**FPTAptech-LBEP-T2403M**

**Elementary Programming with C**

**SESSION 1**

* **Software** is a set of **programs**.
* A **Program** is a set of **instructions**.
* **Code blocks**, form a base of any C program.
* The C language has **32 keywords**.
* Steps involved in solving a problem are **studying the problem in detail, gathering the relevant information, processing the information and arriving at the results**.
* An **Algorithm** is a logical and concise list of steps to solve a problem. Algorithms are written using **pseudo codes** or **flowcharts**.
* A **pseudo code** is a representation of an algorithm in language that **resembles code**.
* A **flowchart** is a **diagrammatic representation** of an algorithm.
* Flowcharts can be broken into parts and connectors can be used to indicate the location of the joins.
* When we **come across a condition** based on which the path of execution may branch. Such constructs are referred to as **selection, conditional or branching constructs**.
* The basic selection construct is an **‘IF’ construct**.
* The **IF …ELSE construct** enables the programmer to make a single comparison and then execute the steps depending on whether the result of the comparison is **True or False**.
* A nested IF is an IF inside another IF statement.
* Often it is necessary to **repeat certain steps** a specific number of times or till some specified condition is met. The constructs, which achieve these, are known as **iterative or looping constructs**.

**CHECK YOUR PROGRESS**

* C allows **Code Blocks** of code and data.
* A **flowchart** is a diagrammatic representation that illustrates the sequence of operations to be performed to arrive at a solution.
* Flowcharts help us review and debug programs easily. (**True** / False)
* A flowchart can have any number of start and stop points. (True / **False**)
* A **IF …ELSE** **construct (**‘**IF**’ **construct)** is basically the execution of a sequence of statements until a particular condition is True or False.

**TRY IT YOURSELF**

1. *Write a pseudo code and draw a flowchart to accept a value in degrees Celsius and to convert it into Fahrenheit. [Hint: C/5 = (F-32)/9]*

**pseudo code:**

**BEGIN**

**INPUT** Celsiusdegree

Fahrenheitdegree = Celsiusdegree**/**5\*9+32

**DISPLAY** Fahrenheitdegree

**END**

**Flowchart:** **A diagram of a graph

Description automatically generated**

1. *Write a pseudo code and flowchart to accept a student’s marks in Physics, Chemistry, and Biology. The total of these marks as well as the average should be displayed.*

**pseudo code:**

**BEGIN**

**INPUT** Physics

**INPUT** Chemistry

**INPUT** Biology

Total = Physics+ Chemistry+ Biology

Avg = Total/3

**DISPLAY** Total

**DISPLAY** Avg

**END**

**Flowchart:**

A diagram of a science experiment

Description automatically generated