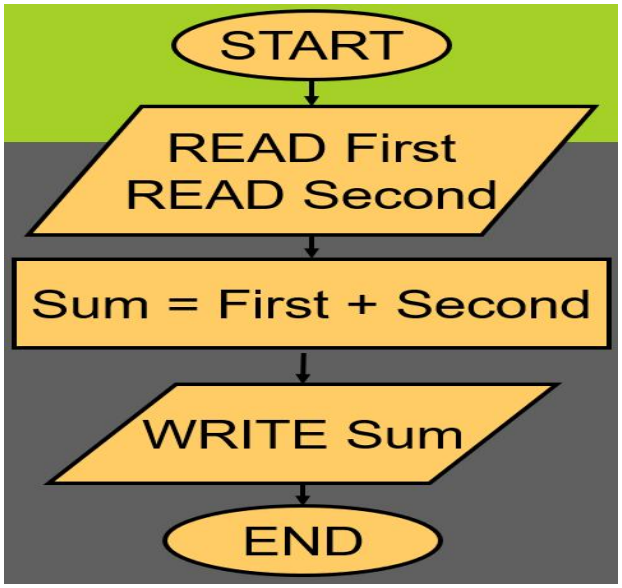
Flowchart

- A flowchart is a visual representation of the sequence of steps and decisions needed to perform a process.
- A flowchart is a formalized graphic representation of a logic sequence, work or manufacturing process, organization chart, or similar formalized structure

*Example: Write a program calculating the sum of two numbers



1. Flowcharting

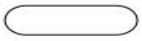
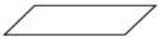
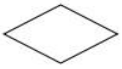
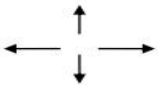
- Each step in the sequence is noted within a diagram shape. Steps are linked by connecting lines and directional arrows. This allows anyone to view the flowchart and logically follow the process from beginning to end

Flowchart Conventions

1. Each symbol denotes a type of operation.
2. A note is written inside each symbol to indicate the specific function to be performed.
3. The symbols are connected by flow-lines.
4. Flowcharts are drawn and read from top to bottom unless a specific condition is met that alters the path.
5. A sequence of operations is performed until a terminal symbol designates the sequence's end or the end of the program.
6. Sometimes several steps or statements are combined in a single processing symbol for ease of reading.

Flowcharting Symbols

Flowchart is diagrammatic /Graphical representation of sequence of steps to solve a problem. To draw a flowchart following standard symbols are use

Symbol Name	Symbol	function
Oval		Used to represent start and end of flowchart
Parallelogram		Used for input and output operation
Rectangle		Processing: Used for arithmetic operations and data-manipulations
Diamond		Decision making. Used to represent the operation in which there are two/three alternatives, true and false etc
Arrows		Flow line Used to indicate the flow of logic by connecting symbols
Circle		Page Connector
		Off Page Connector
		Predefined Process /Function Used to represent a group of statements performing one processing task.
		Preprocessor
		Comments

Examples:

