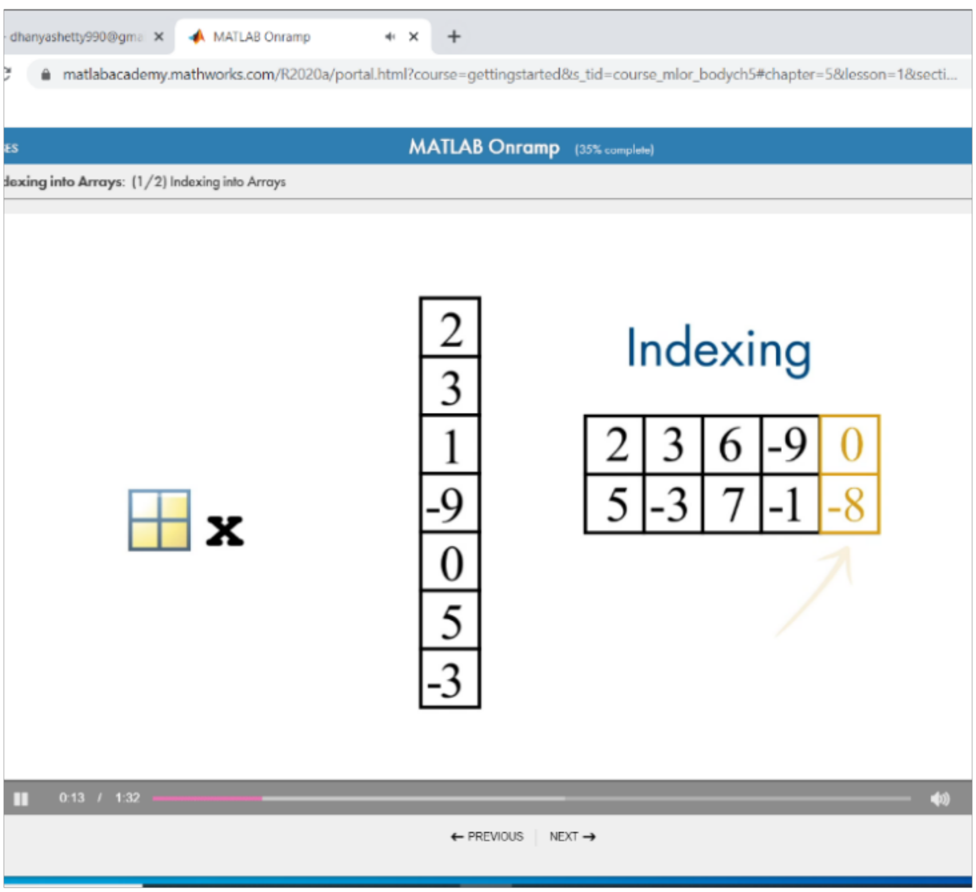
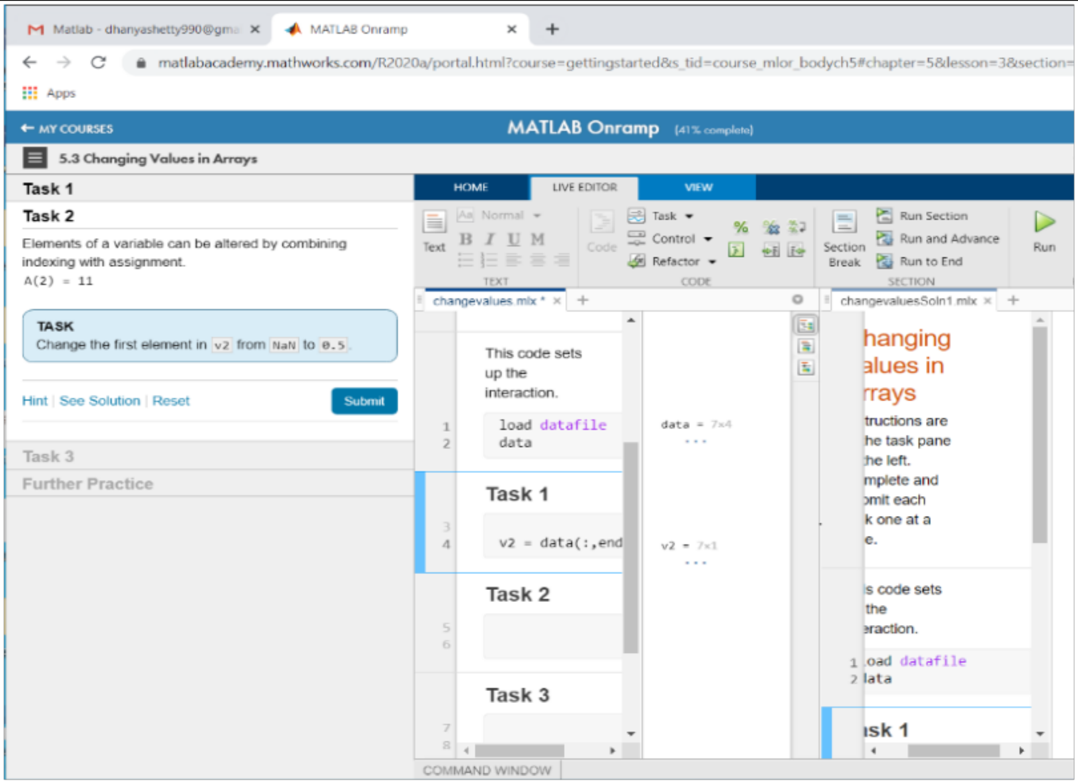
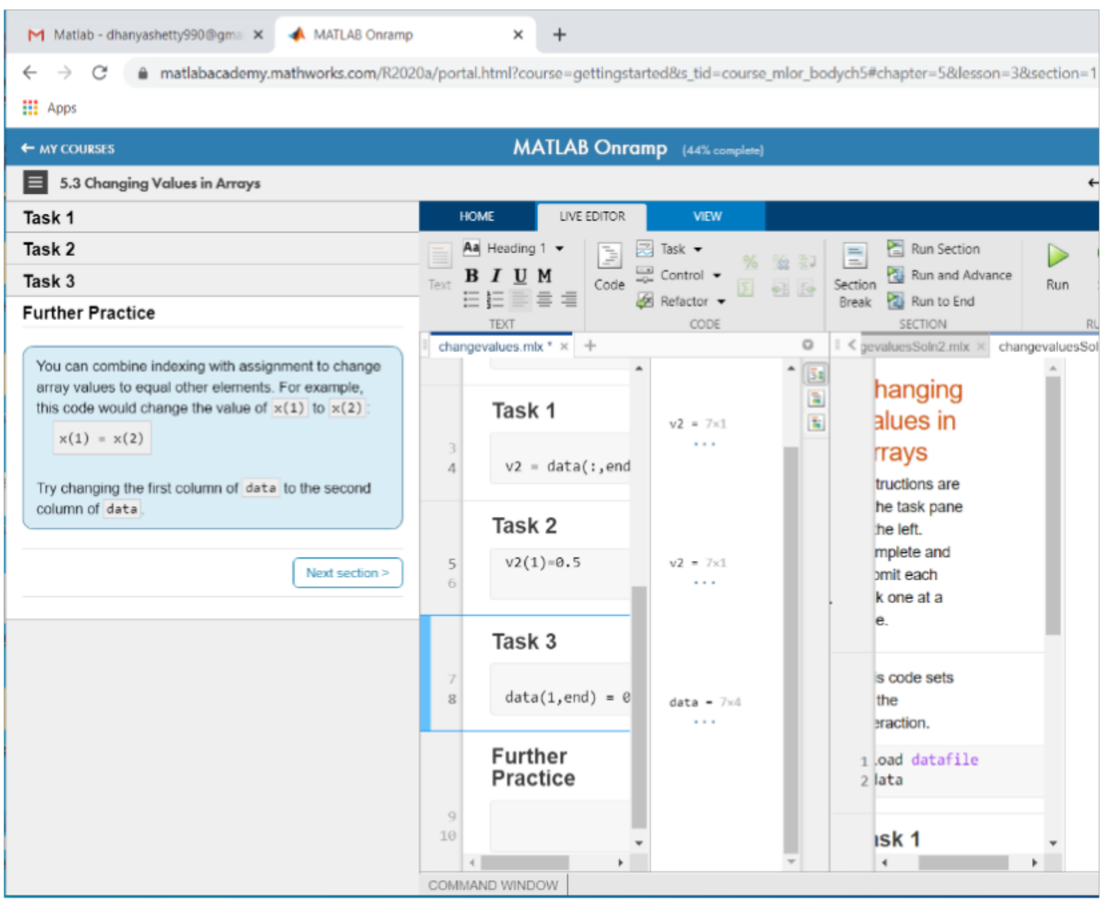
DAILY ASSESSMENT FORMAT

