DAILY ASSESSMENT REPORT

Date:	07 July 2020	Name:	Gagan M K
Course:	Matlab Onramp	USN:	4AL17EC032
Topic:	• Indexing into and Modifying Arrays • Array Calculations	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:

- Extract values from an array using row, column indexing.
  y = A (5,7)
- This syntax extracts the value in the 5th row and 7th column of A and assigns the result to the variable y
- Use the MATLAB keyword end as either a row or column index to reference the last element.
  y = A(end,2)
- When used as an index, the colon operator (:) specifies all the elements in that dimension. The syntax
  x = A(2,:)
  Creates a row vector containing all of the elements from the second row of A.
- The colon operator can refer to a range of values. The following syntax creates a matrix containing the first, second, and third rows of the matrix A.
  x = A (1:3, :)
- A single index value can be used to reference vector elements. For example
  x = v(3)
- Returns the third element of vector v when v is either a row or column vector.
- A single range of index values can be used to reference a subset of vector elements. For example
  x = v(3:end)
- returns a subset of vector v containing the elements from 3 to the end
- Elements of a variable can be altered by combining indexing with assignment.
  A(2) = 11
- Basic statistical functions in MATLAB can be applied to a vector to produce a single output. The maximum value of a vector can be determined using the max function.
  xMax = max(x)
- The size function can be applied to an array to produce a single output variable containing the array size.
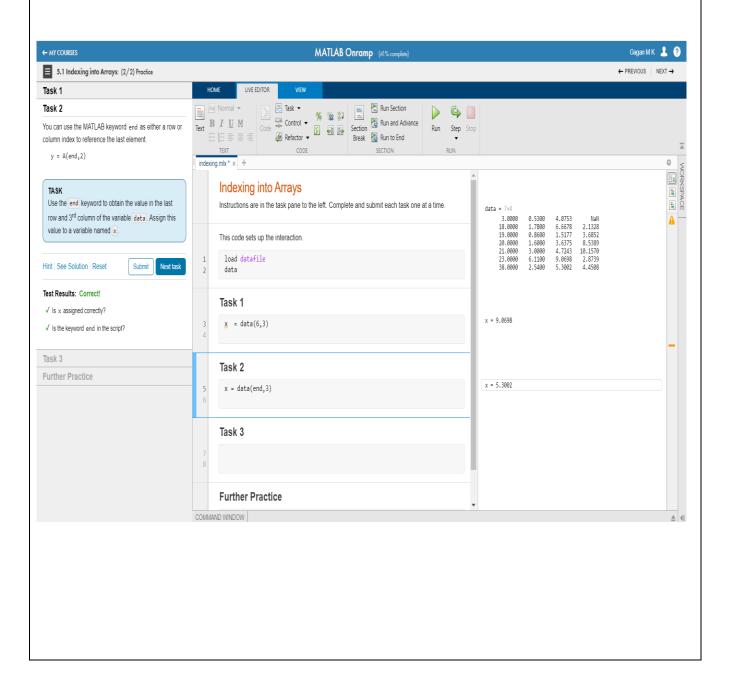 s = size(x)
- The size function can be applied to a matrix to produce either a single output variable or two output variables. Use square brackets ([ ]) to obtain more than one output.
  [xrow,xcol] = size(x)
- The maximum value of a vector and its corresponding index value can be determined using the max function. The first output from the max function is the maximum value of the input vector. When called with two outputs, the second output is the index value.
  [xMax,idx] = max(x)
- Two vectors of the same length can be plotted against each other using the plot function.
  plot(x,y)
- The plot function accepts an additional argument that allows you to specify the color, line style, and marker style using different symbols in single quotes.

plot(x,y,"r--o")

- **The command above plots a red (r) dashed (--) line with a circle (o) as a marker. You can learn more about the symbols available in the documentation for Line Specification**
- **The plot function accepts optional additional inputs consisting of a property name and an associated value.**
  plot(y,"LineWidth",5)
- **The command above plots a heavy line**
- **Labels can be added to plots using plot annotation functions, such as title. The input to these functions is a string. Strings in MATLAB are enclosed in double quotes (").**
  title("Plot Title")

Task 1

Task 2

You can use the MATLAB keyword end as either a row or column index to reference the last element.

```
y = A(end,2)
```

TASK
Use the end keyword to obtain the value in the last row and 3rd column of the variable data. Assign this value to a variable named x.

Hint | See Solution | Reset   Submit   Next task

Test Results: Correct!
✓ Is x assigned correctly?
✓ Is the keyword end in the script?

Task 3

Further Practice

HOME   LIVE EDITOR   VIEW

Text | Normal | 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

indexing.mlx * × +

Indexing into Arrays

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

This code sets up the interaction.

```
1   load datafile
2   data
```

Task 1

```
3   x = data(6,3)
4
```

Task 2

```
5   x = data(end,3)
6
```

Task 3

```
7
8
```

Further Practice

COMMAND WINDOW

```
data = 7×4
    3.0000    0.5300    4.0753       NaN
   18.0000    1.7800    6.6678    2.1328
   19.0000    0.8600    1.5177    3.6852
   20.0000    1.6000    3.6375    8.5389
   21.0000    3.0000    4.7243   10.1570
   23.0000    6.1100    9.0698    2.8739
   38.0000    2.5400    5.3002    4.4508
```

```
x = 9.0698
```

```
x = 5.3002
```

WORKSPACE

Date:	07 July 2020	Name:	Gagan M K
Course:	Introduction to Internet of Things	USN:	4AL17EC032
Topic:	• Chapter 2	Semester & Section:	6th sem & 'A' sec

AFTERNOON SESSION DETAILS
Image of session:

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

- There are two common types of computer software: system software and application software.
- Application software programs are created to accomplish a certain task or collection of tasks.
- For example, Cisco Packet Tracer is a network simulation program that allows users to model complex networks and ask "what if" questions about network behavior.
- System software works between the computer hardware and the application program. It is the system software that controls the computer hardware and allows the application programs to function. Common examples of system software include Linux, Apple OSX, and Microsoft Windows
- Programming languages utilize variables as dynamic buckets to hold phrases, numbers, or other important information that can be used in coding. Instead of repeating specific values in numerous places throughout the code, a variable can be used. Variables can hold the result of a calculation, the result of a database query, or some other value. This means that the same code will function using different pieces of data without having to be rewritten.
- Blockly is a visual programming tool created to help beginners understand the concepts of programming. By using a number of block types, Blockly allows a user to create a program without entering any lines of code. This is shown in Figure 1.
- Blockly implements visual programming by assigning different programming structures to colored blocks.
- The blocks also contain slots and spaces to allow programmers to enter values required by the structure.
- Programmers can connect programming structures together by dragging and attaching the appropriate blocks. Programming structures such as conditionals, loops, and variables are all available for use.
- Google provides a series of free and open source educational games that can help you learn programming. The series is called Blockly Games.
- To learn more about Blockly Games, or to try it yourself, click here.
- There are a number of levels to complete to help you get started.
- Blockly may look like a toy, but it is a great tool to improve your logical thinking skills, which is one of the building blocks of computer programming
- Python is an interpreted language; therefore, an interpreter is required to parse and execute Python code.
- The Python interpreter understands and executes Python code. Python code can be created in any text editor and Python interpreters are available for many operating systems.
- Python developers can create and deploy Python programs in practically any operating system.
- Third party tools such as Py2exe and Pyinstaller can also be used to package the Python source code into an executable file, eliminating the need for the Python interpreter when running Python code