Algorithm & Flowchart to find the sum of two numbers

Algorithm

Step-1 Start

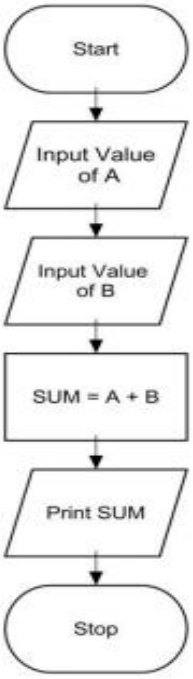
Step-2 Input first numbers say A

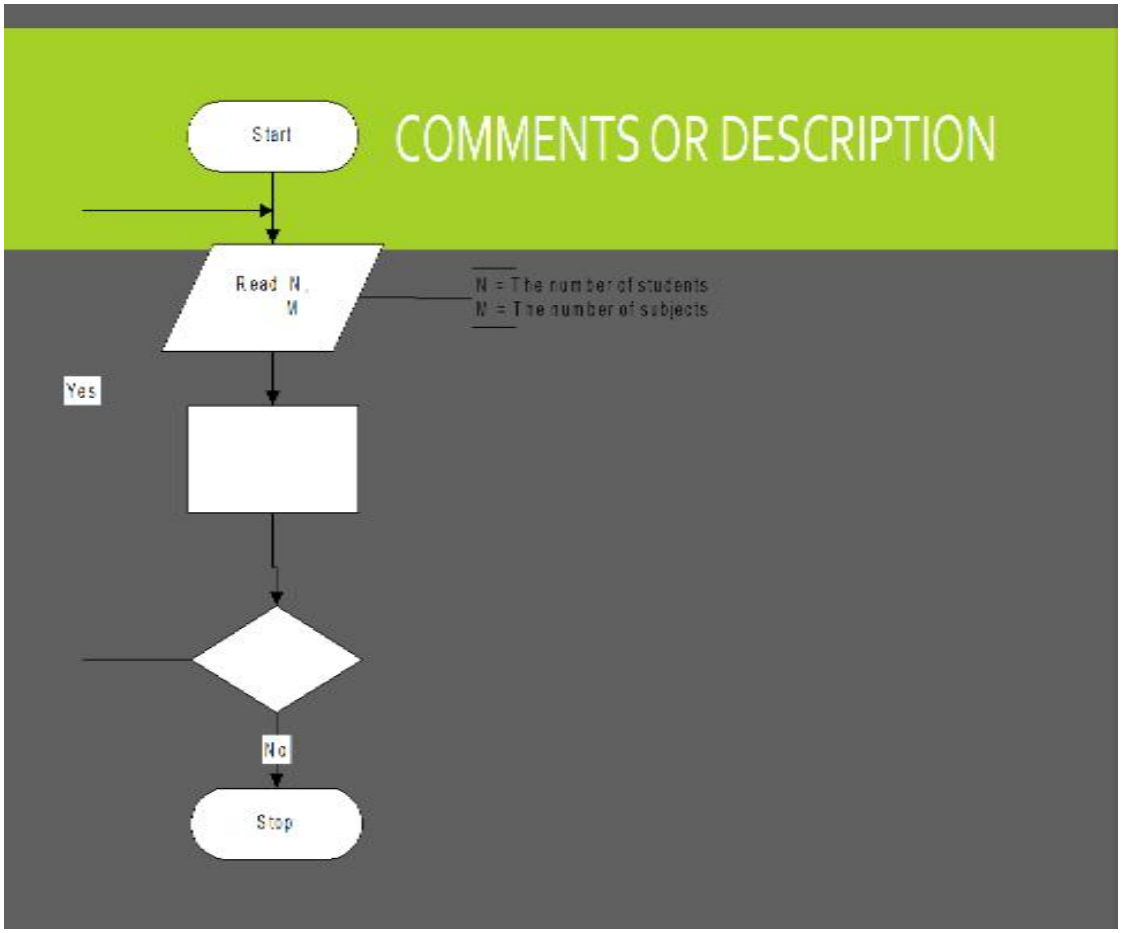
Step-3 Input second number say B

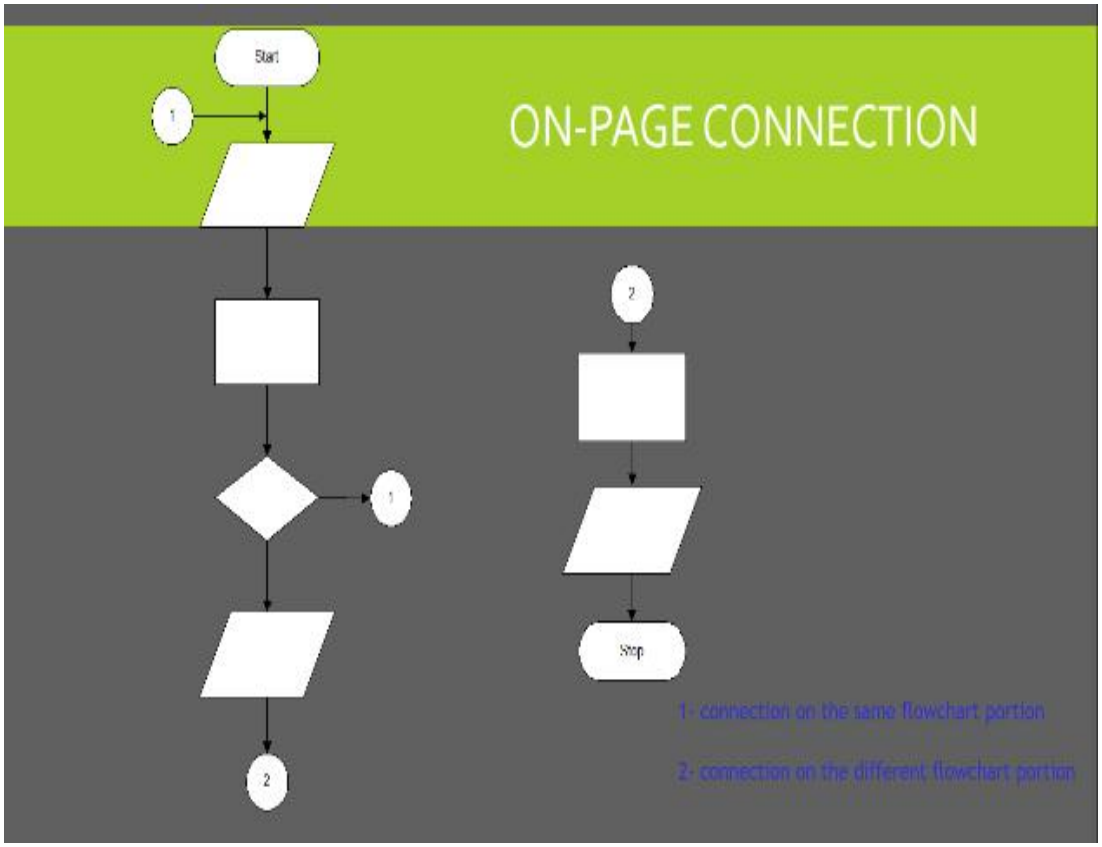
Step-4 SUM = A + B

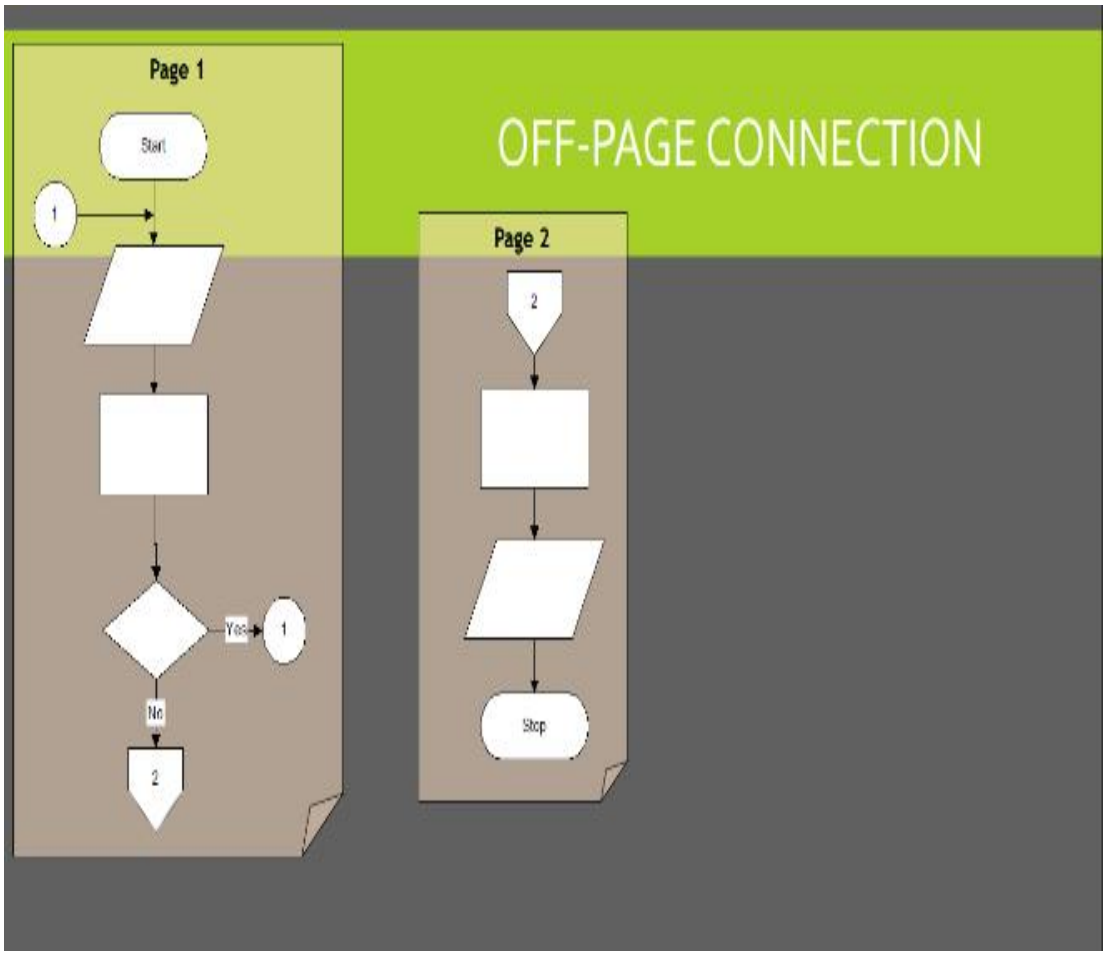
Step-5 Display SUM

Step-6 Stop






Start
1
2
Stop
ON-PAGE CONNECTION
1- connection on the same flowchart portion
2- connection on the different flowchart portion


Page 1
Start
1
Yes
No
2
Page 2
2
Stop
OFF-PAGE CONNECTION

Flowcharting Guidelines

- The flowchart should flow from top to bottom
- If the chart becomes complex, utilize connecting blocks
- Avoid intersecting lines
- Use meaningful description of symbol

Control Structure

- Describe the flow of execution.
- In flowcharts, flow of execution is represented by the arrow line.

Types of control structure:

- **Sequential** – refers to line by line execution by which statements are executed sequentially, in the same order in which they appear in the program
- **Selection –** allows one set of statements to be executed if a condition is true and another set of actions to be executed if a condition is false
- **Repetition –** process of repeatedly executing one or more statements