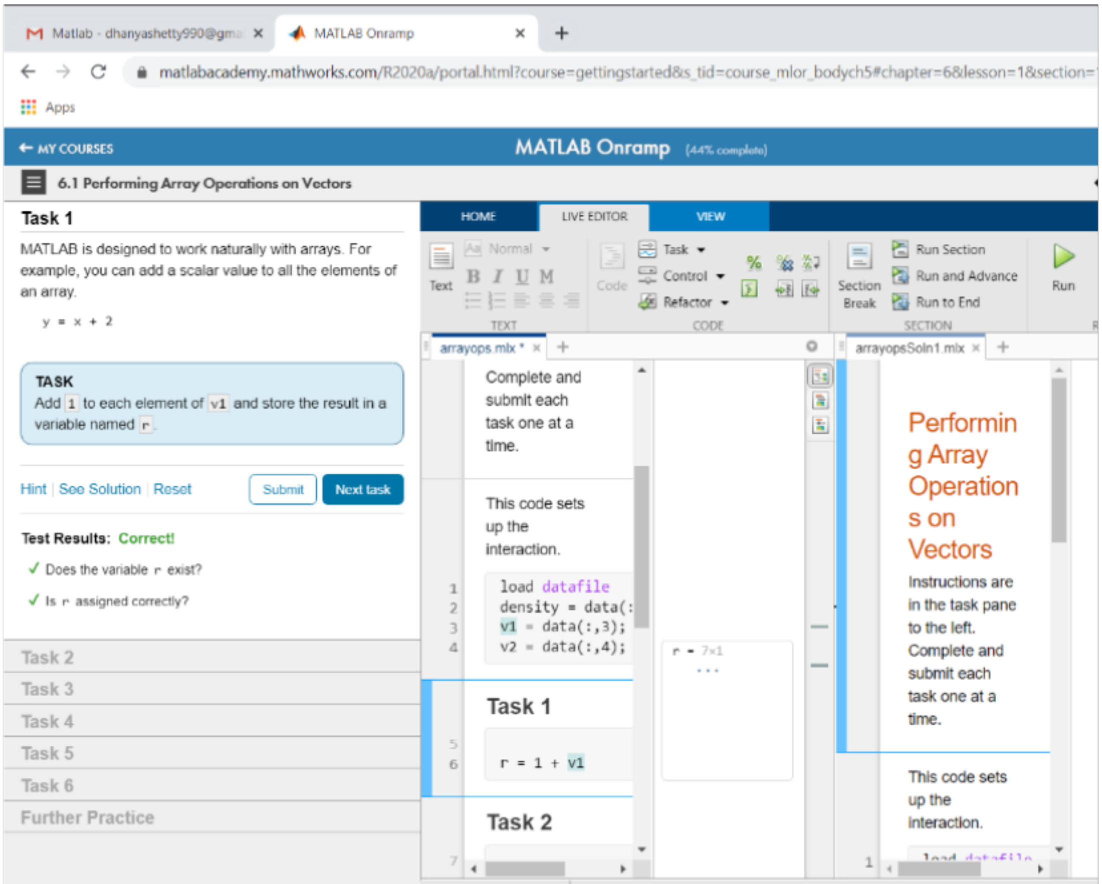
Date:	07-07-2020	Name:	Roshni A B
Course:	Mat lab Onramp	USN:	4AL17EC080
Topic:	1. Indexing into and Modifying Arrays 2. Array Calculations	Semester & Section:	6^{th} SEM and 'B' section
Github Repository:	Roshni-online		

