

Program:

```
import sys
```

```
def prims_algorithm(graph, vertices):
```

```
    selected_node = [False] * vertices
```

```
    selected_node[0] = True # Start from the first vertex
```

```
    edges = 0
```

```
    print("Edge : Weight")
```

```
    while edges < vertices - 1:
```

```
        minimum = sys.maxsize
```

```
        x = 0
```

```
        y = 0
```

```
        for i in range(vertices):
```

```
            if selected_node[i]:
```

```
                for j in range(vertices):
```

```
                    if (not selected_node[j]) and graph[i][j]: # Not selected and there is an edge
```

```
                        if minimum > graph[i][j]:
```

```
                            minimum = graph[i][j]
```

```
                            x, y = i, j
```

```
        print(f"{x} - {y} : {graph[x][y]}")
```

```
        selected_node[y] = True
```

```
        edges += 1
```

```
# Input number of vertices
```

```
vertices = int(input("Enter the number of vertices: "))
```

```
# Input graph as an adjacency matrix
```

```
graph = []
```

```
print("Enter the adjacency matrix:")
```

```
for i in range(vertices):
```

```
graph.append(list(map(int, input().split())))
```

```
# Execute Prim's algorithm
```

```
prims_algorithm(graph, vertices)
```

Output:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python +
PS C:\Users\katur\Music\DAA practicals> & C:/Users/katur/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/katur/Music/DAA practicals/practical4.py"
Enter the number of vertices: 4
Enter the adjacency matrix:
0 1 2 1
3 4 2 1
2 3 2 0
3 2 4 0
Edge : Weight
0 - 1 : 1
0 - 3 : 1
0 - 2 : 2
PS C:\Users\katur\Music\DAA practicals>
```