CSC 1101:: Introduction to Computer Studies

Lecture-Notes:: week 03

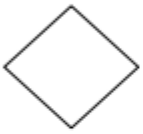
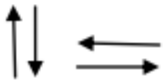
❖ ***Flowchart***

- ***What is flowchart?***

  The flowchart is a diagram which visually presents the flow of data through processing systems. This means by seeing a flow chart one can know the operations performed and the sequence of these operations in a system. Algorithms are nothing but sequence of steps for solving problems. So, a flow chart can be used for representing an algorithm. A flowchart will describe the operations (and in what sequence) are required to solve a given problem. So, a flow chart can be seen as blueprint of a design which have been made for solving a problem.

- ***Basic symbols of flowchart***

  There are 6 basic symbols commonly used in flowcharting of language Programs: Terminal, Process, input/output, Decision, Connector and Predefined Process. This is not a complete list of all the possible flowcharting symbols; it is the ones used most often in the structure of different language programming.

Symbol	Name	Function
	**Process**	Indicates any type of internal operation inside the Processor or Memory
	input/output	Used for any Input / Output (I/O) operation. Indicates that the computer is to obtain data or output results
	Decision	Used to ask a question that can be answered in a binary format (Yes/No, True/False)
	Connector	Allows the flowchart to be drawn without intersecting lines or without a reverse flow.
	Predefined Process	Used to invoke a subroutine or an Interrupt program.
	Terminal	Indicates the starting or ending of the program, process, or interrupt program
	Flow Lines	Shows direction of flow.

- ***<u>Basic Rules of flowcharting</u>***

1. All boxes of the flowchart are connected with Arrows. (Not lines)

2. Flowchart symbols have an entry point on the top of the symbol with no other entry points. The exit point for all flowchart symbols is on the bottom except for the Decision symbol.

3. The Decision symbol has two exit points; these can be on the sides or on the bottom and one side.

4. Generally, a flowchart will flow from top to bottom. However, an upward flow can be shown as long as it does not exceed 3 symbols.

5. Connectors are used to connect breaks in the flowchart. Examples are:

- From one page to another page.
- From the bottom of the page to the top of the same page.
- An upward flow of more than 3 symbols

6. Subroutines and Interrupt programs have their own and independent flowcharts.

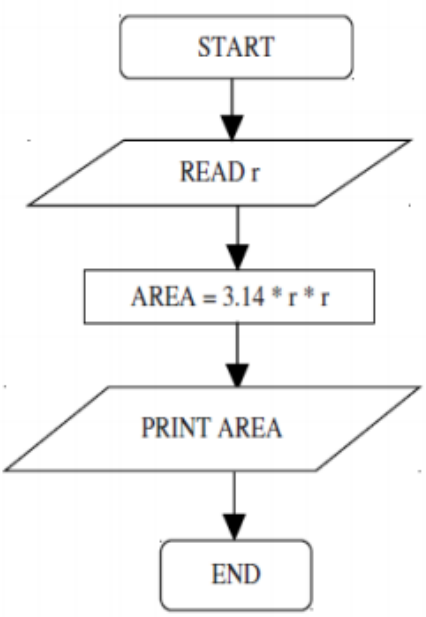
7. All flow charts start with a Terminal or Predefined Process (for interrupt programs or subroutines) symbol.

8. All flowcharts end with a terminal or a contentious loop.

- ***Some examples of flowchart:***

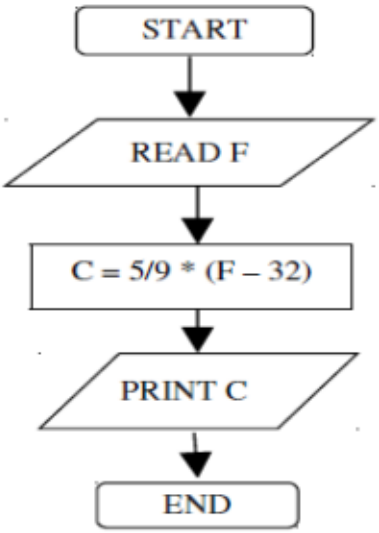
Example:1

Find the area of a circle of radius r.