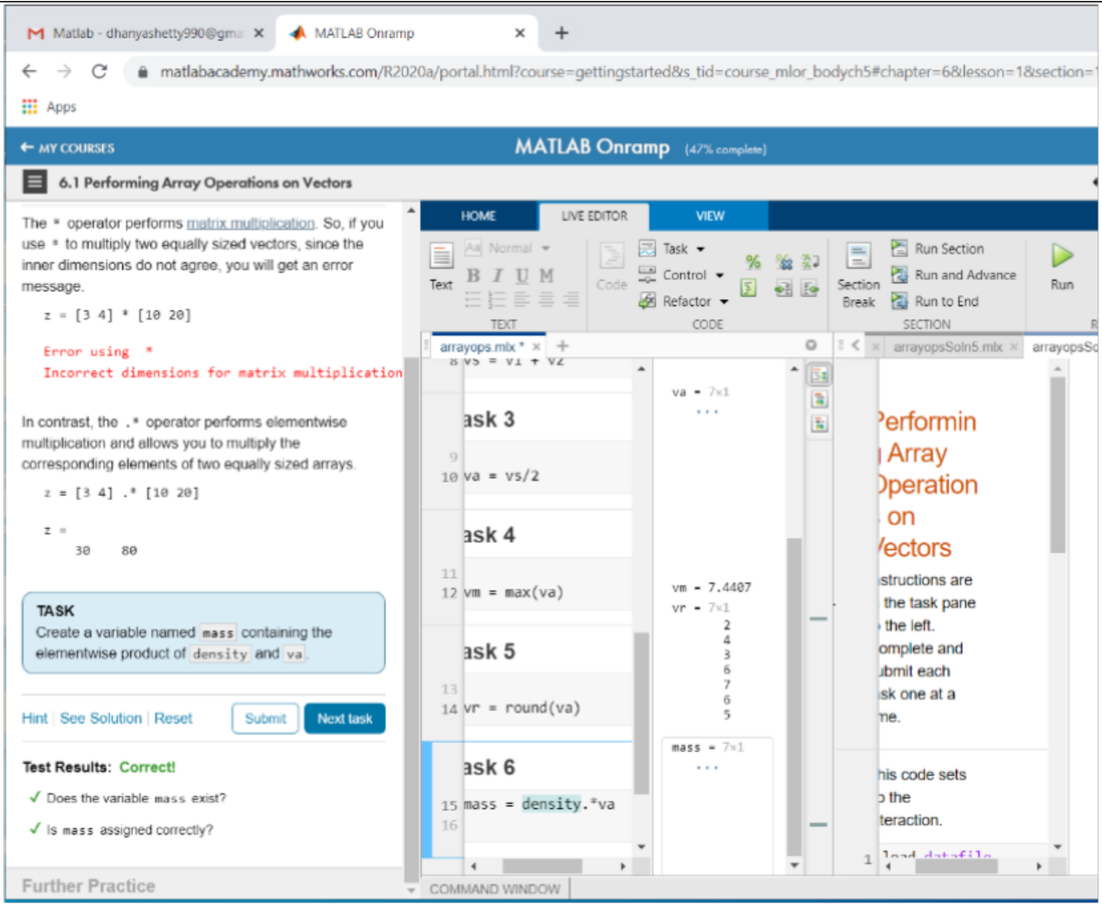
FORENOON SESSION DETAILS




MATLAB Onramp
5.3 Changing Values in Arrays
Task 1
Task 2
Elements of a variable can be altered by combining indexing with assignment.
A(2) = 11
TASK
Change the first element in v2 from NaN to 0.5.
Hint | See Solution | Reset
Submit
Task 3
Further Practice
This code sets up the interaction.
load datafile
data
Task 1
v2 = data(:,end
Task 2
Task 3
COMMAND WINDOW


MATLAB Onramp
5.3 Changing Values in Arrays
Task 1
Task 2
Task 3
Further Practice
You can combine indexing with assignment to change array values to equal other elements. For example, this code would change the value of x(1) to x(2):
x(1) = x(2)
Try changing the first column of data to the second column of data.
Next section >
Task 1
v2 = data(:,end
Task 2
v2(1)=0.5
Task 3
data(1,end) = 0
Further Practice
COMMAND WINDOW


Matlab - dhanyashetty990@gm
MATLAB Onramp
matlabacademy.mathworks.com/R2020a/portal.html?course=gettingstarted&s_tid=course_mlor_bodych5#chapter=6&lesson=1&section=
Apps
MY COURSES
MATLAB Onramp
6.1 Performing Array Operations on Vectors
Task 1
MATLAB is designed to work naturally with arrays. For example, you can add a scalar value to all the elements of an array.
y = x + 2
TASK
Add 1 to each element of v1 and store the result in a variable named r.
Hint | See Solution | Reset
Submit
Next task
Test Results: Correct!
Does the variable r exist?
Is r assigned correctly?
Task 2
Task 3
Task 4
Task 5
Task 6
Further Practice
HOME
LIVE EDITOR
VIEW
Text
Code
Task
Control
Refactor
Section Break
Run Section
Run and Advance
Run to End
Run
TEXT
CODE
SECTION
arrayops.mlx
arrayopsSoln1.mlx
Complete and submit each task one at a time.
This code sets up the interaction.
load datafile
density = data(:
v1 = data(:,3);
v2 = data(:,4);
Task 1
r = 1 + v1
Task 2
Performing Array Operations on Vectors
Instructions are in the task pane to the left. Complete and submit each task one at a time.
This code sets up the interaction.



