Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time.

Our Staff will be continuously, **sending notes and exercises on a weekly basis** through **what's app and emails**. Students are requested to **copy the notes and do the exercises** on their copybooks.
The answers to the questions below will be made available on our website on **knowledgeplus.mu/support.php.**

Please note that these are extra work and notes that we are providing our students and **all classes will be replaced during the winter vacation.**
We thank you for your trust and are convinced that, together, we will overcome these troubled times

Information

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Information System – Week 2

Algorithm

- It is a list of instructions specifying a precise description of a step by step process that terminates after a finite number of steps for solving an algorithm problem producing the correct answer in the end.
- It is a recipe for solving problems.
- A finite set of an instruction that specifies a sequence of operation to be carried out in order to solve a specific problem.
- An unambiguous procedure specifying a finite number of steps to be taken.

METHODS OF SPECIFYING ALGORITHM

- **Pseudocode** - specifies the steps of algorithm using essentially natural language of superimposed control structure.
- **Flowchart** - a traditional graphical tool with standardized symbols. Show the sequence of steps in an algorithm.

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PROPERTIES OF ALGORITHM

- **Finiteness** - there is an exact number of steps to be taken and has an end.
- **Absence of Ambiguity** - means that every instruction is precisely described and clearly specified.
- **Sequence of Execution** - instructions are performed from top to bottom.
- **Input and Output** - defined the unknowns of the problem is specified and with the expected outcome.
- **Effectiveness** - the solution prescribed is guaranteed to give a correct answer and that the specified process is faithfully carried out.
- **Scope Definition** - applies to a specific problem or class of problem.

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Steps in Program Development

1. **State the problem clearly**- a problem cannot be solved correctly unless it is being understood.
2. **Plan and Write the Logical Order of Instructions** - the computer follows the direction exactly at the given sequence.
3. **Code the Program** - write the programming statements in the desired language.
4. **Enter the program into the computer** - key in or type the statement into the computer.
5. **Run and Debug the program** - check if you have the desired output; if not, trace the possible error.

Flowcharting Guidelines

1. The flowchart should flow from top to bottom
2. If the chart becomes complex, utilize connecting blocks
3. Avoid intersecting flow lines
4. Use meaningful description in the symbol

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SAMPLE EXERCISES

Sample 1: Write a program that calculates the sum of two input numbers and display the result.

Sample 2: Write a program to calculate the area of a circle and display the result. Use the formula: $A=\pi r^2$ where Pi is approximately equal to 3.1416.

Sample 3: Write a program that computes the average of three input quizzes, and then display the result.

Sample 4: Write a program that converts the input Fahrenheit degree into its Celsius degree equivalent. Use the formula: C= (5/9)*F-32.

Sample 5: Create a program to compute the volume of a sphere. Use the formula: $V= (4/3)^* \pi r^3$ where is pi equal to 3.1416 approximately. The r^3 is the radius. Display result.

Sample 6: Write a program that converts the input Celsius degree into its equivalent Fahrenheit degree. Use the formula: F= (9/5) * C+32.