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| **Date:** | **09-07-2020** | **Name:** | **Yalpi Nandika** |
| **Course:** | **Mat lab Onramp** | **USN:** | **4AL17EC096** |
| **Topic:** | **Review Problems**  **Importing data** | **Semester & Section:** | **6th sem, B section** |
| **Github Repository:** | **Yalpi-Online-Courses** |  |  |

**DAILY ASSESSMENT FORMAT**

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| **FORENOON SESSION DETAILS** |
| **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](https://en.wikipedia.org/wiki/MuPAD) [symbolic engine](https://en.wikipedia.org/wiki/Computer_algebra_system) allowing access to [symbolic computing](https://en.wikipedia.org/wiki/Symbolic_computing) abilities. An additional package, [Simulink](https://en.wikipedia.org/wiki/Simulink), adds graphical multi-domain simulation and [model-based design](https://en.wikipedia.org/wiki/Model-based_design) for [dynamic](https://en.wikipedia.org/wiki/Dynamical_system) and [embedded systems](https://en.wikipedia.org/wiki/Embedded_system).  As of 2020, MATLAB has more than 4 million users worldwide. MATLAB users come from various backgrounds of [engineering](https://en.wikipedia.org/wiki/Engineering), [science](https://en.wikipedia.org/wiki/Science), and [economics](https://en.wikipedia.org/wiki/Economics).  **Variables**  Variables are defined using the assignment operator, =. MATLAB is a [weakly typed](https://en.wikipedia.org/wiki/Strong_and_weak_typing) 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](https://en.wikipedia.org/wiki/Constant_(computer_science)), from computation involving values of other variables, or from the output of a function.   |  |  |  |  | | --- | --- | --- | --- | | **Date:** | **09-07-2020** | **Name:** | **Yalpi Nandika** | | **Course:** | **Introduction to Internet of Things** | **USN:** | **4AL17EC096** | | **Topic:** |  | **Semester & Section:** | **6th Sem ,B sec** | | **Github Repository:** | **Yalpi-Online -Course** |  |  |       **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.  **Lab - Create a Process Flowchart**  Flowcharts are normally used to diagrammatically illustrate the process flow before a computer program is created. In this lab you will create a simple flowchart showing the process used to find a predetermined integer value.  What is Blockly?  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.  Blockly implements visual programming by assigning different programming structures to coloured 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.  Creating a new variable in Blockly is a simple matter of dragging the variable block onto the work space and filling in the value slot. It is also possible to change the contents of a variable as the program is being executed.  Blockly also supports functions. Similar to the variables, Blockly has specific blocks to represent functions. Also similar to variables, programmers simply select and drag function blocks to the work space and fill in the required slots.  Notice in Figures 1 and 2 that the variable block and the print on screen block both have a bevel tab on the bottom and a slot on the top. This means that the two blocks can be snapped together to create a program sequence. Blockly will execute the block on the top first, then move on to the block below it.  Other blocks are available such as an IF THEN block, a WHILE block and a FOR block. There are also blocks specifically for sensors and actuators.  Blockly can be used to translate the block-based code into Python or JavaScript. This is very useful to beginner programmers.  Blockly Games  Google provides a series of free and open source educational games that can help you learn programming. The series is called Blockly Games.  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.  Packet Tracer - Blinking an LED Using Blockly  Cisco Packet Tracer has incorporated Blockly as one of the programming languages available in its IoT functionality. In this lab you will control the blink rate of an LED using Blockly code.  What is Python?  Python is a very popular language that is designed to be easy to read and write. Python’s developer community adds value to the language by creating all types of modules and making them available to other programmers.  The core philosophy of the language is summarized by the document [The Zen of Python](https://www.python.org/dev/peps/pep-0020/):   * Beautiful is better than ugly * Explicit is better than implicit * Simple is better than complex * Complex is better than complicated * Readability counts   Despite the fact Python is designed to be easy, there is still a learning curve. To make it easier to learn Python, a beginner can use blocky to enhance his or her Python understanding.  While different programming languages have different semantics and syntax, they all share the same programming logic. Beginners can use Blackly to easily create a language-independent program, export it as Python code and use this newly created code to learn about Python syntax, structure and semantics. |

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