MAT Lab :

MATLAB is a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks. MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages.

Although MATLAB is intended primarily for numerical computing, an optional toolbox uses the MuPAD symbolic engine allowing access to symbolic computing abilities. An additional package, Simulink, adds graphical multi-domain simulation and model-based design for dynamic and embedded systems.

As of 2020, MATLAB has more than 4 million users worldwide. MATLAB users come from various backgrounds of engineering, science, and economics.

Variables

Variables are defined using the assignment operator, =. MATLAB is a weakly typed programming language because types are implicitly converted. It is an inferred typed language because variables can be assigned without declaring their type, except if they are to be treated as symbolic objects, and that their type can change. Values can come from constants, from computation involving values of other variables, or from the output of a function. For example:

```
>> x = 17
x =
 17

>> x = 'hat'
x =
hat

>> x = [3*4, pi/2]
x =
   12.0000    1.5708

>> y = 3*sin(x)
y =
   -1.6097    3.0000
```

Vectors and matrices

A simple array is defined using the colon syntax: *initial*:*increment*:*terminator*. For instance:

```
>> array = 1:2:9
array =
 1 3 5 7 9
```

Defines a variable named array (or assigns a new value to an existing variable with the name array) which is an array consisting of the values 1, 3, 5, 7, and 9. That is, the array starts at 1 (the *initial* value), increments with each step from the previous value by 2 (the *increment* value), and stops once it reaches (or to avoid exceeding) 9 (the *terminator* value).

```
>> array = 1:3:9
```

```
array =

 1 4 7
```

the *increment* value can actually be left out of this syntax (along with one of the colons), to use a default value of 1.

```
>> ari = 1:5

ari =

 1 2 3 4 5
```

assigns to the variable named ari an array with the values 1, 2, 3, 4, and 5, since the default value of 1 is used as the increment.

Indexing is one-based, which is the usual convention for matrices in mathematics, unlike zero-based indexing commonly used in other programming languages such as C, C++, and Java.

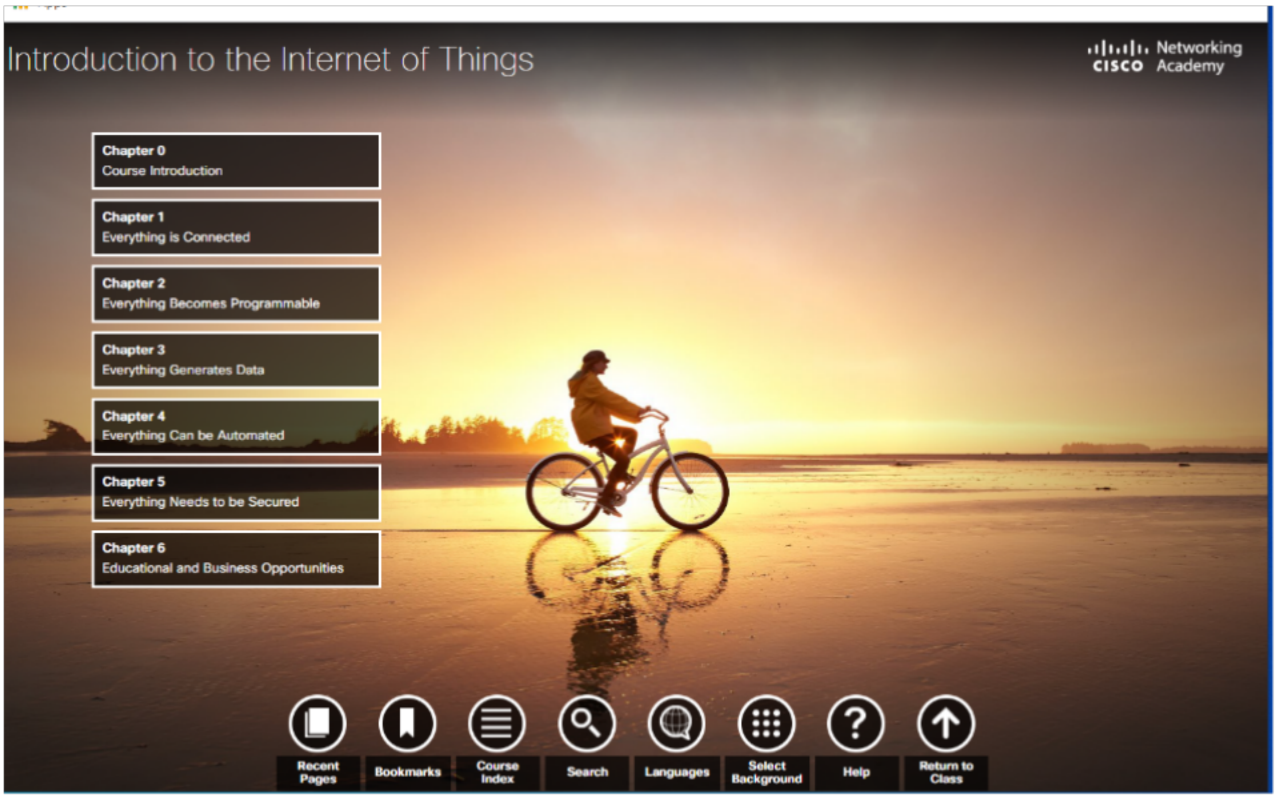
Matrices can be defined by separating the elements of a row with blank space or comma and using a semicolon to terminate each row. The list of elements should be surrounded by square brackets []. Parentheses () are used to access elements and subarrays (they are also used to denote a function argument list).

