Department of Social Statistics

Faculty of Humanities and Social Sciences

University of Sri Jayewardenepura

ITE/MIT 1213 Fundamentals of Programming

Tutorial – 08

Flowcharts

1. What is a Flowchart?

A flowchart is a visual diagram that shows the step-by-step flow of a process or algorithm using symbols and arrows. It helps in problem-solving, designing algorithms and communicating ideas clearly.

2. Flowchart Symbols
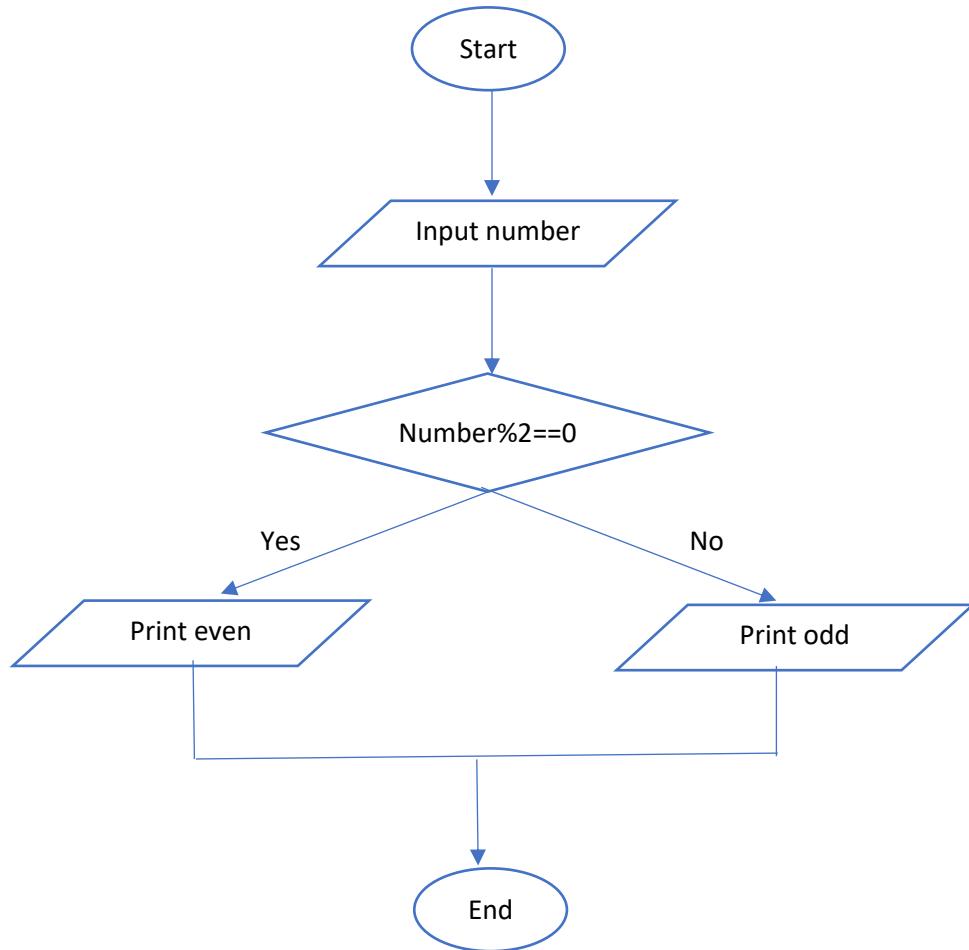
| Symbol	Name	Use
⬭	Start/End	Beginning or end of a process
▭	Process	An action or instruction
◇	Decision	A condition (Yes/No or True/False)
▱	Input / Output	Data input or output
→	Flow Line	Direction of steps

Examples:

- Decision Flowchart (Checking Even or Odd Number)

Steps in words:
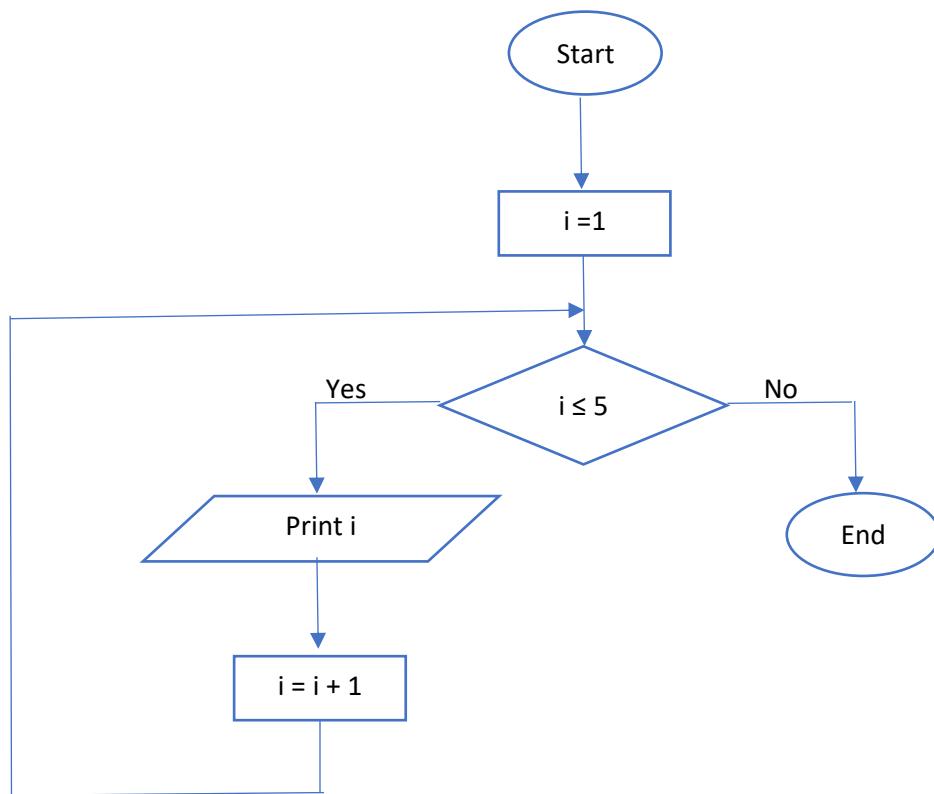
1. Start
2. Input a number
3. Check if the number is divisible by 2
4. If YES → Print "Even"
5. If NO → Print "Odd"
6. End

```
                    ( Start )
                        |
                        v
              / Input number /
                        |
                        v
              < Number%2==0 >
             Yes /        \ No
                v          v
      / Print even /    / Print odd /
                |          |
                +----+-----+
                     |
                     v
                  ( End )
```

- Flowchart for Printing Numbers 1 to 5

Steps in words:

1. Start
2. Set counter = 1
3. Check if counter ≤ 5
4. If YES → Print counter → Increase counter by 1 → Go back to step 3
5. If NO → End

```
                    ( Start )
                        |
                        v
                    [ i =1 ]
                        |
                        v
        Yes         < i ≤ 5 >        No
         |                            |
         v                            v
    / Print i /                    ( End )
         |
         v
    [ i = i + 1 ]
```

Exercises

1. Draw a flowchart to add two numbers entered by the user and display the result.
2. Draw a flowchart to find the largest of two numbers entered by the user.
3. Draw a flowchart to print even numbers from 1 to 10.
4. Draw a flowchart to calculate the sum of numbers from 1 to N.
5. Draw a flowchart for a student grading system.
   - If the marks are greater than or equal to 75, assign Grade A.
   - If the marks are greater than or equal to 50 but less than 75, assign Grade B.
   - If the marks are less than 50, assign Grade C.