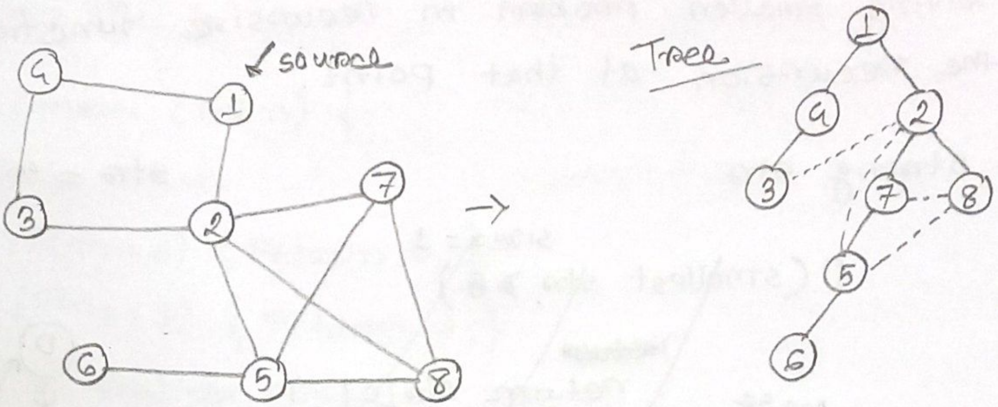
—x— Practice Problem - 5.5 —x—

1.



BFS traversal -> 1, 4, 2, 3, 7, 8, 5, 6

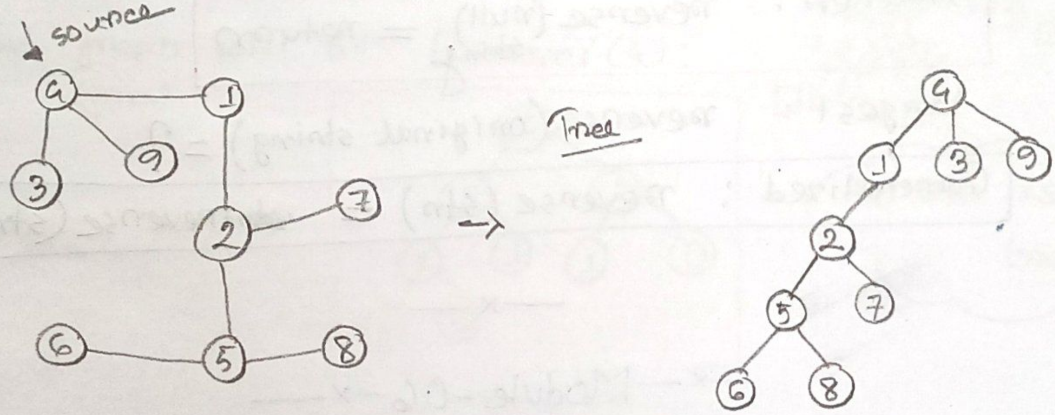
1 -> level-0   3, 7, 8 -> level-2

2, 4 -> level-1   5 -> level-3, 6 -> level-4

Cross edges -> 4 (Ans)

—x—

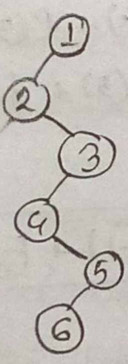
2



DFS traversal -> 4, 1, 2, 5, 6, 8, 7, 3, 9.

—x—

3. The graph will be



BFS -> 1, 2, 3, 4, 5, 6

DFS -> 1, 2, 3, 4, 5, 6.

—x—

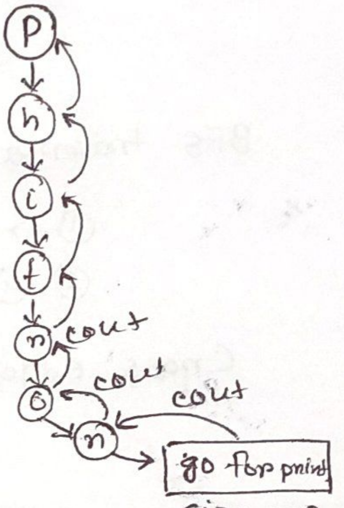
④

ⓐ Solving smaller problem in recursive function, to stop the recursion at that point.

ⓑ string str

str = "phitron";
size = 7

```
                 size == 1
    ~~if (smallest str. > 0)~~
          ~~return str[0];}~~
base
case   if (str. size == 0){
              return;}
       char r = str[0];
       str = str. substr (1, n-1)
       reverse(str)
       cout<<r
```



smaller : reverse (null string) = return

largest : reverse (original string) = ?

Generalized : reverse (str) = reverse (str*), r = str[0]

—x—

—x—Module -06—x—

—x—Lab Module-02—x—

(*) Recursion : Fibonacci Number,

$$0, 1, 1, 2, 3, \overset{\to f(5)}{5}, 8, 13, 21 \ldots\ldots$$

f(n) = ?
f(0) = 0
f(1) = 1
f(2) = 1
f(3) = 2
f(4) = 3

Base case :

f(0) = 0
f(1) = 1

f(5) = f(4) + f(3)
f(6) = f(5) + f(4)

Generalised.

$$\boxed{F(n) = F(n-1) + F(n-2)}$$