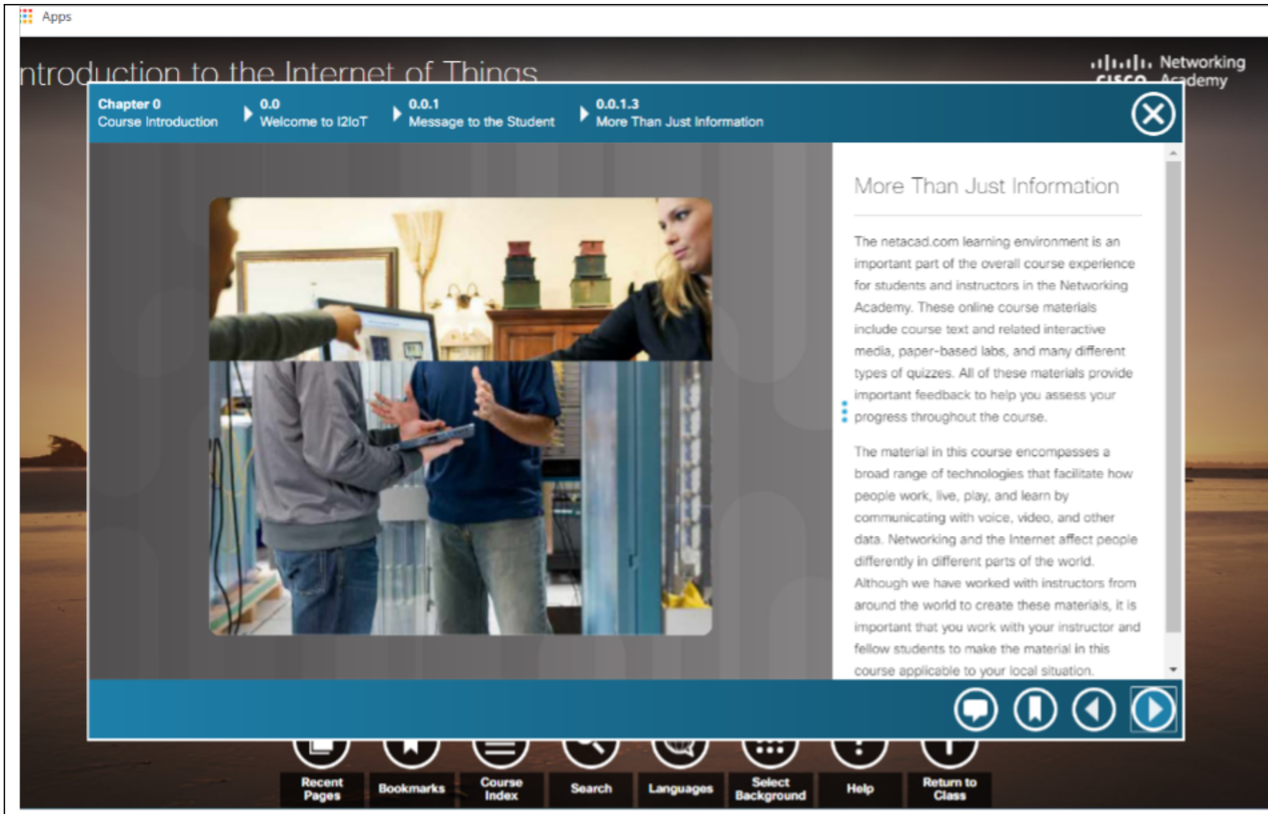
```
>> A = [16 3 2 13; 5 10 11 8; 9 6 7 12; 4 15 14 1]

A =

 16  3  2 13

  5 10 11  8

  9  6  7 12

  4 15 14  1


>> A(2,3)

ans =

 11
```

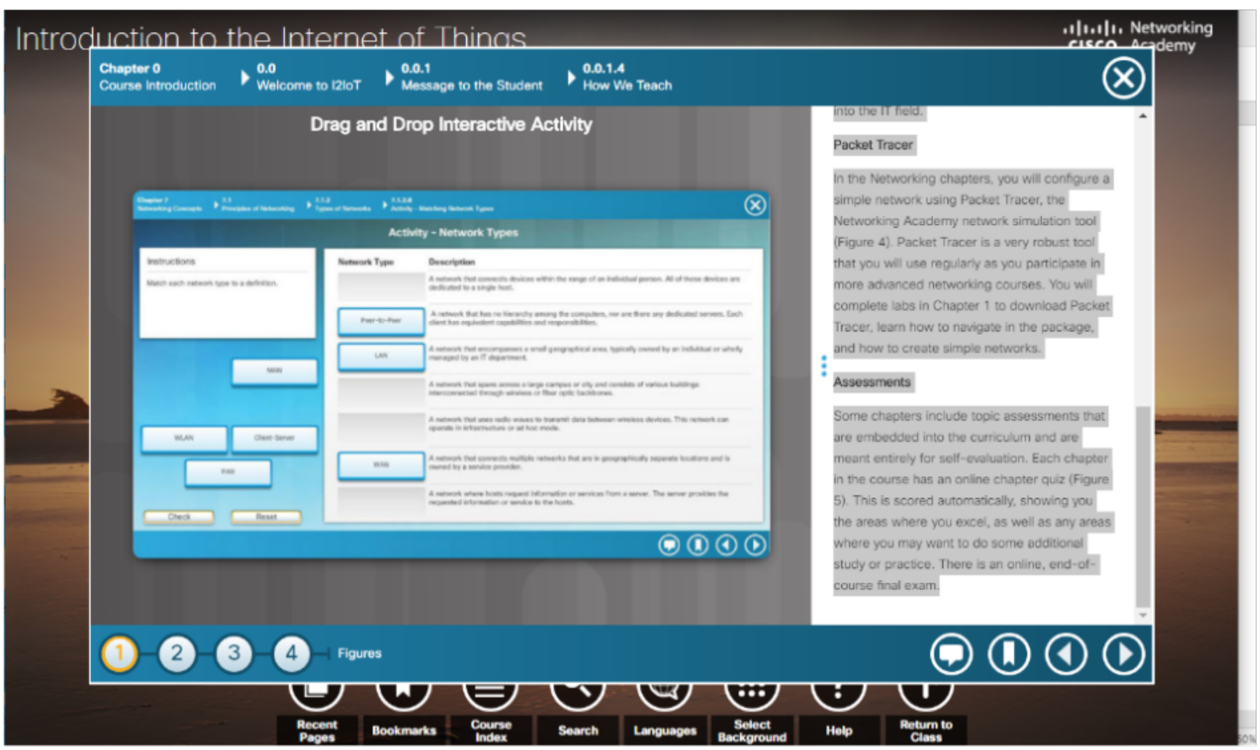
Sets of indices can be specified by expressions such as 2:4, which evaluates to [2, 3, 4]. For example, a submatrix taken from rows 2 through 4 and columns 3 through 4 can be written as:

