**Pakistan School, Kingdom of Bahrain**

**E- Support and Learning Material / Session 2020-2021**

**10th Computer Science Chapter 1 Programming Techniques**

**Lectures week2**

**Objectives:** **Students will be able define flowchart**

**Importance of flow chart**

**Steps draw flowchart, flow chart symbols**

**Flow charts to solve the problem**

**Q. define flowchart?**

* Flowchart is the diagrammatic representation of algorithm
* flowchart describes that what operations are required to solve a given problem

**Q. importance of flow charts in problem solving?**

* It illustrates the sequence of operation to be performed to solve a problem in form of diagram
* Programmer draw a flowcharts before writing program
* It provides easy way to sole and analyze the problem
* Very helpful for communicating the problem solving method to other people
* Also helpful to finding and removing errors in computer program

**Q. what are the steps to draw a flowchart?**

* Input to flowchart
* Types of processing required
* Decision to be taken
* Output to be produce after processing

**Q. describe the symbols of flowcharts?**

**Flow line**: it is a line with arrow used to show the flow of control.

**Start/stop symbols:** parallelogram used to start or stop of flowchart.

**Processing symbols:** rectangular block used for any data processing operations.

**Decision symbols:** a diamond symbols used for decision making purpose.

**Connector symbols:** these symbols are used to connect one part of flow chart to another**.**

**Flow chart symbols**

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol description** | **Symbol shape** | **Symbol description** | **Symbol shape** |
| **Flow line**  |  | **process** |  |
| **Start /stop** |  | **decision** |  |
| **Input/output** |  | **connector** |  |
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**EXAMPLES 1 FLOW CHARTS FOR FINDING SUM, PRODUCT AND AVERAGE**

STSRT

Input A, B, C, D, E

SUM=A+B+C+D+E

PROD=A\*B\*C\*D\*E

AVG=SUM/5

OUTPUT SUM, PROD, AVG

STOP

**EXAMPLES 2 FLOW CHARTS FOR TEMRATURE CONVERTIONFROM FARENHEIT TO CELSIUS**

STSRT

Input F

C=5/9(F-32)

OUTPUT C

STOP

**Assignment#3**

Write flow chart for multiplication table of given number

**Assignment #4**

Write flow chart for factorial of number calculation

**Home work**

Write flow chart for pass or fail of a students on the basis of marks

**EXERCISE RELATED QUESTIONS**

**MCQS (green is an answer)**

1. Which of the following structure repeats one or more operations?
2. Sequence B. Selection C. Loops D. Decision
3. Which of the following structures allows a choice among various options?
4. Sequence B. Selection C. Loops D. Decision
5. Which of the following is a sequence of instructions written in a computer language to solve a problem?
6. Algorithm B. Flowchart C. Program D. Problem Analysis
7. What illustrates a sequence of operations to perform to solve a problem in form of diagram?
8. Algorithm B. Flowchart C. Program D. Problem Analysis
9. What is represented by parallelogram in flow chart?
10. Input/output B. Processing C. Start/Stop D. Decision
11. What is represented by a small circle in flowchart?
12. Start/stop B. Decision C. Processing D. Connector
13. Which symbol is used for decision in flow chart?
14. Rectangle B. Parallelogram C. Diamond D. Oval
15. Which symbol is used for decision in flow chart?
16. Rectangle B. Parallelogram C. Diamond D. Oval