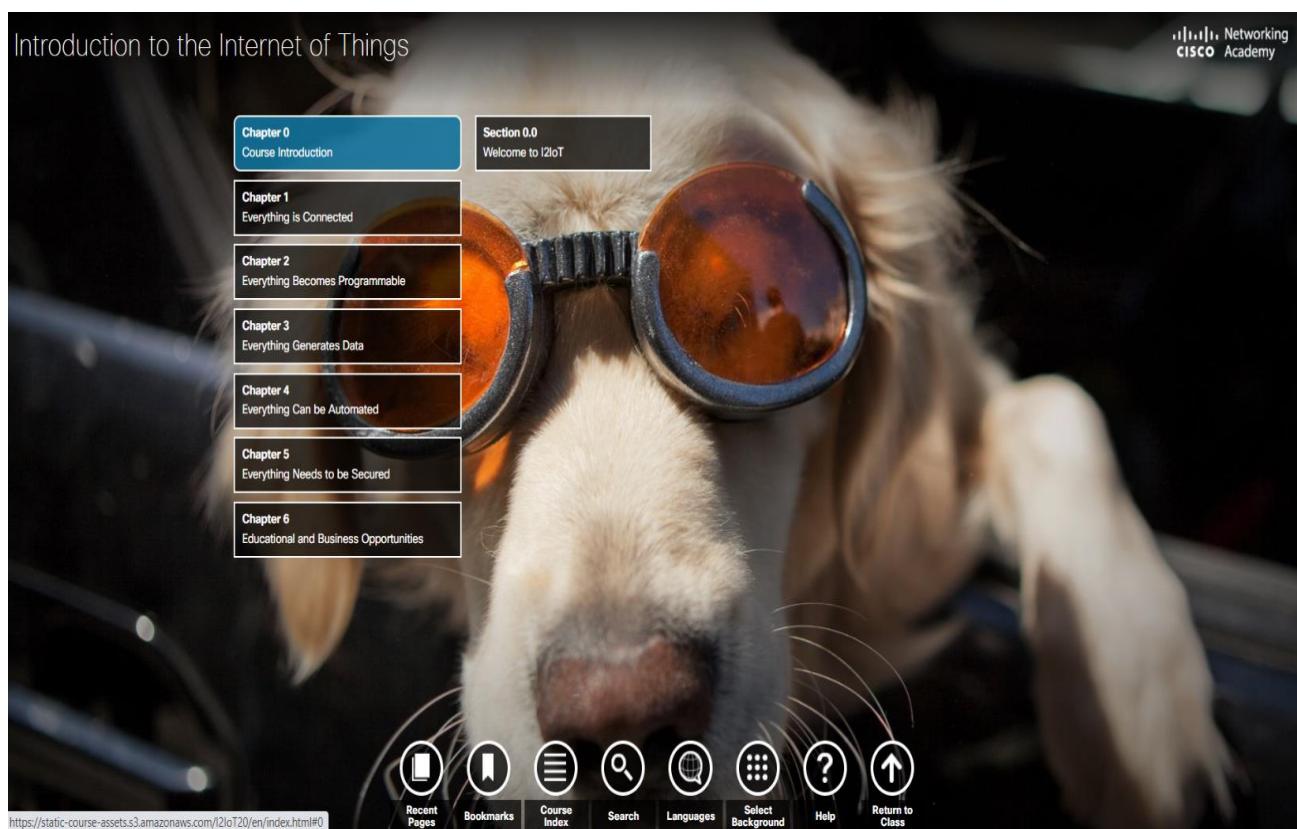
COMMAND WINDOW

Date:	06 July 2020	Name:	Gagan M K
Course:	Introduction to the Internet of Things	USN:	4AL17EC032
Topic:	• **Chapter 0** • **Chapter 1**	Semester & Section:	6th sem & 'A' sec

| AFTERNOON SESSION DETAILS |
|---|
| **Image of session:**

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Internet Of Things:

- Now you would be wondering what is the required hardware for preparing an IoT solution. The answer to this question is, you'll first require sensors that will sense the environment, then you require a remote dashboard to monitor your output and display it in a clearer & conceivable form. At last, you will require a device with the capability of serving & routing.
- The key task of the system would be detecting specific conditions and taking actions accordingly. One thing to keep in mind is securing the communication between the devices and the dashboard.
- Some of the common sensors that you are surrounded by are accelerometers, temperature sensors, magnetometers, proximity sensors, gyroscopes, image sensors, acoustic sensors, light sensors, pressure sensors, gas RFID sensors, humidity sensors & micro flow sensors.
- Nowadays we also have many wearable devices like smartwatches, shoes & 3D glasses. This is the best example of a smart solution. 3D glasses adjust television's brightness and contrast according to your eye and your smartwatches keeps track of your daily activities and fitness.
- But I feel the most important device which has tremendously contributed to IoT are the cell phones. Mobile apps have immensely contributed to revolutionizing the technology world. Cell phones are already encased with applications and sensors that reveals lots of information about its user.
- It has Geo-location information, it can sense and trace light condition, the orientation of your device and a lot more information. It also comes with multiple connectivity options like Wi-Fi, Bluetooth and cellular that helps them to communicate with other devices.
- Thus, due to these default qualities of cell phones, it is the core of the IoT ecosystem. Today, Smartphone can interact with smartwatch and fitness band to further ease and enhance the user experience.
- IoT uses multiple technologies and protocols to communicate with devices based on the requirements. The major technologies & protocols are Bluetooth, wireless, NFC, RFID, radio protocols and WiFi-Direct.
- IoT applications are flourishing across all industries & market. The IoT has a multitude of expansion over various industries.
- It spans over all groups of users, from those who are trying to reduce & conserve energy in their home to large organizations who want to improve their business operations.
- IoT has not only proved itself useful in optimizing critical applications in many organisations, but also have boosted the concept of advanced automation which we have imagined a decade before.
- Let's understand the capabilities of IoT across different industries and look how they are revolutionizing them.