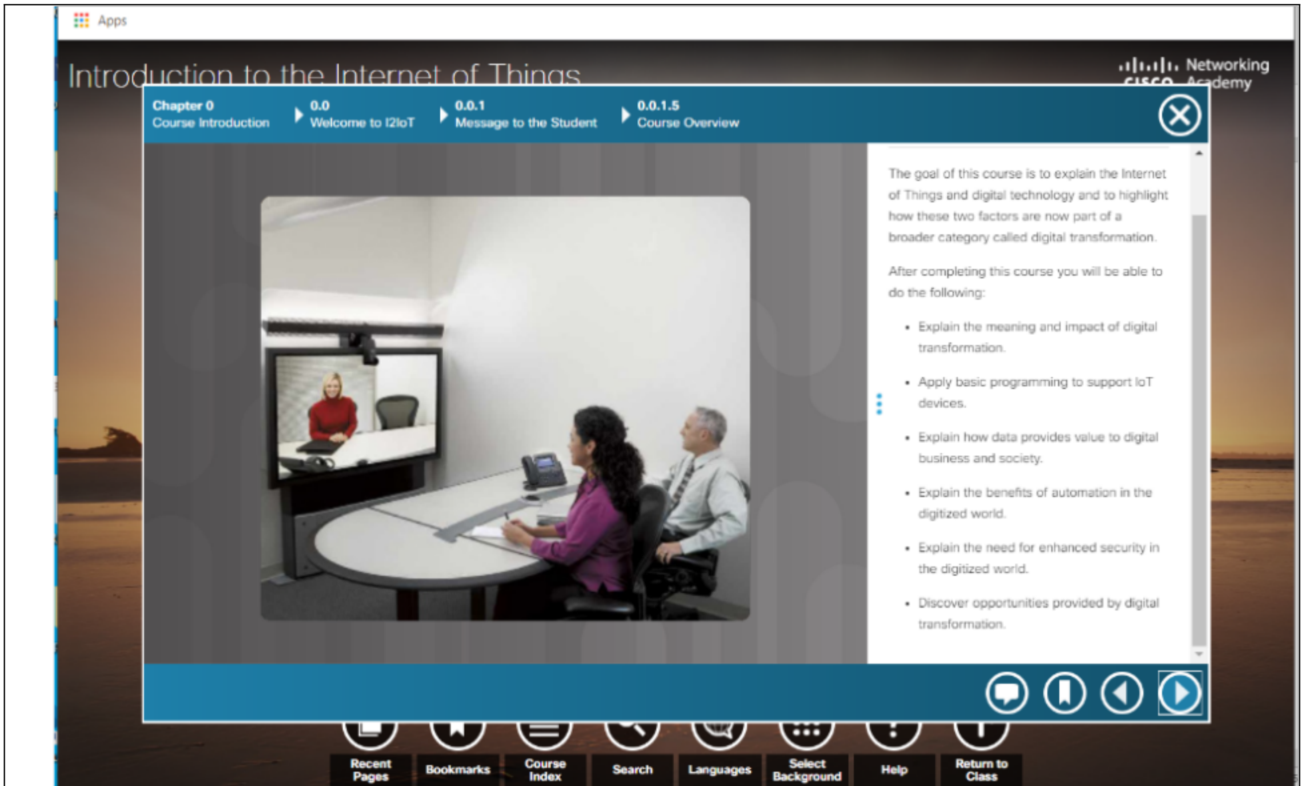
```
>> A(2:4,3:4)

ans =

 11 8

 7 12

 14 1
```

