```python
class Graph:
    def __init__(self, edge_list, num_of_nodes):

        self.adjacency_list = [[] for _ in range(num_of_nodes)]

        for (origin, dest) in edge_list:
            self.adjacency_list[origin].append(dest)


def print_graph(graph):
    for origin in range(len(graph.adjacency_list)):
        for dest in graph.adjacency_list[origin]:
            print(f'{origin} -> {dest} ', end='')
        print()


# if __name__ == '__main__':
#     # Set up an edge list and number of nodes
#     edge_list = [(0, 1), (1, 2), (2, 3), (0, 2), (3, 2), (4, 5), (5, 4)]
#     num_of_nodes = 6

#     graph = Graph(edge_list, num_of_nodes)
#     print_graph(graph)

#TEST CASE 1
# if __name__ == '__main__':
#     edge_list = [(2, 3)]
#     num_of_nodes = 7

#     graph = Graph(edge_list, num_of_nodes)
#     print_graph(graph)
#     print("Vertex 3 and 4 has the highest degree")

#TESTCASE 2
# if __name__ == '__main__':
#     edge_list = [(2, 3),(3,6), (6,2)]
#     num_of_nodes = 7

#     graph = Graph(edge_list, num_of_nodes)
#     print_graph(graph)
#     print("Vertex 3, 4, 6 has the highest degree")

#TEST CASE 3
if __name__ == '__main__':
    edge_list = [(3,0), (3,2), (3,4)]
    num_of_nodes = 7
```

```
graph = Graph(edge_list, num_of_nodes)
print_graph(graph)
print(degree)
```

OUTPUT:
TEST CASE 1:
harshavaidhyam@Harshas-MacBook-Pro quiz 7 % cd /Users/harshavaidhyam/Desktop/Pitt\
term-1/Algo\ Design/quiz\ 7 ; /usr/bin/env /usr/local/bin/python3 /Users/harshavaidh
yam/.vscode/extensions/ms-python.python-
2022.16.1/pythonFiles/lib/python/debugpy/adapter/../../debugpy/launcher 58992 --
/Users/harshavaidhyam/Desktop/Pitt\ term-1/Algo
\ Design/quiz\ 7/test2.py

2 —> 3
Vertex 3 and 4 has the highest degree

TEST CASE 2:
harshavaidhyam@Harshas-MacBook-Pro quiz 7 % cd /Users/harshavaidhyam/Desktop/Pitt\
term-1/Algo\ Design/quiz\ 7 ; /usr/bin/env /usr/local/bin/python3 /Users/harshavaidh
yam/.vscode/extensions/ms-python.python-
2022.16.1/pythonFiles/lib/python/debugpy/adapter/../../debugpy/launcher 58986 --
/Users/harshavaidhyam/Desktop/Pitt\ term-1/Algo
\ Design/quiz\ 7/test2.py

2 —> 3
3 —> 6
6 —> 2
Vertex 3, 4, 6 has the highest degree

TEST CASE 3:
harshavaidhyam@Harshas-MacBook-Pro quiz 7 % cd /Users/harshavaidhyam/Desktop/Pitt\
term-1/Algo\ Design/quiz\ 7 ; /usr/bin/env /usr/local/bin/python3 /Users/harshavaidh
yam/.vscode/extensions/ms-python.python-
2022.16.1/pythonFiles/lib/python/debugpy/adapter/../../debugpy/launcher 58591 --
/Users/harshavaidhyam/Desktop/Pitt\ term-1/Algo
\ Design/quiz\ 7/test2.py

3 —> 0 3 —> 2 3 —> 4
Vertex 4 has the highest degree