**DAILY ASSESSMENT FORMAT**

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| **Date:** |  | **Name:** |  |
| **Course:** |  | **USN:** |  |
| **Topic:** |  | **Semester & Section:** |  |
| **Github Repository:** |  |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session** |
| **Report – Report can be typed or hand written for up to two pages.** |

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| **Date:** |  | **Name:** |  | |
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| **AFTERNOON SESSION DETAILS** | | | |
| **Image of session** | | | |
| **Report**  **Programming**  **Flowcharts**  **Flowcharts are used in many industries including engineering, physical sciences, and computer programming where a complete understanding of processes or workflows is required. Flowcharts are diagrams that are used to represent these processes or workflows.**  **Flowcharts illustrate how a process should work. Flowcharts should not require complex, industry-specific terminology or symbols. A flowchart should be easy to understand without having to be an expert in the chosen field.**  **Flowcharts should show input states, any decisions made, and the results of those decisions. It is important to show the steps that should be taken when the result of a decision is either yes or no.**  **It is common for programmers to create a first draft of a program in no specific programming language. These language-independent programs are focused on the logic rather than in the syntax and are often called algorithms. A flowchart is a common way to represent an algorithm. An example of a flowchart.**  **Blockly**  **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. 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.**  **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.**  **Programming in 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:**   * **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 Blockly 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 Blockly 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.** | | | |