Git Command Semantics
Practice Problems

Each of the following problems presents a Git log graph (log messages omitted) of a local repo and a scenario. Update the graph by crossing out and/or adding appropriate text.

- You may or may not need to use the two blank lines above the graph.
- If you need to add a commit, use the hash `c1c1c1c`.
- If a command would be rejected by GitHub (e.g., because the remote contains work that you do not have locally), write “REJECTED” on the top line.
- Assume that all remote bookmarks depicted are up to date.

I have included an example problem and solution below to help clarify what’s expected.

Example Problem

Scenario: Developer makes changes to the code, stages the changes, and commits.

```
* 86b8116 (HEAD -> master, iss1)
* dc003f8
* 026c6cf
```

Example Solution

```
* c1c1c1 (HEAD -> master)
* 86b8116 (iss1)
* dc003f8
* 026c6cf
```

1. Scenario: Developer runs `git checkout -b iss2`.

```
* 97c9227 (HEAD -> master)
* ed11409
* 137d7d0
```

2. Scenario: Developer runs `git checkout -b iss12`.

```
  * 04ca8c6 (master)
* | 3283dd7 (HEAD -> iss11)
|/
* a8da338
* fe2251a
```

3. Scenario: Developer makes changes to the code, stages the changes, and commits.

```
  * 04ca8c6 (master)
* | 3283dd7 (HEAD -> iss2)
|/
* a8da338
* fe2251a
```

4. Scenario: Developer makes changes to the code, stages the changes, and commits.

```
  * d3994b3 (HEAD -> iss13)
* | 0152ac4 (origin/master, master)
|/
* 77a9025 (origin/iss13)
```

5. Scenario: Developer runs `git checkout iss4`.

```
  * d197593 (iss4)
* | 0f50aa4 (iss3)
|/
* 75a7005 (HEAD -> master)
* cbff2e7
```

6. Scenario: Developer runs `git checkout master`.

```
  * d197593 (HEAD -> iss14)
* | 0f50aa4 (iss15)
|/
* 75a7005 (master)
* cbff2e7
```

7. Scenario: Developer runs `git merge iss5`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
  * d3994b3 (iss6)
* | 0152ac4 (iss5)
|/
* 77a9025 (HEAD -> master)
* cdf1207
```

8. Would this be a fast-forward merge?

   a. Yes

   b. No

9. Scenario: Developer runs `git merge master`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
  * ff72baa (HEAD -> iss16)
* | 7b6c2b2 (master)
|/
* 6c61cdb
* 3e27f99
```

10. Would this be a fast-forward merge?

    a. Yes

    b. No

11. Scenario: Developer runs `git merge iss7`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
  * g4ca8c6 (iss7)
* | 3283dd7 (HEAD -> master)
|/
* a8da338
* fe2251a
```

12. Would this be a fast-forward merge?

    a. Yes

    b. No

13. Scenario: Developer runs `git merge iss18`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
  * d3994b3 (iss17)
* | 0152ac4 (iss18)
|/
* 77a9025 (HEAD -> master)
* cdf1207
```

14. Would this be a fast-forward merge?

    a. Yes

    b. No

15. Scenario: Developer runs `git pull origin master`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
* a3b25e7 (origin/master, master)
* e41c5b6
* 9d63832 (HEAD -> iss8, origin/iss8)
* 40f26d8
```

16. Scenario: Developer runs `git pull origin master`. Assume that auto-merge, if used, would complete successfully with no merge conflicts.

```
  * d3994b3 (HEAD -> iss19, origin/iss19)
* | 0152ac4 (origin/master, master)
|/
* 77a9025
```

17. Scenario: Developer runs `git push`. Assume that auto-merge, if used, would complete successfully with no merge conflicts. Assume that all issue branches are tracking with their corresponding branches on the remote.

```
  * d3994b3 (HEAD -> iss9)
* | 0152ac4 (origin/master, master)
|/
* 77a9025 (origin/iss9)
```

18. Scenario: Developer runs `git push`. Assume that auto-merge, if used, would complete successfully with no merge conflicts. Assume that all issue branches are tracking with their corresponding branches on the remote.

```
  * 79bb885 (HEAD -> iss20)
* | 33a99ac (origin/iss20, master)
|/
* d23531d (origin/master)
```

19. Scenario: Developer runs `git push origin master`. Assume that auto-merge, if used, would complete successfully with no merge conflicts. Assume that all issue branches are tracking with their corresponding branches on the remote.

```
  * e28a3c2 (HEAD -> iss10, origin/iss10)
  * f40dd3b
* | 1061bb5 (origin/master, master)
|/
* 86b8116
```

20. Scenario: Developer runs `git push`. Assume that auto-merge, if used, would complete successfully with no merge conflicts. Assume that all issue branches are tracking with their corresponding branches on the remote.

```
  * e28a3c2 (HEAD -> iss21)
  * f40dd3b (origin/iss21)
* | 1061bb5 (master)
|/
* 86b8116 (origin/master)
```