Git Assignment

Bhavik Bhagat - A00494758

1. Repository Initialization and Status Check

```
mkdir Git_Assignment1_A00494758
cd Git_Assignment
git init
git status
```
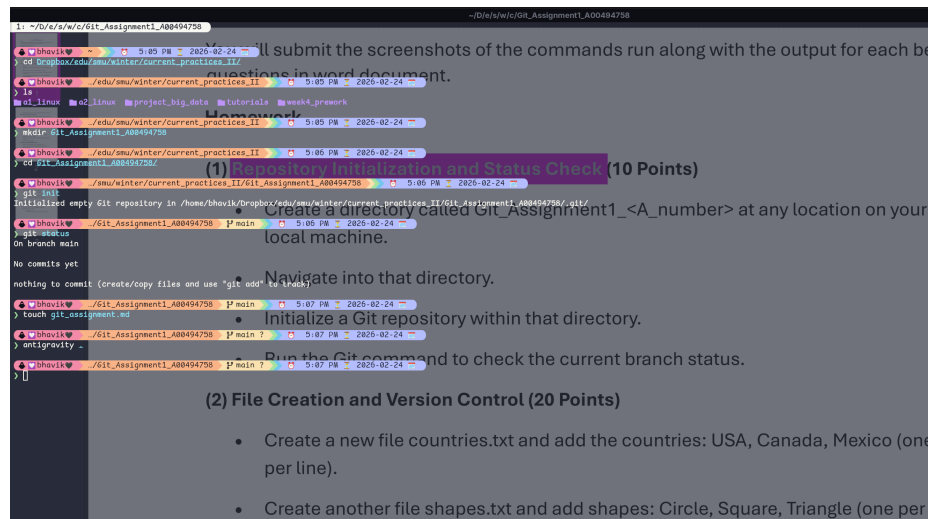

Figure 1: q1

2. File Creation and Version Control

```
touch countries.txt
echo "USA" > countries.txt
echo "Canada" >> countries.txt
echo "Mexico" >> countries.
touch shapes.txt
echo "Circle" >> shapes.txt
echo "Square" >> shapes.txt
echo "Triangle" >> shapes.txt
cat countries.txt shapes.txt
git status
git commit -m "Adding Countries and Shapes"
touch numbers.txt
echo "One" > numbers.txt
echo "Two" >> numbers.txt
```

```
echo "Three" >> numbers.txt
git add numbers.txt
git commit -m "Adding numbers"
git log
```

```
bhavik♥   …/Git_Assignment1_A00494758   main ?      5:15 PM   2026-02-24
❯ cat countries.txt shapes.txt

        File: countries.txt

  1     USA
  2     Canada
  3     Mexico

        File: shapes.txt

  1     Circle
  2     Square
  3     Triangle
```

Initialize a Git reposit

Run the Git comman

(2) File Creation and Versio

Create a new file cou

```
bhavik♥   …/Git_Assignment1_A00494758   main ?      5:15 PM   2026-02-24
❯ git status
On branch main

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        countries.txt
        git_assignment.md
        q1.png
        shapes.txt

nothing added to commit but untracked files present (use "git add" to track)
```

per time).

Create another file sh

time).

Run the Git comman

```
bhavik♥   …/Git_Assignment1_A00494758   main ?      5:15 PM   2026-02-24
❯ git add countries.txt shapes.txt
```

Use the Git comman

check the status

```
bhavik♥   …/Git_Assignment1_A00494758   main +?      5:15 PM   2026-02-24
❯ git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   countries.txt
        new file:   shapes.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        git_assignment.md
        q1.png
```

Commit your staged

Countries and Shap

Create a new file num

Add numbers.txt to th

```
bhavik♥   …/Git_Assignment1_A00494758   main +?      5:16 PM   2026-02-24
❯ git commit -m "Adding Countries and Shapes"
[main (root-commit) defe015] Adding Countries and Shapes
 2 files changed, 6 insertions(+)
 create mode 100644 countries.txt
 create mode 100644 shapes.txt
```

```
bhavik♥   …/Git_Assignment1_A00494758   main ?      5:16 PM   2026-02-24
❯ 
```

3. Branch Creation and Commit

```
git checkout -b LearnAnalytics
touch languages.txt
echo "R" > languages.txt
echo "Python" >> languages.txt
echo "NumPy" >> languages.txt
git add languages.txt
git commit -m "Add: languages to Learn-Analystics branch"
git log
```

