Chapter -2 : Algorithms for Problem Solving

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. You can see a flow chart as a blueprint of a design you have made for solving a problem.

Flowchart Symbols

There are 6 basic symbols commonly used in flowcharting of assembly language Programs:

- Terminal,
- Process,
- input/output,
- Decision,
- Connector and
- Predefined Process.
Problem 1 : Flowchart to calculate the area of circle.

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<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Function</th>
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<tr>
<td></td>
<td><strong>Process</strong></td>
<td>Indicates any type of internal operation inside the Processor or Memory</td>
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<td></td>
<td>input/output</td>
<td>Used for any Input / Output (I/O) operation. Indicates that the computer is to obtain data or output results</td>
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<td></td>
<td>Decision</td>
<td>Used to ask a question that can be answered in a binary format (Yes/No, True/False)</td>
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<td>Connector</td>
<td>Allows the flowchart to be drawn without intersecting lines or without a reverse flow.</td>
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<td>Predefined Process</td>
<td>Used to invoke a subroutine or an Interrupt program.</td>
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<td></td>
<td>Terminal</td>
<td>Indicates the starting or ending of the program, process, or interrupt program</td>
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<td>Flow Lines</td>
<td>Shows direction of flow.</td>
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Problem 2: Convert temperature Fahrenheit to Celsius.

START
READ F
C = 5/9 * (F - 32)
PRINT C
END

Problem 3: Flowchart to find the greatest from 2 numbers.
**Problem 4:** Flowchart to print the Even numbers between 9 and 100.

**Problem 5:** Flowchart for printing odd numbers less than a given number. It should also calculate their sum and count.
**Problem 6**: Flowchart for the calculate the average from 25 exam scores.

![Flowchart for the calculate the average from 25 exam scores.](image)

**Assignments**

1. Draw a flowchart to find the sum of first 100 natural numbers.
2. Draw a flow chart to find the largest of 3 numbers.
3. Draw a flowchart for check a given number is prime or not.