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Test cases are given in test folder located in the project folder ProjectTest1 should include all the unit testing.

Github:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47>

Tree Branch BFS:

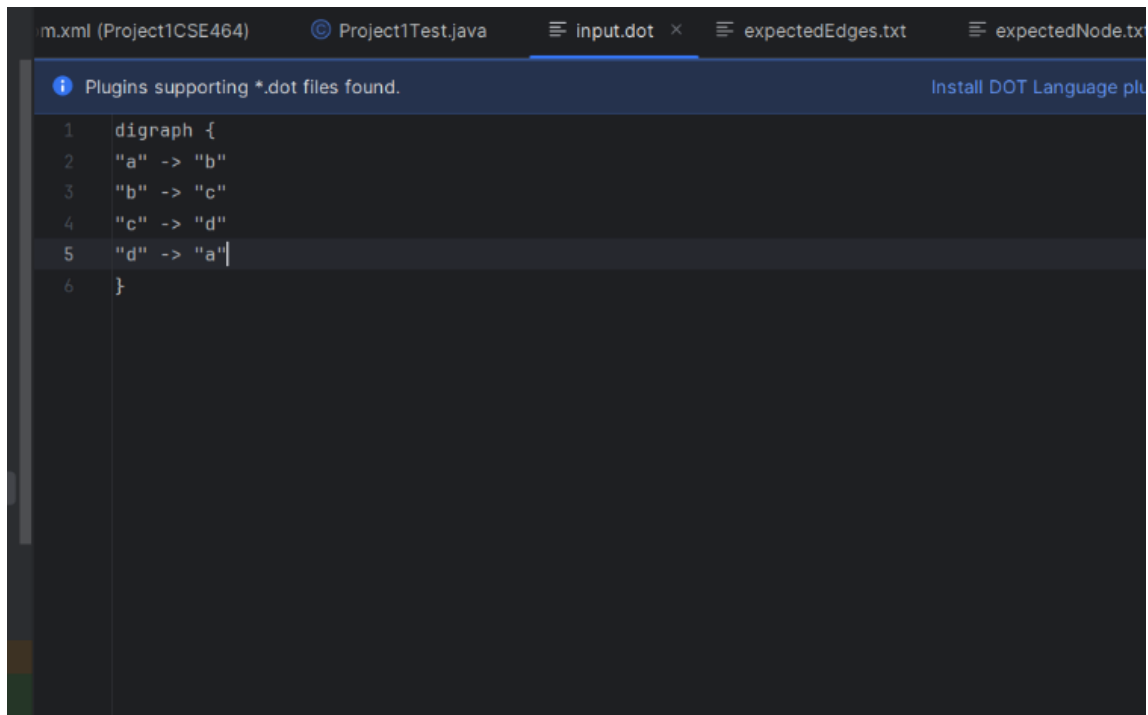
<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/bfs>

Tree Branch DFS:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/dfs>

Expected outputs:

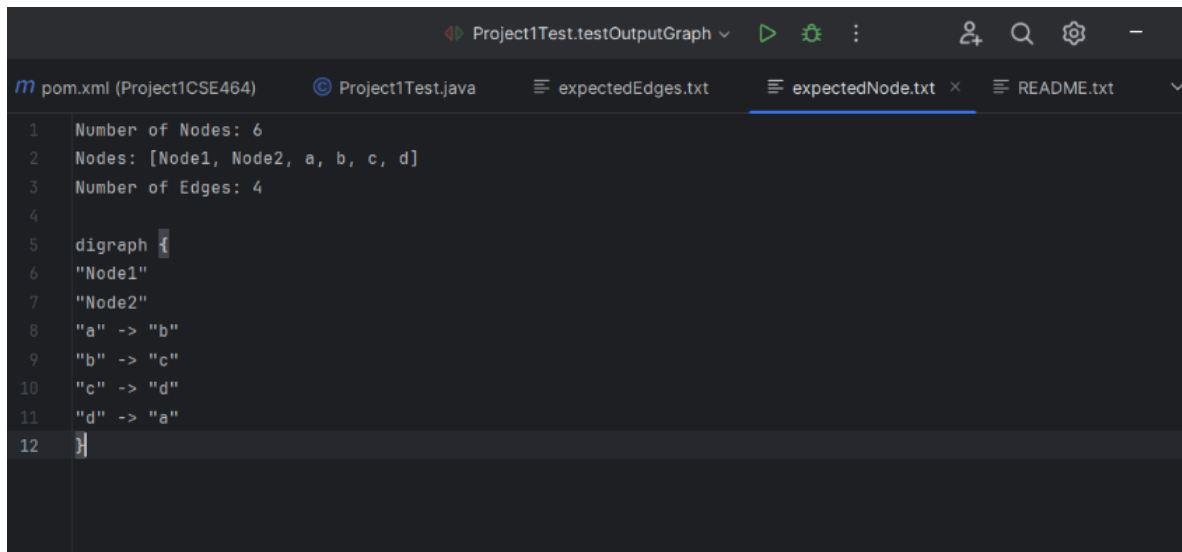
Expected for feature 4 testOutputDotGraph



