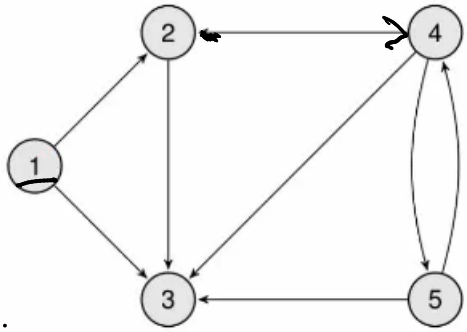
Review of SPFA-M

```
function Initialize() begin
    unmark all nodes in N ;
    mark node s ;
    pred(s) ← 0 ;
    next ← 1 ;
    LIST = {s}
```

counter

order[s] = next

```
begin
    Initialize() ;
    while LIST ≠ ∅ do
        select node i from LIST ;
        if node i is incident on an admissible arc (i, j) then
            mark node j ;
            pred(j) ← i ;
            next ← next + 1 ;
            order(j) ← next ;
            add node j to LIST ;
        else
            delete node i from LIST
```



s = 1

Init

marked = [1, 0, 0, 0, 0] next = 1

pred = [0, 0, 0, 0, 0] LIST = {1}

order = [1, 0, 0, 0, 0]

Step 1:-

admissible arc is (1, 2) ⇒ j = 2

marked = [1, 1, 0, 0, 0]

pred = [0, 1, 0, 0, 0] next = 2

order = [1, 2, 0, 0, 0]

LIST = {1, 2}

Step 2:- i = 1 (breadth first)

admissible arc (1, 3) j = 3

marked = [1, 1, 1, 0, 0]

pred = [0, 1, 1, 0, 0] next = 3

order = [1, 2, 3, 0, 0]

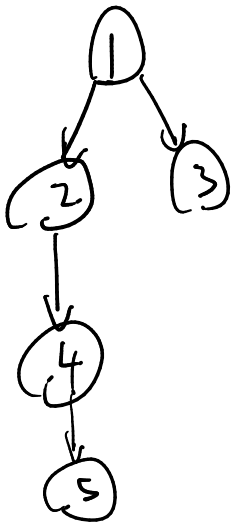
LIST = {1, 2, 3}

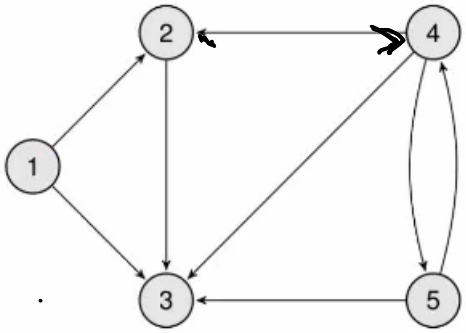
Step 3:- i = 1

No admissible arc LIST = {2, 3}

breadth

pred = [0, 1, 1, 2, 4]





depth

pred = [0, 1, 5, 2, 4]

Another Solution

pred = [0, 1, 2, 2, 4]