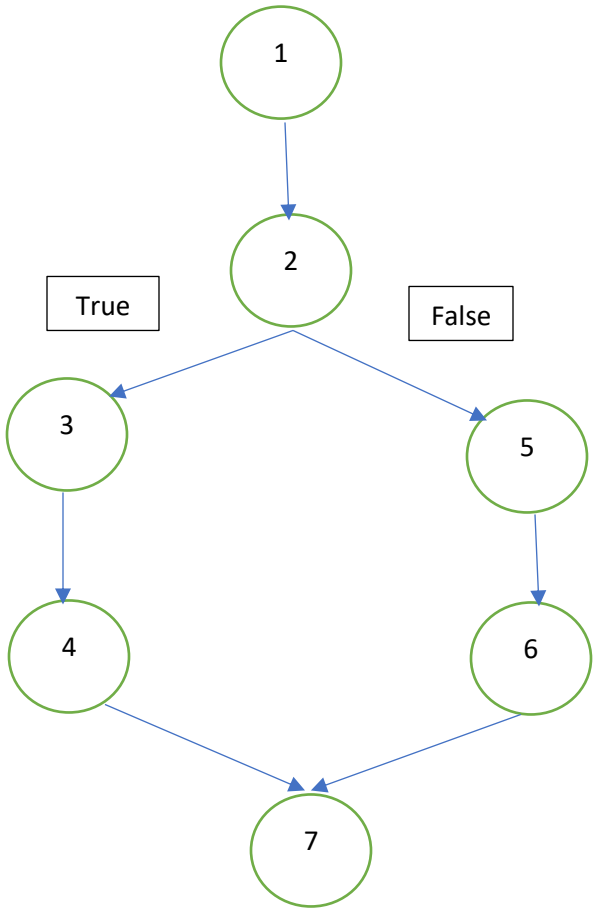
**Control Flow Testing** :

It is formed from the node, edge, decision node, junction node to specify all possible execution path.




## Data Flow Testing:

Data flow testing is used to analyze the flow of data in the program.

(1, (2, f), x), (1, (2, t), x), (2, 3, x), (2, (4, t), x), (2, (5, f), x), (2, (6, f), x), (2, 4, x), (2, 6, x), (4, 7, x).

# Statement Coverage:

It is also termed as Line coverage.

The goal of this technique is **to cover all the statements at least once by executing the program.**

**For example**

READ A

IF A == 10

THEN

PRINT I am True

ElSE

PRINT I am False

ENDIF

**Test case #1 ( A = 5 )**

Statement coverage = (Total Statements covered/Total Statements )* 100

=(5/7)*100

**Branch Coverage:**

The main aim of branch coverage is **to cover all the branches ( two separate paths) at least once (true and false).**

**For example:**

READ A

IF A == 10

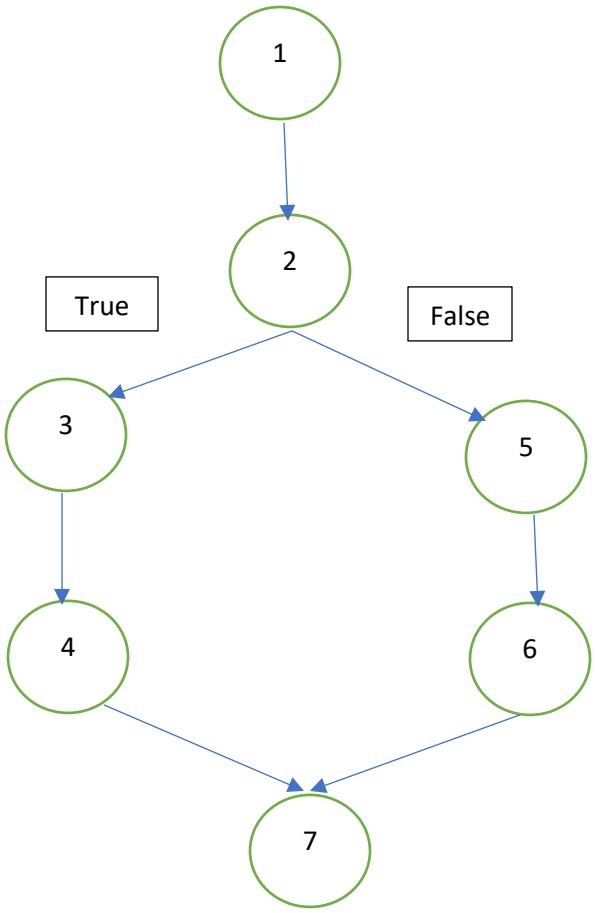
THEN

PRINT I am True

ElSE

PRINT I am False

ENDIF



**Branches:**

2,5,6,7

2,3,4,7

**Test case #1 ( A = 12 )**

Branch coverage = (Total branch covered/Total Branches )* 100

=(1/2)*100

branch coverage 50

## Decision Coverage Testing:

do while statement, if statement and case statement **(Control flow statements), it is considered as decision point because there are two outcomes either true or false.**

**For example:**

READ A

IF A == 10

THEN

PRINT I am True

ElSE

PRINT I am False

ENDIF

## Calculation of Decision Coverage percent:

$$\textit{Decision Coverage} = \frac{\text{Number of Decision Outcomes Exercised}}{\text{Total Number of Decision Outcomes}} * 100$$

1.Decision Coverage = ½*100 (Only "True" is exercised)

=100/2

= 50

Decision Coverage is 50%

2. Decision Coverage = ½*100 (Only "False" is exercised) <br>

=100/2

= 50

Decision Coverage is 50%