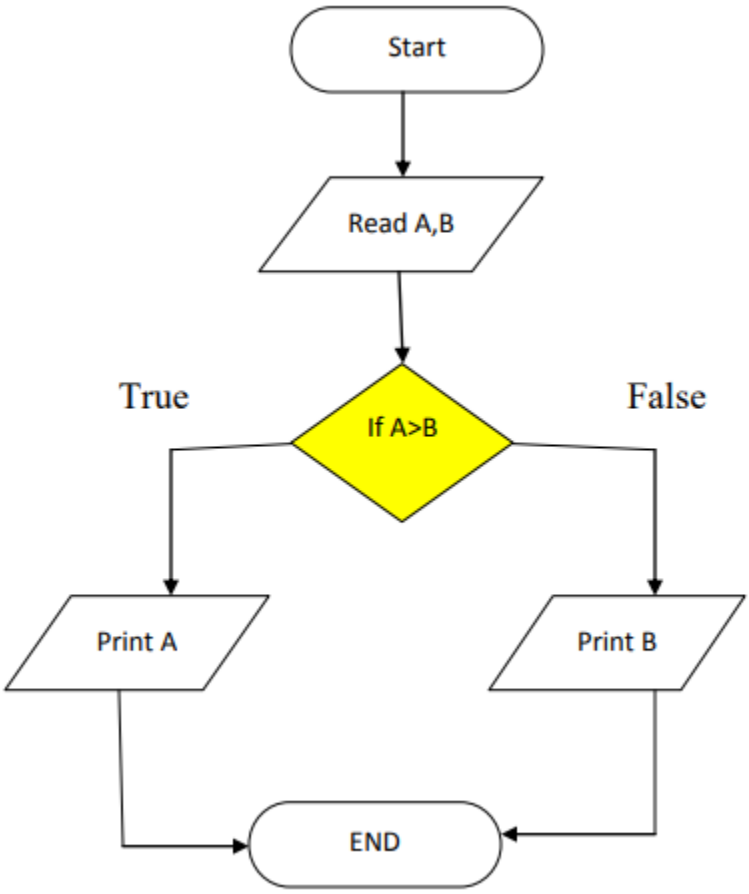
Example:2

Convert temperature Fahrenheit to Celsius.



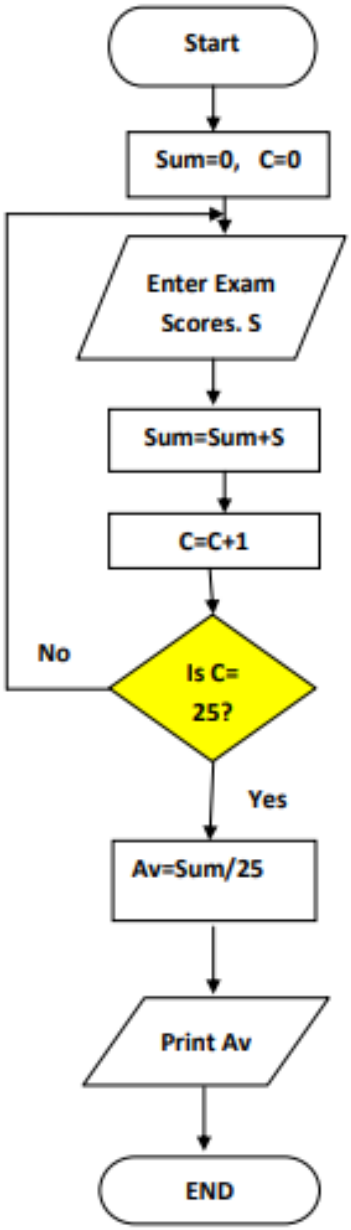
Example:3

Algorithm for find the greater number between two numbers.



