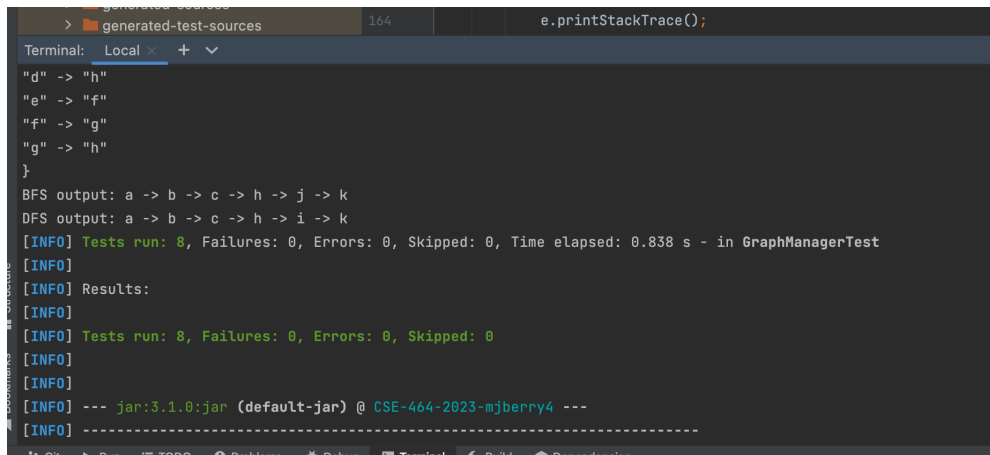


GitHub Repo: <https://github.com/accfmax95/CSE-464-2023-mjberry4>

### How to Run the BFS and DFS Functions -

1. Once the code has been downloaded and opened in IntelliJ (or whatever IDE you are using), type 'mvn package' into your IDE's terminal. This will install the necessary libraries onto your project structure. NOTE: If you want to run the program with the .jar file created by maven, type this command: 'mvn clean compile assembly:single'. This will install the .jar file with the necessary dependencies to execute the Part1.java file. This base file has just a few lines to test the GraphManager. You can modify this file for further testing.
2. Once you run 'mvn package', you will notice the test cases run in console. All test cases should pass if the BFS and DFS function is working correctly.
3. If you would like to test the program manually, you can open the GraphManagerTest.java file and run the testGraphSearch function at the bottom. The inputs I am using for BFS and DFS are as follows:
  - a. BFS - GraphSearch(src, dst, Algorithm.BFS)
    - i. Output should be "a -> b -> c -> h -> j -> k"
  - b. BFS - GraphSearch(src, dst, Algorithm.DFS)
    - i. Output should be "a -> b -> c -> h -> i -> k"
  - c. NOTE: If you want to test different inputs by modifying the test functions, you will also have to modify what the output should be in order for the new test case to pass. To change the src value and dst value, simply modify the letter of the assigned node for the src and dst variables in the test function (They are "a" and "k" as default).
4. Here is a screenshot of the correct output when running 'mvn package'. As you can see, all the test cases pass, and I have displayed the output of both the DFS and BFS algorithm for the input "a" and "k" as the src and dst.

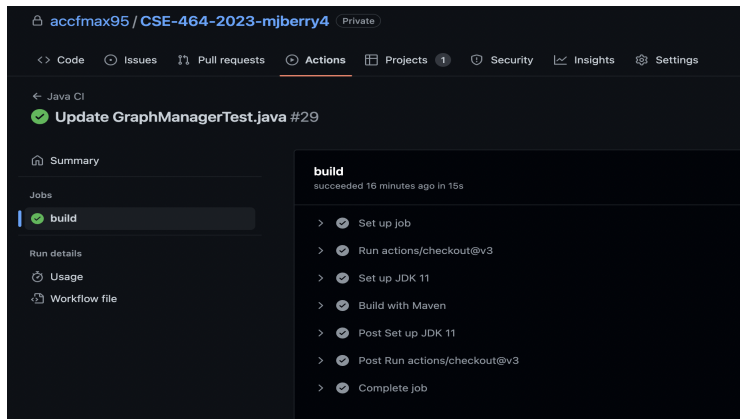


```
> generated-test-sources 164 e.printStackTrace();
Terminal: Local x + v
"d" -> "h"
"e" -> "f"
"f" -> "g"
"g" -> "h"
}
BFS output: a -> b -> c -> h -> j -> k
DFS output: a -> b -> c -> h -> i -> k
[INFO] Tests run: 8, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.838 s - in GraphManagerTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 8, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- jar:3.1.0:jar (default-jar) @ CSE-464-2023-mjberry4 ---
[INFO] -----
It Git Run TODO Problems Debug Terminal Build Dependencies
```