The screenshot shows an IDE with several tabs: pom.xml (Project1CSE464), Project1Test.java, input.dot, expectedEdges.txt, and expectedNode.txt. The 'input.dot' tab is active, displaying a DOT language definition for a directed graph with four nodes (a, b, c, d) and four edges forming a cycle. A notification bar at the top states 'Plugins supporting *.dot files found.' with a link to 'Install DOT Language plugin'.

```
1 digraph {
2   "a" -> "b"
3   "b" -> "c"
4   "c" -> "d"
5   "d" -> "a"
6 }
```

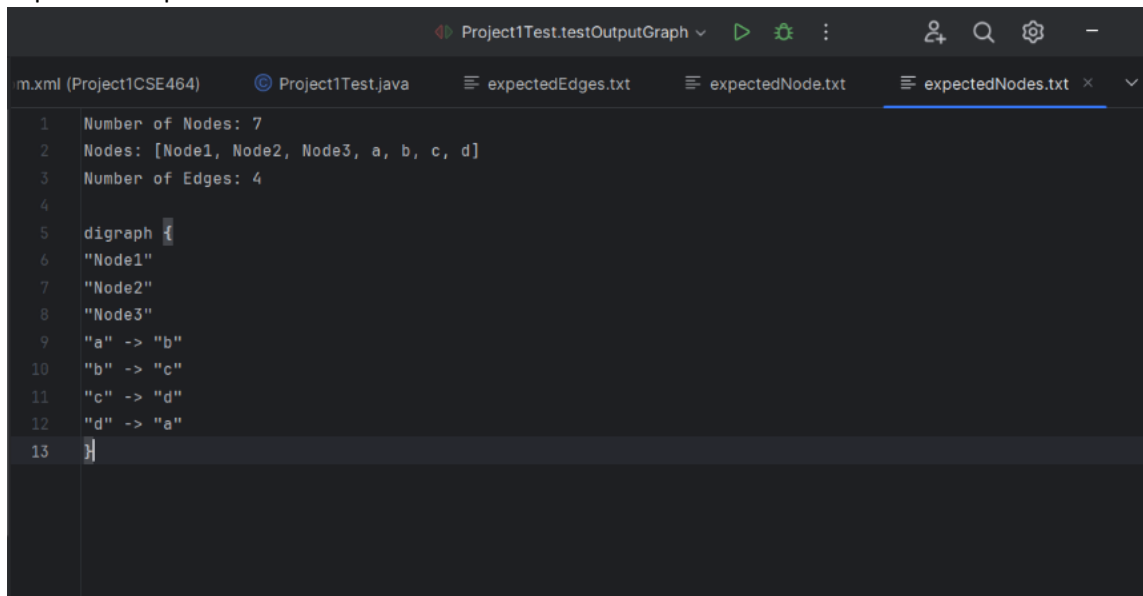
Expected output or feature 2 addNode



The screenshot shows an IDE with tabs: pom.xml (Project1CSE464), Project1Test.java, expectedEdges.txt, expectedNode.txt, and README.txt. The 'expectedNode.txt' tab is active, displaying the expected output of the DOT file. The output includes the number of nodes (6), the list of nodes (Node1, Node2, a, b, c, d), the number of edges (4), and the DOT language definition for the graph.

```
1 Number of Nodes: 6
2 Nodes: [Node1, Node2, a, b, c, d]
3 Number of Edges: 4
4
5 digraph {
6   "Node1"
7   "Node2"
8   "a" -> "b"
9   "b" -> "c"
10  "c" -> "d"
11  "d" -> "a"
12 }
```

Expected output for feature 2 addNodes

A screenshot of an IDE window showing a Java file named Project1Test.java. The file contains a test method testOutputGraph. The code is as follows:

