

Code:

```
Project > TermProjectFinals_Jacobvian > main >
TermProject2PartA_Jacobvian.py TermProject2PartB_Jacobvian.py main.py LinkedBinaryTree.py Tree.py BinaryTree.py

venv library root
BinaryTree.py
LinkedBinaryTree.py
LinkedDeque.py
LinkedQueue.py
LinkedStack.py
main.py
TeamProject1STACKANI
TermProject1TWOStack
TermProject2PartA_Jao
TermProject2PartA_Jao
TermProject2PartB_Jao
TermProjectFinals_Jaco
Tree.py

External Libraries
Scratches and Consoles

1 from LinkedBinaryTree import LinkedBinaryTree as Tree
2 print("Matrix 1:")
3 tree7 = Tree()
4
5 root = tree7._add_root('r')
6 node_a = tree7._add_left(root, 'a')
7 node_b = tree7._add_left(node_a, 'b')
8 node_c = tree7._add_right(node_a, 'c')
9 node_d = tree7._add_right(node_b, 'd')
10 node_e = tree7._add_left(node_c, 'e')
11 node_f = tree7._add_right(node_c, 'f')
12 node_g = tree7._add_right(node_e, 'g')
13 node_h = tree7._add_right(node_g, 'h')
14
15 print("Inorder traversal: ", end=" ")
16 for i in tree7.inorder():
17     print(i.element(), end=" ")
18 print()
19
20 print("Preorder traversal: ", end=" ")
21 for i in tree7.positions():
22     print(i.element(), end=" ")
23 print()
24
25 print("Postorder traversal: ", end=" ")
26 for i in tree7.postorder():
27     print(i.element(), end=" ")
28 print()
29 print()
30
31 print("Matrix 2:")
32 tree8 = Tree()
33
34 root = tree8._add_root('r')
35 node_a = tree8._add_left(root, 'a')
36 node_b = tree8._add_right(root, 'b')
37 node_c = tree8._add_left(node_a, 'c')
38 node_d = tree8._add_right(node_a, 'd')
39 node_e = tree8._add_right(node_b, 'e')
40 node_f = tree8._add_right(node_e, 'f')
41 node_g = tree8._add_right(node_f, 'g')
42
```

```
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41 node_g = tree8._add_right(node_f, 'g')
42
43 print("Inorder traversal: ", end=" ")
44 for i in tree8.inorder():
45     print(i.element(), end=" ")
46 print()
47
48 print("Preorder traversal: ", end=" ")
49 for i in tree8.positions():
50     print(i.element(), end=" ")
51 print()
52
53 print("Postorder traversal: ", end=" ")
54 for i in tree8.postorder():
55     print(i.element(), end=" ")
56 print()
57 print()
58
59 print("Matrix 3:")
60 tree9 = Tree()
61
62 root = tree9._add_root('r')
63 node_a = tree9._add_left(root, 'a')
64 node_b = tree9._add_right(root, 'b')
65 node_c = tree9._add_right(node_a, 'c')
66 node_d = tree9._add_left(node_b, 'd')
67 node_e = tree9._add_right(node_b, 'e')
68 node_f = tree9._add_left(node_c, 'f')
69
70 print("Inorder traversal: ", end=" ")
71 for position in tree9.inorder():
72     print(position.element(), end=" ")
73 print()
74
75 print("Preorder traversal: ", end=" ")
76 for position in tree9.positions():
77     print(position.element(), end=" ")
78 print()
79
80 print("Postorder traversal: ", end=" ")
81 for position in tree9.postorder():
```

```
TermProject2PartA_JacobIvan.py  TermProject2PartB_JacobIvan.py  main.py  LinkedBinaryTree.py  Tree.py  BinaryTree.py
77 print(position.element(), end=" ")
78 print()
79
80 print("Postorder traversal: ", end="")
81 for position in tree9.postorder():
82     print(position.element(), end=" ")
83 print()
84 print()
85
86 print("Matrix 4:")
87 tree10 = Tree()
88
89 root = tree10._add_root('r')
90 node_a = tree10._add_left(root, 'a')
91 node_b = tree10._add_right(root, 'b')
92 node_c = tree10._add_left(node_a, 'c')
93 node_d = tree10._add_right(node_a, 'd')
94 node_e = tree10._add_left(node_b, 'e')
95 node_f = tree10._add_right(node_b, 'f')
96
97 node_g = tree10._add_left(node_c, 'g')
98 node_h = tree10._add_right(node_c, 'h')
99 node_i = tree10._add_left(node_e, 'i')
100
101 print("Inorder traversal: ", end="")
102 for position in tree10.inorder():
103     print(position.element(), end=" ")
104 print()
105
106 print("Preorder traversal: ", end="")
107 for position in tree10.preorder():
108     print(position.element(), end=" ")
109 print()
110
111 print("Postorder traversal: ", end="")
112 for position in tree10.postorder():
113     print(position.element(), end=" ")
114 print()
115
```

OUTPUT:

```
Run  TermProject2PartB_JacobIvan
Z:\OSAL601-IDB2\FINALS\TermProjectFinals_JacobIvan\venv\Scripts\python.exe Z:\OSAL601-IDB2\FINALS\TermProjectFinals_JacobIvan\TermProject2PartB_JacobIvan.py
Matrix 1:
Inorder traversal: b d a e g h c f r
Preorder traversal: r a b d c e g h f
Postorder traversal: d b h g e f c a r

Matrix 2:
Inorder traversal: c a d r b e f g
Preorder traversal: r a c d b e f g
Postorder traversal: c d a g f e b r

Matrix 3:
Inorder traversal: a f c r d b e
Preorder traversal: r a c f b d e
Postorder traversal: f c a d e b r

Matrix 4:
Inorder traversal: g c h a d r i e b f
Preorder traversal: r a c g h d b e i f
Postorder traversal: g h c d a i e f b r

Process finished with exit code 0
```