SLIIT ACADEMY

FCIT – Semester 1

PROGRAMMING PROCESS-FLOW CHARTS

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Learning Outcomes

End of this lecture you will be able to learn ,

LO1:Identify the symbols used to design the flow charts.

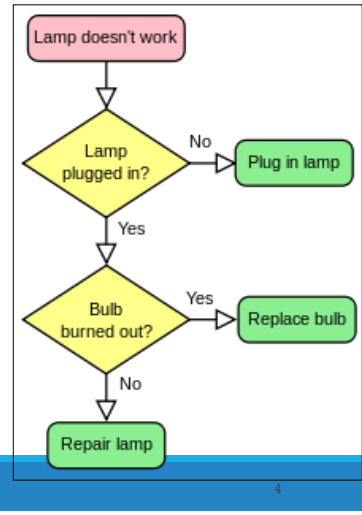
LO2:Apply the knowledge to draw the flow charts for the problems.

What is the Programming Process?

- Every computer program involves several steps to be followed by a programmer.
- Once the problem has been identified, the logical solution should be thought out and expressed in a form of a program text such as:
  - **Pseudo - code**
  - **Flow chart**
  - **Structure chart**
  - **Decision tables and decision trees.**

Flow Charts

- A symbol-oriented design system that identifies the type of statement by the shape of the symbol containing the statement.

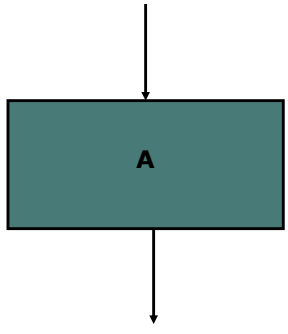


Symbols used in Flow Charts : Terminal Symbol

- This oval always begins and ends the flowchart. It can also be used to indicate the beginning and end of a subsection within the flowchart, known as a module.
- The terminal symbol will have only one flow line.

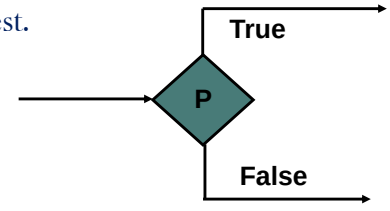
Symbols used in Flow Charts : Process Box

- This symbol represents an operation that is to be performed. It consists of a rectangle with one control path leading into it and one leading out.



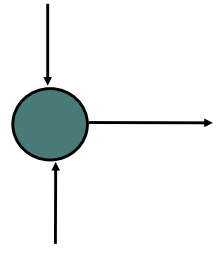
Symbols used in Flow Charts: Decision Symbol

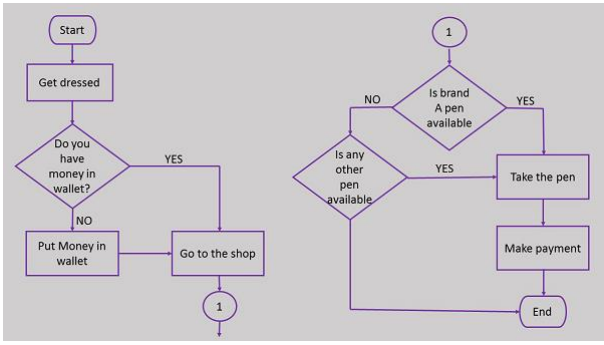
- This symbol specifies a test operation and consists of the standard decision box and is characterized by one control path leading in and two paths leading out.
- The specification P represents a test to be performed. One or the other output path is taken as a result of the test.

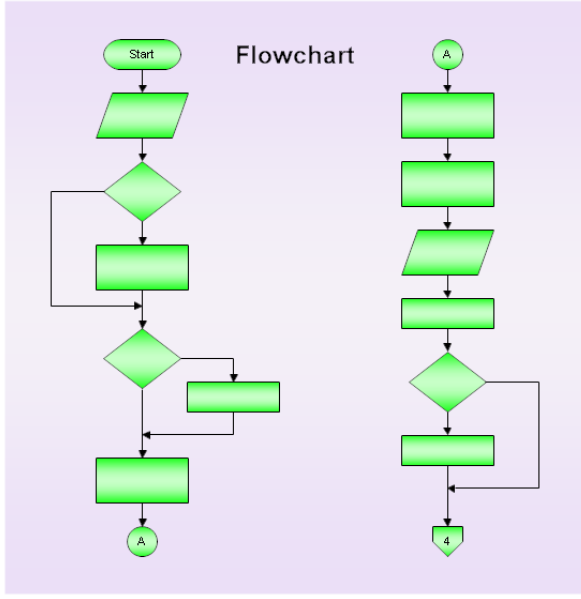


Symbols used in Flow Charts :Connector Symbol

- This symbol is represented by a circle where control paths lead towards a common point.
- There are no operations incorporated with this symbol. The symbol is simply a junction that typically has two entries and one exit.
- Also, connectors can used when connect flow charts.

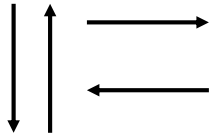






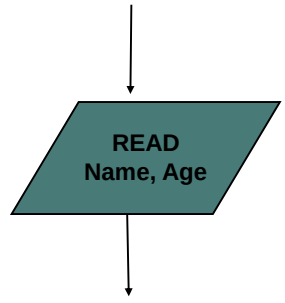
Symbols used in Flow Charts: Flow Lines

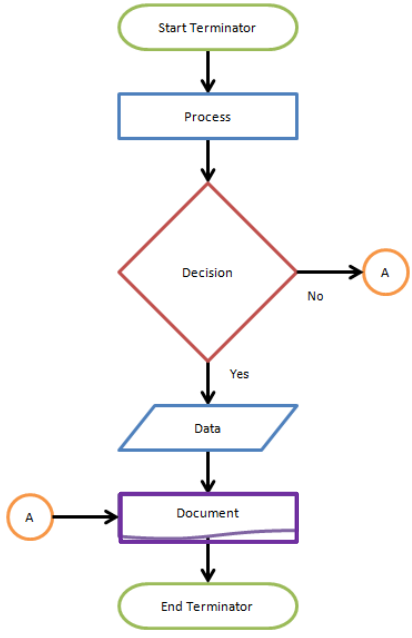
- These lines represent the passing of control from one of the symbols (Process Box, Decision symbol, or Connector symbol) to another in the direction of the arrow.



Symbols used in Flow Charts: Input/output Symbol

- This parallelogram is used for both input (Read, Get) and output (Write, Print). So, the particular use must be labeled.





Example 01:

Write an algorithm to find the sum and average of two numbers

Input	Processing	Output

Example 01:Flow Chart

Example 02:

Every day, a weather station receives 15 temperatures expressed in degrees Fahrenheit. A program is to be written that will accept each Fahrenheit temperature, convert it to Celsius and display the converted temperature to the screen. After 15 temperatures have been processed, the words 'All temperatures processed' are to be displayed on the screen.

Input	Processing	Output

Example 02: Flow Chart

```
BEGIN
    FLOAT f_temp, c_temp
    INT temp_count = 0

    WHILE (temp_count<15) DO
        PRINT "Enter Fahrenheit temperature :"
        GET f_temp

        c_temp = (f_temp - 32)*5/9
        PRINT "Celcius Temperature = ",c_temp
        temp_count = temp_count + 1
    ENDWHILE
    PRINT "All temperatures processed!"
END
```


Summary

- What is the Programming Process?
- Flow Charts
- Symbols used in Flow Charts