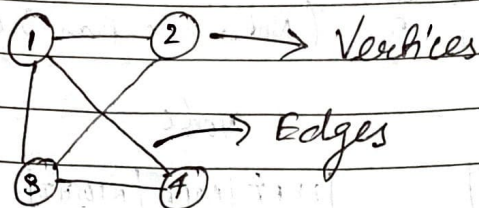


X. Graphs in Python

It is a Non-linear data structure. It does not run in sequence



Input print

```
class Vertex:
```

```
    def __init__(self, data) -> None:
```

```
        self.data = data
```

```
        self.connections = []
```

```
    def add_edge(self, obj):
```

```
        self.connections.append(obj)
```

```
class Edge:
```

```
    def __init__(self):
```

```
        self.connections = []
```

```
    def add_edge(self, from-vertex, to-vertex):
```

```
        self.connections.append(from-vertex.data)
```

```
        self.connections.append(to-vertex.data)
```

```
class Graph:
```

```
    def __init__(self):
```

```
        self.graph = {}
```

```
    def add_vertices(self, obj):
```

```
        self.graph.update({obj.data: {obj.connections}})
```

```
v1 = Vertex("1")
```

```
v2 = Vertex("2")
```

```
v3 = Vertex("3")
```

```
v4 = Vertex("4")
```

e1 = Edge()

e1.add-edge(v1, v2)

e2 = Edge()

e2.add-edge(v1, v3)

e3 = Edge()

e3.add-edge(v3, v4)

e4 = Edge()

e4.add-edge(v2, v3)

e5 = Edge()

e5.add-edge(v4, v1)

v1.add-edge(e1.connections)

v1.add-edges(e2.connections)

v2.add-edge(e3.connection)

v3.add-edge(e4.connection)

v4.add-edge(e5.connection)

g1 = graph()

g1.add-vertices(v1)

g1.add-vertices(v2)

g1.add-vertices(v3)

g2.add-vertices(v4)

pprint.pprint(g1.graph)