**DAILY ASSESSMENT FORMAT**

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| **Date:** | **06/07/2020** | **Name:** | **Namratha S Hipparagi** |
| **Course:** | **Matlab** | **USN:** | **4AL16EC040** |
| **Topic:** | **Commands**  **Arrays** | **Semester & Section:** | **8 A** |
| **Github Repository:** | **namrathahipparagi\_1** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session** |
| **Report**  MATLAB is a programming platform designed specifically for engineers and scientists. MATLAB combines a desktop environment tuned for iterative analysis and design processes with a programming language that expresses matrix and array mathematics directly. MATLAB is an interactive program for numerical computation and data visualization. You can enter a command by typing it at the MATLAB prompt '>>' on the Command Window. Commands for Managing a Session MATLAB provides various commands for managing a session. The following table provides all such commands −   |  |  | | --- | --- | | **Command** | **Purpose** | | clc | Clears command window. | | clear | Removes variables from memory. | | exist | Checks for existence of file or variable. | | global | Declares variables to be global. | | help | Searches for a help topic. | | lookfor | Searches help entries for a keyword. | | quit | Stops MATLAB. | | who | Lists current variables. | | whos | Lists current variables (long display). |  Input and Output Commands MATLAB provides the following input and output related commands −   |  |  | | --- | --- | | **Command** | **Purpose** | | disp | Displays contents of an array or string. | | fscanf | Read formatted data from a file. | | format | Controls screen-display format. | | fprintf | Performs formatted writes to screen or file. | | input | Displays prompts and waits for input. | | ; | Suppresses screen printing. |   The **fscanf** and **fprintf** commands behave like C scanf and printf functions. They support the following format codes −   |  |  | | --- | --- | | **Format Code** | **Purpose** | | **%s** | Format as a string. | | **%d** | Format as an integer. | | **%f** | Format as a floating point value. | | **%e** | Format as a floating point value in scientific notation. | | **%g** | Format in the most compact form: %f or %e. | | **\n** | Insert a new line in the output string. | | **\t** | Insert a tab in the output string. |   **Vectors and matrices**  In MATLAB a vector is a matrix with either one row or one column. MATLAB vectors are used in many situations, e.g., creating x-y plots, that do not fall under the rubric of linear algebra. In these contexts a vector is just a convenient data structure. Vectors and matrices combine separate scalar data into a single, multidimensional signal. Modify individual elements or perform arithmetic on entire vectors and matrices. In C charts, use MATLAB® functions to perform standard matrix multiplication and division. Array Creation Every variable in MATLAB® is an array that can hold many numbers. When you want to access selected elements of an array, use indexing.  For example, consider the 4-by-4 magic square A:  A = magic(4)  A = *4×4*  16 2 3 13  5 11 10 8  9 7 6 12  4 14 15 1  To create an array with four elements in a single row, separate the elements with either a comma (,) or a space.  a = [1 2 3 4]  a = 1×4  1 2 3 4  This type of array is a row vector.  To create a matrix that has multiple rows, separate the rows with semicolons.  a = [1 2 3; 4 5 6; 7 8 10]  a = 3×3  1 2 3  4 5 6  7 8 10  Another way to create a matrix is to use a function, such as ones, zeros, or rand. For example, create a 5-by-1 column vector of zeros.  z = zeros(5,1)  z = 5×1  0  0  0  0  0 Matrix and Array Operations MATLAB allows you to process all of the values in a matrix using a single arithmetic operator or function.  a + 10  ans = 3×3  11 12 13  14 15 16  17 18 20  sin(a)  ans = 3×3  0.8415 0.9093 0.1411  -0.7568 -0.9589 -0.2794  0.6570 0.9894 -0.5440 |