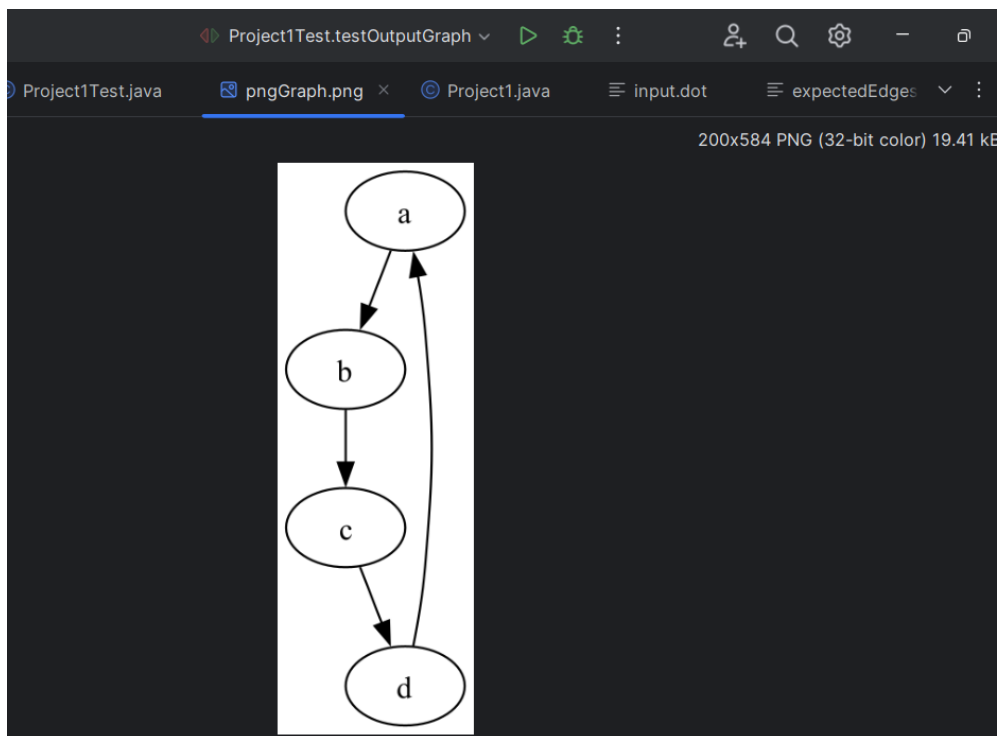
```
1 Number of Nodes: 7
2 Nodes: [Node1, Node2, Node3, a, b, c, d]
3 Number of Edges: 4
4
5 digraph {
6   "Node1"
7   "Node2"
8   "Node3"
9   "a" -> "b"
10  "b" -> "c"
11  "c" -> "d"
12  "d" -> "a"
13 }
```

The IDE interface includes a toolbar at the top with icons for running, debugging, and other actions. The file explorer on the left shows the project structure with files m.xml, Project1Test.java, expectedEdges.txt, expectedNode.txt, and expectedNodes.txt. The expectedNodes.txt file is currently selected and its content is displayed in the main editor area.

Expected output for feature 3 addEdge

```
Project1Test.testOutputGraph
pom.xml (Project1CSE464) Project1Test.java expectedEdges.txt README.txt Project1.java
1 Number of Nodes: 6
2 Nodes: [Node1, Node2, a, b, c, d]
3 Number of Edges: 5
4
5 digraph {
6   "a" -> "b"
7   "b" -> "c"
8   "c" -> "d"
9   "d" -> "a"
10  "Node1" -> "Node2"
11 }
```

Expected output for feature 4 outputGraphics



Expected Output for removeNode

```
Number of Nodes: 6
Nodes: [Node1, Node3, a, b, c, d]
Number of Edges: 4

digraph {
  "Node3"
  "Node1"
  "c" -> "d"
  "d" -> "a"
  "a" -> "b"
  "b" -> "c"
}
```

Expected Output for removeNodes

```
Number of Nodes: 5
Nodes: [Node3, a, b, c, d]
Number of Edges: 4

digraph {
  "Node3"
  "c" -> "d"
  "d" -> "a"
  "a" -> "b"
  "b" -> "c"
}
```

Expected output for removeEdge

```
Number of Nodes: 6
Nodes: [Node1, Node2, a, b, c, d]
Number of Edges: 5

digraph {
  "a" -> "b"
  "b" -> "c"
  "c" -> "d"
  "d" -> "a"
  "Node2" -> "Node1"
}
```

The error files like `removeNodeError`, `removeNodesError`, and `removeEdgeError` should all return the error message into the terminal. As well as just compare the output

```
e does not exist in graph
```

```
e does not exist in graph
```

```
Edge from a to e does not exist
```

Github Commits:

Feature 1:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/13da5df15d70f137599f0d0548c08deca4fbdecf>

Feature 2:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/82dfd0cf6478be38794919aa65f49d4b758ccca6>

Feature 3:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/66fa44ecc89a2b389f3e56fd61a6584742bd2ac1>

Feature 4:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/21d75d8c94ba273ff7bbd3bed34fe07e4f2d3cc1>

Feature Remove:

<https://github.com/Sgomez47-ASU/CSE464-2023-Sgomez47/tree/52c998e285aa93415b7ad7906e72960d2268cbeb>