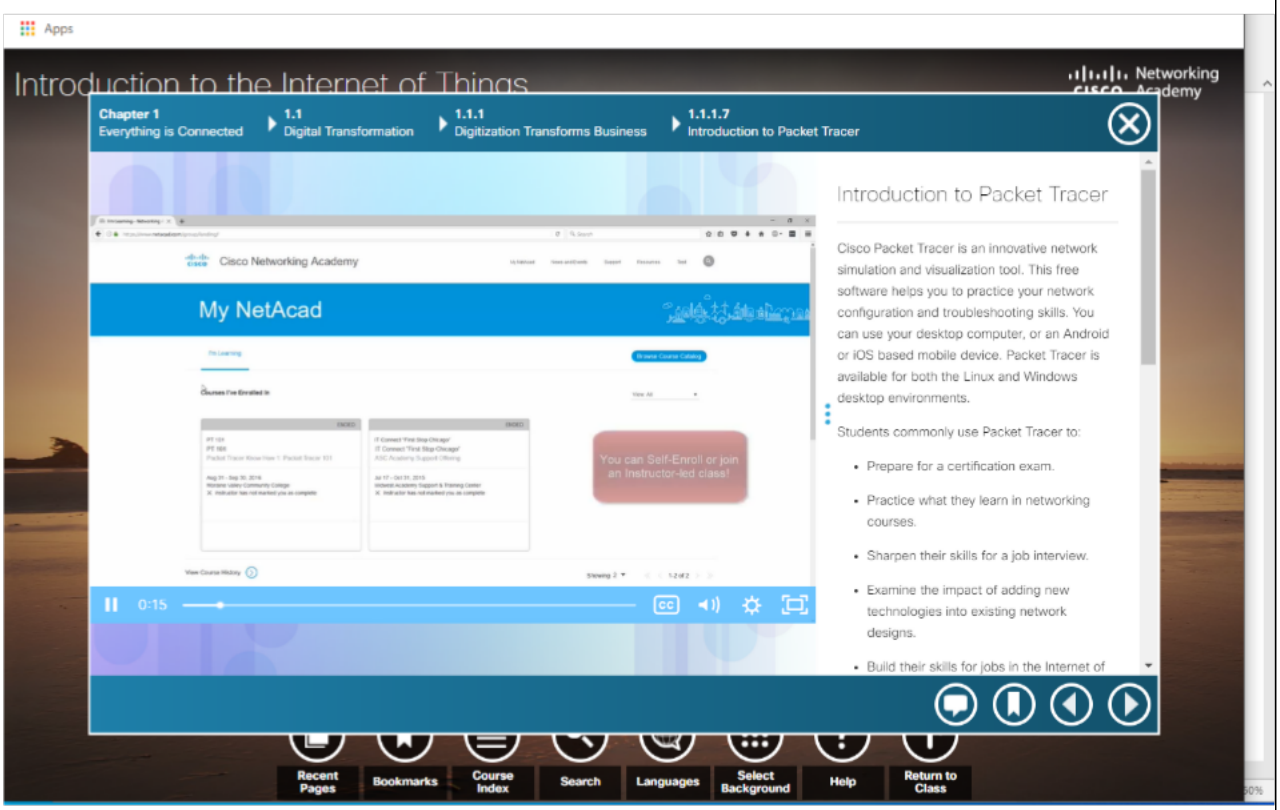
Date:	07-07-2020	Name:	Roshni A B
Course:	Introduction to Internet of Things	USN:	4AL17EC080
Topic:	Chapter 1	Semester & Section:	6th SEM and 'B' section
Github Repository:	Roshni-online		




Apps
ntroduction to the Internet of Things
Networking Academy
Chapter 0 Course Introduction
0.0 Welcome to I2IoT
0.0.1 Message to the Student
0.0.1.3 More Than Just Information
More Than Just Information
The netacad.com learning environment is an important part of the overall course experience for students and instructors in the Networking Academy. These online course materials include course text and related interactive media, paper-based labs, and many different types of quizzes. All of these materials provide important feedback to help you assess your progress throughout the course.
The material in this course encompasses a broad range of technologies that facilitate how people work, live, play, and learn by communicating with voice, video, and other data. Networking and the Internet affect people differently in different parts of the world. Although we have worked with instructors from around the world to create these materials, it is important that you work with your instructor and fellow students to make the material in this course applicable to your local situation.
Recent Pages
Bookmarks
Course Index
Search
Languages
Select Background
Help
Return to Class


Introduction to the Internet of Things
Networking Academy
Chapter 0 Course Introduction
0.0 Welcome to I2IoT
0.0.1 Message to the Student
0.0.1.4 How We Teach
Drag and Drop Interactive Activity
Activity - Network Types
into the IT field.
Packet Tracer
In the Networking chapters, you will configure a simple network using Packet Tracer, the Networking Academy network simulation tool (Figure 4). Packet Tracer is a very robust tool that you will use regularly as you participate in more advanced networking courses. You will complete labs in Chapter 1 to download Packet Tracer, learn how to navigate in the package, and how to create simple networks.
Assessments
Some chapters include topic assessments that are embedded into the curriculum and are meant entirely for self-evaluation. Each chapter in the course has an online chapter quiz (Figure 5). This is scored automatically, showing you the areas where you excel, as well as any areas where you may want to do some additional study or practice. There is an online, end-of-course final exam.
1
2
3
4
Figures
Recent Pages
Bookmarks
Course Index
Search
Languages
Select Background
Help
Return to Class


Apps
Introduction to the Internet of Things
Networking Academy
Chapter 0
Course Introduction
0.0
Welcome to I2IoT
0.0.1
Message to the Student
0.0.1.5
Course Overview
The goal of this course is to explain the Internet of Things and digital technology and to highlight how these two factors are now part of a broader category called digital transformation.
After completing this course you will be able to do the following:
Explain the meaning and impact of digital transformation.
Apply basic programming to support IoT devices.
Explain how data provides value to digital business and society.
Explain the benefits of automation in the digitized world.
Explain the need for enhanced security in the digitized world.
Discover opportunities provided by digital transformation.
Recent Pages
Bookmarks
Course Index
Search
Languages
Select Background
Help
Return to Class


Apps
Introduction to the Internet of Things
Networking Academy
Chapter 1
Everything is Connected
1.1
Digital Transformation
1.1.1
Digitization Transforms Business
1.1.1.7
Introduction to Packet Tracer
Cisco Networking Academy
My NetAcad
You can Self-Enroll or join an Instructor-led class!
0:15
Introduction to Packet Tracer
Cisco Packet Tracer is an innovative network simulation and visualization tool. This free software helps you to practice your network configuration and troubleshooting skills. You can use your desktop computer, or an Android or iOS based mobile device. Packet Tracer is available for both the Linux and Windows desktop environments.
Students commonly use Packet Tracer to:
Prepare for a certification exam.
Practice what they learn in networking courses.
Sharpen their skills for a job interview.
Examine the impact of adding new technologies into existing network designs.
Build their skills for jobs in the Internet of
Recent Pages
Bookmarks
Course Index
Search
Languages
Select Background
Help
Return to Class

What is the IoT?