Example:4

Flowchart for the calculate the average from 25 exam scores.



- ***Advantages of using Flowcharts***

As previously explained flowchart is used for representing algorithm in pictorial form. This pictorial representation of a solution/system is having many advantages. These advantages are as follows:

1) Communication: A Flowchart can be used as a better way of communication of the logic of a system and steps involve in the solution, to all concerned particularly to the client of system.

2) Effective analysis: A flowchart of a problem can be used for effective analysis of the problem.

3) Documentation of Program/System: Program flowcharts are a vital part of a good program documentation. Program document is used for various purposes like knowing the components in the program, complexity of the program etc.

4) Efficient Program Maintenance: Once a program is developed and becomes operational it needs time to time maintenance. With help of flowchart maintenance become easier.

5) Coding of the Program: Any design of solution of a problem is finally converted into computer program. Writing code referring the flowchart of the solution become easy.

- ***Practice***

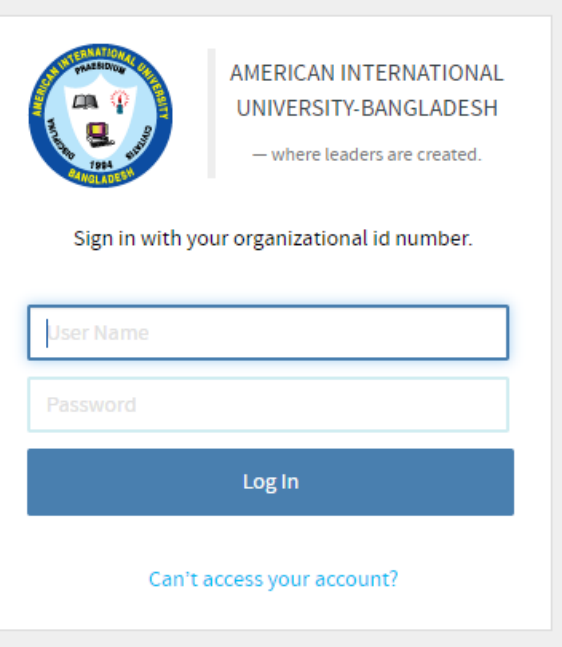
1. Draw a flowchart to find the sum of first 100 natural numbers.
2. Draw flowchart for the problem of determining prime number?
3. Draw a of the Fibonacci series: 1, 1, 2, 3, 5, 8,…flowchart which generates first 50 items

❖***Introduction to AIUB website and VUES***

- Here is the link of AIUB official website, *https://www.aiub.edu/*

VUES-Virtual University Expert System

Here is the link of sign-in page of AIUB Portal- https://portal.aiub.edu/



❖ ***Introduction to Learning System Management***

LMS (learning management system) is an application that allows to simply distribute ready-made content. And a system that, beyond this, has functionality for creating courses, taking assessments, giving results, etc.

Learning Management System is a Web-based application for-

- ✓ Administration
- ✓ Documentation
- ✓ Delivery of educational course contents
- ✓ Sharing information between individuals
- ✓ Training programs

- Learning Management Systems are being extensively used in schools, colleges, universities and in different kind of organizations.

- By using the system, management of users, roles, courses, instructors, facilities and generating reports becomes easier.

- LMS provides the flexibility to access it from their workplace or home. Authorized individuals have 24/7 access to this unique system through URL or through a unique User ID and Password.

- Through LMS all the involved users can be connected through a single platform.

References

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ii. https://creately.com/blog/diagrams/flowchart-guide-flowchart-tutorial/
iii. http://mycsvtunotes.weebly.com/uploads/1/0/1/7/10174835/computer_fundamental_complete-i.pdf
iv. https://www.lynda.com/Moodle-tutorials/Introduction-learning-management-systems/578069/632144-4.html
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