Prims Algorithm

Code:

In [2]:

```
INF = 9999999
N = 5
G = [[0, 19, 5, 0, 0],
    [19, 0, 5, 9, 2],
    [5, 5, 0, 1, 6],
    [0, 9, 1, 0, 1],
    [0, 2, 6, 1, 0]]

selected_node = [False] * N
no_edge = 0
minimumCost = 0
selected_node[0] = True

print("Edge : Weight")
while (no_edge < N - 1):
  minimum = INF
  a = 0
  b = 0
  for m in range(N):
    if selected_node[m]:
      for n in range(N):
        if ((not selected_node[n]) and G[m][n]):
          if minimum > G[m][n]:
            minimum = G[m][n]
            a = m
            b = n

  print (" " + str(a) + "-" + str(b) + " " + ":" + " " + str(G[a][b]))
  minimumCost = minimumCost + G[a][b]
  selected_node[b] = True
  no_edge += 1
print("\nMinimum Spanning Tree: ", minimumCost)

# Output:
```

```
Edge : Weight
 0-2 : 5
 2-3 : 1
 3-4 : 1
 4-1 : 2

Minimum Spanning Tree:  9
```