The Internet of Things (IoT) is the connection of millions of smart devices and sensors connected to the Internet. These connected devices and sensors collect and share data for use and evaluation by many organizations. These organizations include businesses, cities, governments, hospitals and individuals. The IoT has been possible, in part, due to the advent of cheap processors and wireless networks. Previously inanimate objects such as doorknobs or light bulbs can now be equipped with an intelligent sensor that can collect and transfer data to a network.

Researchers estimate that over 3 million new devices are connected to the Internet each month. Researchers also estimate that in the next four years, there are going to be over 30 billion connected devices worldwide.

Perhaps a third of connected devices will be computers, smartphones, tablets, and smart TVs. The remaining two-thirds will be other kinds of “things”: sensors, actuators, and newly invented intelligent devices that monitor, control, analyse, and optimize our world.

Some examples of intelligent connected sensors are: smart doorbells, garage doors, thermostats, sports wearables, pacemakers, traffic lights, parking spots, and many others. The limit of different objects that could become intelligent sensors is limited only by our imagination.

The netacad.com learning environment is an important part of the overall course experience for students and instructors in the Networking Academy. These online course materials include course text and related interactive media, paper-based labs, and many different types of quizzes. All of these materials provide important feedback to help you assess your progress throughout the course.

The material in this course encompasses a broad range of technologies that facilitate how people work, live, play, and learn by communicating with voice, video, and other data. Networking and the Internet affect people differently in different parts of the world. Although we have worked with instructors from around the world to create these materials, it is important that you work with your instructor and fellow students to make the material in this course applicable to your local situation.

E-doing is a design philosophy that applies the principle that people learn best by doing. The curriculum includes embedded, highly interactive e-doing activities to help stimulate learning, increase knowledge retention, and make the whole learning experience much richer – and that makes understanding the content much easier.

Interactive Activities

Interactive activities are embedded within the chapters as checks for understanding. Some of these use “drag and drop” to complete the activity (Figure 1). Others use a “checkbox” method to complete them (Figure 2). You can check your score immediately. You can also reset and do the activity as many times as you like.

Labs

Labs are activities that are designed to be performed on physical equipment (Figure 3). Some labs are written as class or small group activities that may or may not involve equipment. It is very important to learn and practice physical skills by using the labs in this course in preparation for a career in IT. Working on physical equipment not only develops skills, but also reinforces knowledge and builds confidence. This is very important as you move into the IT field.

Packet Tracer

In the Networking chapters, you will configure a simple network using Packet Tracer, the Networking Academy network simulation tool (Figure 4). Packet Tracer is a very robust tool that you will use regularly as you participate in more advanced networking courses. You will complete labs in Chapter 1 to download Packet Tracer, learn how to navigate in the package, and how to create simple networks.

Assessments

Some chapters include topic assessments that are embedded into the curriculum and are meant entirely for self-evaluation. Each chapter in the course has an online chapter quiz (Figure 5). This is scored automatically, showing you the areas where you excel, as well as any areas where you may want to do some additional study or practice. There is an online, end-of-course final exam.

The Evolution of Digital Transformation

In our world today, there are more smart devices than there are people. A growing number of people are connected to the Internet, in one way or another, 24 hours a day. An ever-increasing number of people have, and rely on, three, four, or more smart devices. These might include smartphones, exercise and health monitors, e-readers, and tablets. As shown in Figure 1, by 2020, it is forecast that each consumer will have an average of 6.58 smart devices.

How is it possible for so many devices to be connected?

Modern digital networks make all of this possible. The world is quickly being covered with networks that allow digital devices to interconnect and transmit. Think of the mesh of networks like a digital skin surrounding the planet, as illustrated in Figure 2. With this digital skin, mobile devices, electronic sensors, electronic measuring devices, medical devices, and gauges are all able to connect. They monitor, communicate, evaluate, and in some cases automatically adjust to the data that is being collected and transmitted.

As society embraces these digital devices, as digital networks continue to grow around the world, and as the economic benefits of digitization continue to grow, we are seeing a digital transformation. Digital transformation is the application of digital technology to provide the stage for business and industry to innovate. This digital innovation is now being applied to every aspect of human society.

Packet Tracer – Deploying and Cabling Devices

Since Packet Tracer simulates networks and network traffic, the physical aspects of these networks also need to be simulated. This includes actually finding and deploying physical devices, customizing those devices, and cabling those devices. After the physical deployment and cabling is done, then it is time for configuration of the interfaces used to connect the devices.

Finding a device to deploy requires looking in the Device-Type Selection Box. The Device-Type Selection Box works on the concept of categories and sub-categories as shown in the figure.

The top row of icons represents the category list consisting of: [Networking Devices], [End Devices], [Components], [Connections], [Miscellaneous], and [Multiuser]. Each category contains at least one sub-category group.

Networking is the Foundation

Thirty billion things provide trillions of gigabytes of data. How can they work together to enhance our decision-making and improve our lives and our businesses? Enabling these connections are the networks that we use daily. These networks provide the foundation for the Internet and the digitized world.

The methods that we use to communicate continue to evolve. Whereas we were once limited by cables and plugs, breakthroughs in wireless and digital technology have significantly extended the reach of our communications.

Networks form the foundation of the digitized world. Networks come in all sizes. They can range from simple networks consisting of two computers to networks connecting millions of devices.

Simple networks in homes enable connectivity to the Internet. They also enable the sharing of resources, such as printers, documents, pictures, and music, between a few local computers.

In businesses and large organizations, networks can provide products and services to customers through their connection to the Internet. Networks can also be used on an even broader scale to provide consolidation, storage, and access to information on network servers. Networks allow for email, instant messaging, and collaboration among employees. In addition, the network enables connectivity to new places, giving machines more value in industrial environments.

The Internet is the largest network in existence and effectively provides the “electronic skin” that surrounds the planet. In fact, the term Internet means a “network of networks”. The Internet is literally a collection of interconnected private and public networks. Businesses, small office networks, and home networks connect to the Internet.