### GitHub Commits, Branches, and Merges -

1. Here is a history of my commits, merges and everything else listed in the Actions tab of my GitHub: <https://github.com/accfmax95/CSE-464-2023-mjberry4/actions>
2. You can view a specific history of my commits here:  
<https://github.com/accfmax95/CSE-464-2023-mjberry4/commits/master>

3. In this screenshot, you can see that my Continuous Integration is set up properly. This is one example of the build being complete.



4. Here I will list a series of screenshots that shows each branch being created, committed, and eventually merged into the master branch:

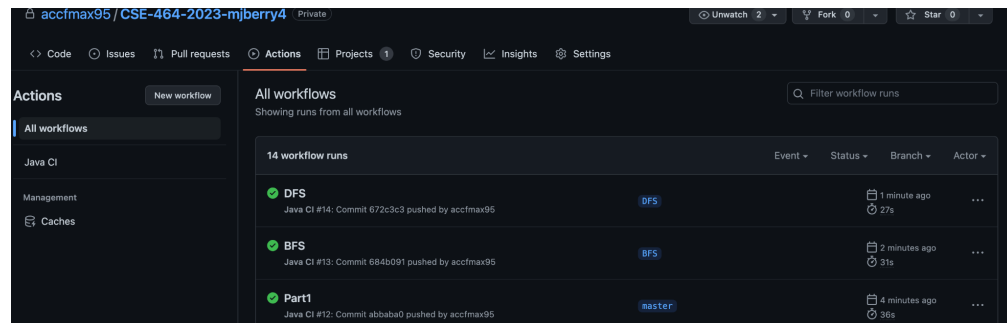
- a. The DFS, BFS, and Part1 being committed separately.

Commit for BFS, which contains the original GraphSearch for BFS -

<https://github.com/accfmax95/CSE-464-2023-mjberry4/commit/7b86dc7ce6bf5a37ad6eb2e21c7cca74bb30e22e#diff-454107ab9f9dec7212c3aee184598948113f9c4b4c6986bf73f0ae80210f6cd2>

Commit for DFS, which contains the GraphSearch for DFS -

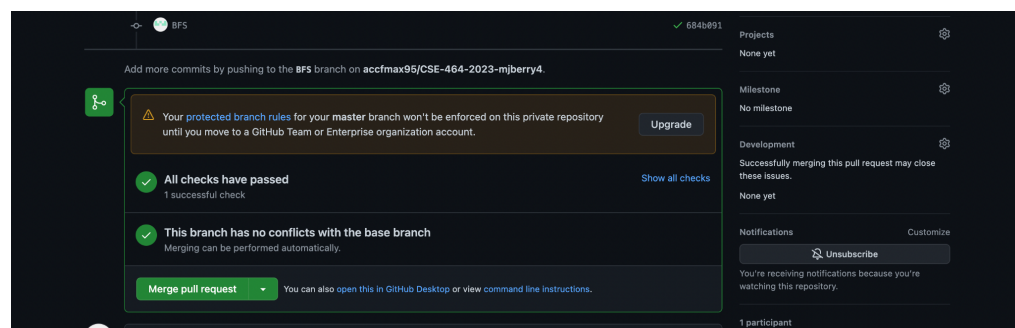
<https://github.com/accfmax95/CSE-464-2023-mjberry4/commit/672c3c3fc3c4adb5902ec6caa28f2d5530c6ae7f>



- b. The BFS branch being merged with the main branch.

