

graph colouring.py

object

graph colouring.py

copy the program recursive.py

fact non recursive.py

fact recursive.py

fib non recursive.py

fib recursive.py

floyds.py

gcd non recursive.py

gcd recursive.py

graph colouring.py

hamiltonian.py

knapsack.py

lcm non recursive.py

lcm recursive.py

map coloring.py

max and min.py

max non recursive.py

max recursive.py

mergesort.py

MST.py

multiplication non recursive.py

multiplication recursive.py

n-queens.py

optimal BST.py

palindrome non recursive.py

palindrome recursive.py

prime or not non recursive.py

prime or not recursive.py

hamiltonian.py

B&B Travelling salesman.py

sum of subsets.py

tsp dynamic programming.py

graph colouring.py

```
1 def addEdge(adj, v, w):
2     adj[v].append(w)
3     adj[w].append(v)
4     return adj
5 def greedyColoring(adj, V):
6     result = [-1] * V
7     result[0] = 0
8     available = [False] * V
9     for u in range(1, V):
10         for i in adj[u]:
11             if (result[i] != -1):
12                 available[result[i]] = True
13         cr = 0
14         while cr < V:
15             if (available[cr] == False):
16                 break
17             cr += 1
18         result[u] = cr
19         for i in adj[u]:
20             if (result[i] != -1):
21                 available[result[i]] = False
22     for u in range(V):
23         print("Vertex", u, " ---> Color", result[u])
24 if __name__ == '__main__':
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```

```
ject  x hamiltonian.py x 8&8 Travelling salesman.py x sum of subsets.py x tsp dynamic programming.py x
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23     print("Vertex", u, " ---> Color", result[u])
24     if __name__ == '__main__':
25         g1 = [[] for i in range(5)]
26         g1 = addEdge(g1, 0, 1)
27         g1 = addEdge(g1, 0, 2)
28         g1 = addEdge(g1, 1, 2)
29         g1 = addEdge(g1, 1, 3)
30         g1 = addEdge(g1, 2, 3)
31         g1 = addEdge(g1, 3, 4)
32         print("Coloring of graph 1 ")
33         greedyColoring(g1, 5)
34         g2 = [[] for i in range(5)]
35         g2 = addEdge(g2, 0, 1)
36         g2 = addEdge(g2, 0, 2)
37         g2 = addEdge(g2, 1, 2)
38         g2 = addEdge(g2, 1, 4)
39         g2 = addEdge(g2, 2, 4)
40         g2 = addEdge(g2, 4, 3)
41         print("\nColoring of graph 2")
42         greedyColoring(g2, 5)
43
44
45
```

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Project

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```
g2 = addEdge(g2, 1, 2)
g2 = addEdge(g2, 1, 4)
g2 = addEdge(g2, 2, 4)
g2 = addEdge(g2, 4, 3)
print("\nColoring of graph 2")
greedyColoring(g2, 5)
```

graph colouring

C:\Users\kativ\PycharmProjects\pythonProject2\venv\Scripts\python.exe "C:/Users/kativ/AppData/Roaming/JetBrains/PyCharmCE2022.1/scratches/grap

Coloring of graph 1

Vertex 0 ---> Color 0

Vertex 1 ---> Color 1

Vertex 2 ---> Color 2

Vertex 3 ---> Color 0

Vertex 4 ---> Color 1