Attended the webinar from "Salesforce - Job ready program"
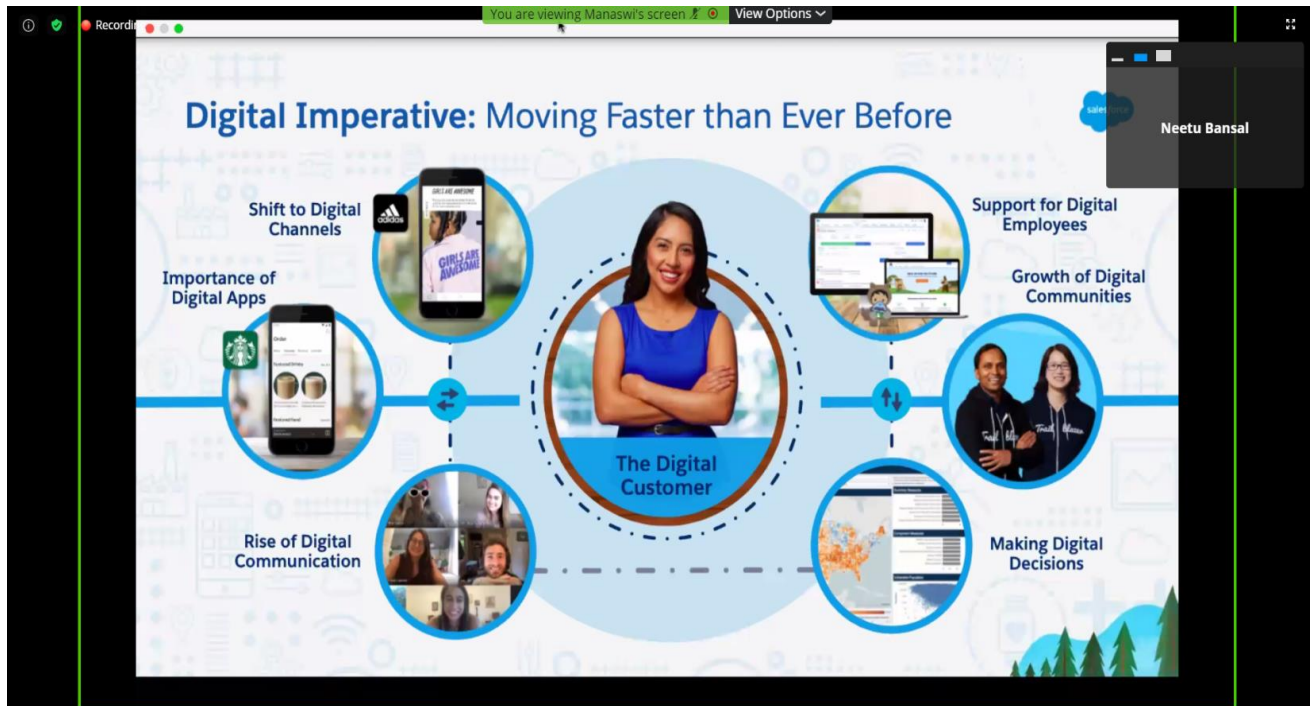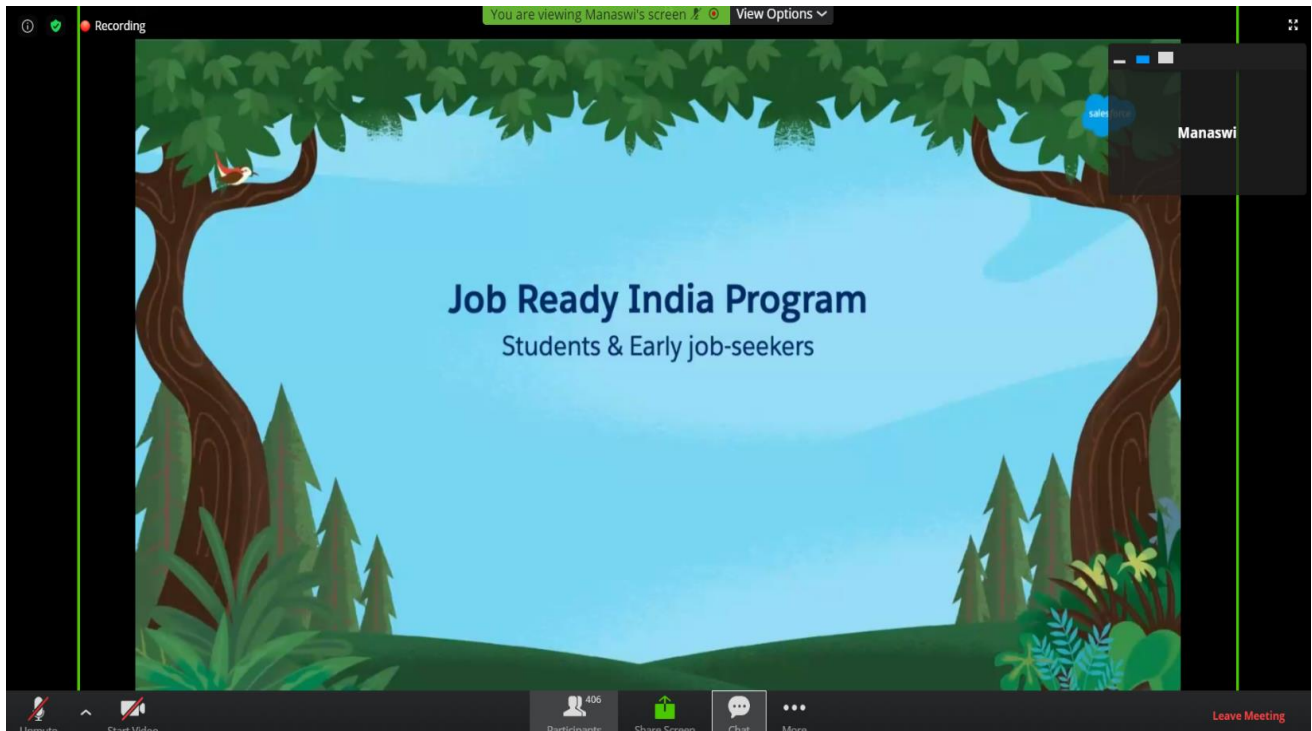
Attended Webinar from "TCS ION on Internship Opportunities"