<https://github.com/accfmax95/CSE-464-2023-mjberry4/actions/runs/4527563758>

<https://github.com/accfmax95/CSE-464-2023-mjberry4/commit/66966d05d4f89f1e67f3bb8ba33a14bca7c9602>



- https://github.com/accfmax95/CSE-464-2023-mjberry4/actions/runs/4527646628  
https://github.com/accfmax95/CSE-464-2023-mjberry4/commit/252e8ffb98bdcc0bb30026a06871f75094ff5597

File	Line	Code
GraphManager.java	169	Graphviz.fromGraph(graph).width(700).render(Format.PNG).toFile(new File(filename));
src/main/java/GraphManager.java	170	break;
	171	case "svg":
	172	case "SVG":
test.java	173	
src/test/java/test.java	174	Graphviz.fromGraph(graph).width(700).render(Format.SVG).toFile(new File(filename));
	175	break;
	176	}
	177	}
	178	
	179	public String GraphSearch(MutableNode src, MutableNode dst, Algorithm algo) {
	180	
	181	if (algo == Algorithm.DFS) {
	182	
	183	String path = "";
	184	Map<MutableNode, MutableNode> parent = new HashMap<>();
	185	Stack<MutableNode> stack = new Stack<>();
	186	
	187	if (src == null    dst == null) {
	188	
	189	return null;
	190	}
	191	
	192	stack.push(src);
	193	

**accfmax95** added 3 commits 8 minutes ago

- b932f3f Labels
- Merge remote-tracking branch 'origin/BFS' into BFS 118d896 None yet
- BFS 684db91 Projects
- Merge branch 'master' into BFS 66966d0 Verified None yet

**accfmax95** merged commit **abd15f3** into **master** now  
1 check passed

[View details](#) [Revert](#)

---

**Pull request successfully merged and closed**  
You're all set—the **BFS** branch can be safely deleted.

[Delete branch](#)

Development

Successfully merging this pull request may close these issues.

No yet

Notifications Customize

- Actions

New workflow

All workflows

Java CI

Management

Caches

All workflows

Showing runs from all workflows

18 workflow runs

Event

Status

Branch

Actor

<div> <div>✓</div> <div>Merge pull request #6 from accfmax95/DFS</div> <div>Java CI #18: Commit 695a5f9 pushed by accfmax95</div> <div>master</div> </div> <div> <div>1 minute ago</div> <div>25s</div> <div>...</div> </div>
<div> <div>✓</div> <div>Merge branch 'master' into DFS</div> <div>Java CI #17: Commit 252a8ff pushed by accfmax95</div> <div>DFS</div> </div> <div> <div>1 minute ago</div> <div>22s</div> <div>...</div> </div>
<div> <div>✓</div> <div>Merge pull request #5 from accfmax95/BFS</div> <div>Java CI #16: Commit abd15f3 pushed by accfmax95</div> <div>master</div> </div> <div> <div>17 minutes ago</div> <div>34s</div> <div>...</div> </div>
<div> <div>✓</div> <div>Merge branch 'master' into BFS</div> <div>Java CI #15: Commit 66966d0 pushed by accfmax95</div> <div>BFS</div> </div> <div> <div>17 minutes ago</div> <div>26s</div> <div>...</div> </div>
<div> <div>✓</div> <div>DFS</div> <div>Java CI #14: Commit 672c3c3 pushed by accfmax95</div> <div>DFS</div> </div> <div> <div>22 minutes ago</div> <div>27s</div> <div>...</div> </div>
<div> <div>✓</div> <div>BFS</div> <div>Java CI #13: Commit 684b091 pushed by accfmax95</div> <div>BFS</div> </div> <div> <div>24 minutes ago</div> <div>31s</div> <div>...</div> </div>
<div> <div>✓</div> <div>Part1</div> <div>Java CI #12: Commit abbab0 pushed by accfmax95</div> <div>master</div> </div> <div> <div>26 minutes ago</div> <div>36s</div> <div>...</div> </div>