Syncode (Group 2) DVCS Acceptance Tests

Test results for SynCode DVCS:
https://docs.google.com/spreadsheets/d/1XJO70_vmo5c07UtQ6fIAmrdElotLfyStYXOMTEGiAU4/edit?usp=sharing

Level 1: Init

1a - Init - Basic Initialization:
- `<dvcs> init`: Initialize a new repository.
- `<dvcs> status`: Check the status to ensure the repository is clean.
- Check to see if .dvcs directory with a metadata file for the repository are created in the cwd.

1b - Duplicate Initialization Check:
- `<dvcs> init`: Try to initialize a repository in the same location with the same name.
- Verify that it fails with an appropriate error message.

Level 2: Add, Commit, Checkout

2a - Add, Commit, Checkout:
- `<dvcs> init`: Initialize a new repository.
- Create a small file and add it using `<dvcs> add`.
- `<dvcs> commit <"commit message">`: Commit the changes.
- Create a new branch using `<dvcs> checkout <new_branch>`.
- Verify that the branch is created and switched to using `<dvcs> status`.

2b - Concurrent Modifications:
- `<dvcs> init`: Initialize a new repository.
- Create a file, add and commit it.
- Create a new branch.
- Make modifications on both branches.
- Attempt to merge the branches using `<dvcs> merge`.
- Verify that it handles conflicts appropriately.

Level 3: Status, Heads, Cat, Log

3a - Status, Heads, Cat, Log:
- `<dvcs> init`: Initialize a new repository.

- Create, add, and commit a file.
- `<dvcs> status`: Check the status.
- `<dvcs> heads`: Check for branch heads.
- `<dvcs> cat <file>`: Print the contents of a file.
- `<dvcs> log`: View the commit history.

3b - Status with Untracked Files:
- `<dvcs> init`: Initialize a new repository.
- Create an untracked file.
- `<dvcs> status`: Check the status.
- Verify that the untracked file is listed as untracked.

Level 4: Remove, Diff

4a - Remove and Diff:
- `<dvcs> init`: Initialize a new repository.
- Create, add, and commit a file.
- `<dvcs> status`: Check the status.
- `<dvcs> remove <file>`: Remove the file.
- `<dvcs> commit -m "File removed"`: Commit the removal.
- `<dvcs> status`: Check the status.
- Create a new file.
- `<dvcs> diff`: Check the differences between the working directory and the last commit.

4b - Diff Between Branches:
- `<dvcs> init`: Initialize a new repository.
- Create a file, add and commit it.
- Create a new branch.
- Make changes in both branches.
- `<dvcs> diff <branch1> <branch2>`: Check the differences between the branches.

Level 5: Merge

5a - Basic Merge:
- `<dvcs> init`: Initialize a new repository.
- Create a file, add and commit it.
- Create a new branch.
- Make changes in both branches.

- `<dvcs> merge <branch>`: Merge the changes.
- Verify that there are no conflicts.

5b - Merge Conflict:
- `<dvcs> init`: Initialize a new repository.
- Create a file and commit it.
- Create a new branch.
- Make conflicting changes in both branches.
- Attempt to merge the branches using `<dvcs> merge <branch>`.
- Returns a MergeError due to conflicts.

Level 6: Clone

6a - Clone Repository:
- `<dvcs> init`: Initialize a new repository (original).
- Create, add, and commit a file.
- `<dvcs> clone <source-repo> [destination]`: Clone the original repository to a new location.
- Verify that the cloned repository has the same content.

6b - Clone Empty Repository:
- `<dvcs> init`: Initialize a new repository (original).
- `<dvcs> clone <source-repo> [destination]`: Clone the original repository (which is empty) to a new location.
- Verify that the cloned repository is also empty.

Level 7: Pull, Push

7a - Pull Changes from Remote:
- `<dvcs> init`: Initialize a new repository (local).
- `<dvcs> init`: Initialize another repository (remote or at a different location).
- Make changes in the remote repository.
- `<dvcs> pull <remote-repo>`: Pull changes from the remote repository to the local repository.
- Verify that the changes are applied to the local repository.

7b - Push Changes to Remote:
- `<dvcs> init`: Initialize a new repository (local).
- `<dvcs> init`: Initialize another repository (remote or at a different location).

- Make changes in the local repository.
- `<dvcs> push <remote-repo>`: Push changes from the local repository to the remote repository.
- Verify that the changes are applied to the remote repository.