4. Merging Conflicting Changes

```
git checkout -b user1
```

Make changes

```
git add countries.txt
git commit -m "change: countries to European Countries"
```

```
1: ~/D/e/s/w/c/Git_Assignment1_A00494758

 bhavik    …/Git_Assignment1_A00494758    main ?    11:02 PM    2026-02-24
❯ git checkout -b LearnAnalytics
Switched to a new branch 'LearnAnalytics'

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:04 PM    2026-02-24
❯ touch languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:05 PM    2026-02-24
❯ echo "R" >> languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:05 PM    2026-02-24
❯ echo "Python" >> languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:05 PM    2026-02-24
❯ echo "NumPy" >> languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:06 PM    2026-02-24
❯ git status
On branch LearnAnalytics
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        git_assignment.md
        languages.txt
        q1.png
        q2_1.png
        q2_2.png

nothing added to commit but untracked files present (use "git add" to track)

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:06 PM    2026-02-24
❯ git add languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics +?    11:06 PM    2026-02-24
❯ git commit -m "Add: languages to Learn-Analytics branch"
[LearnAnalytics ea886d9] Add: languages to Learn-Analytics branch
 1 file changed, 3 insertions(+)
 create mode 100644 languages.txt

 bhavik    …/Git_Assignment1_A00494758    LearnAnalytics ?    11:06 PM    2026-02-24
❯ git branch -a
* LearnAnalytics
  main
```

Figure 2: q3

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Figure 3: q4_1

```
git checkout main
git checkout -b user2
```

Make changes

```
git add countries.txt
git commit -m "change: countries to Asian Countries"

git checkout -b combine_countries
git merge user1
git add countries.txt
git commit -m "change: resolved merge conflicts by keeping all countries"
```

5. Stashing and Applying Changes

```
git checkout main
git checkout -b user3
echo "Australia" >> countries.txt
echo "Brazil" >> countries.txt

git stash
git checkout main
echo "UK" >> countries.txt
git add countries.txt
git commit -m "add: UK"

git checkout user3
git stash pop
```

```
 bhavik  …/Git_Assignment1_A00494758   user1 ?    11:12 PM   2026-02-24
❯ git checkout user2
Switched to branch 'user2'

 bhavik  …/Git_Assignment1_A00494758   user2 ?    11:12 PM   2026-02-24
❯ nvim countries.txt

 bhavik  …/Git_Assignment1_A00494758   user2 !?    11:13 PM   2026-02-24      in 12s

❯ cat countries.txt

        File: countries.txt

   1 ~    Japan
   2 ~    Chine
   3 ~    India


 bhavik  …/Git_Assignment1_A00494758   user2 !?    11:13 PM   2026-02-24
❯ git add countries.txt

 bhavik  …/Git_Assignment1_A00494758   user2 +?    11:13 PM   2026-02-24
❯ git commit -m "change: countries to Asian Countries"
[user2 0bc4a2d] change: countries to Asian Countries
 1 file changed, 3 insertions(+), 3 deletions(-)
```

Figure 4: q4_2

```
 bhavik  …/Git_Assignment1_A00494758   user2 ?    11:18 PM   2026-02-24
❯ git checkout -b combine_countries
Switched to a new branch 'combine_countries'

 bhavik  …/Git_Assignment1_A00494758   combine_countries ?    11:18 PM   2026-02-24
❯ git branch -a
  LearnAnalytics
* combine_countries
  main
  user1
  user2

 bhavik  …/Git_Assignment1_A00494758   combine_countries ?    11:18 PM   2026-02-24
❯ git merge user1
Auto-merging countries.txt
CONFLICT (content): Merge conflict in countries.txt
Automatic merge failed; fix conflicts and then commit the result.

 bhavik  …/Git_Assignment1_A00494758   combine_countries =?    11:18 PM   2026-02-24
❯ git add countries.txt

 bhavik  …/Git_Assignment1_A00494758   combine_countries +?    11:19 PM   2026-02-24
❯ git commit -m "change: resolved merge conflicts by keeping all countries"
[combine_countries fd97b9d] change: resolved merge conflicts by keeping all countries

 bhavik  …/Git_Assignment1_A00494758   combine_countries ?    11:19 PM   2026-02-24
❯ cat countries.txt

        File: countries.txt

   1     Japan
   2     Chine
   3     India
   4     Germany
   5     France
   6     Italy


 bhavik  …/Git_Assignment1_A00494758   combine_countries ?    11:19 PM   2026-02-24
❯
```

Figure 5: q4_3

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Figure 6: q5_1

Figure 7: q5_2

```
git add countries.txt
git commit -m "add: Australia and Brazil"
```


Figure 8: q5_3

6. Advanced Git Workflow

```
git checkout main
git checkout -b bugfix
touch bugfix.txt
echo "Bugfix" >> bugfix.txt
git add bugfix.txt
git commit -m "add: bugfix"
touch random.txt
echo "Random" >> random.txt
git add random.txt
git commit -m "add: random"

git checkout main
```

Figure 9: q6_1

```
git reflog
git cherry-pick 39ab44f
ls -la
```

In this case, cherry-pick took the bugfix.txt file from the bugfix branch and added it to the main branch.

```
❯ git reflog
ac255fd (HEAD -> main) HEAD@{0}: checkout: moving from bugfix to main
d7ea91e (bugfix) HEAD@{1}: commit: add: random
39ab44f HEAD@{2}: commit: add: bugfix
a6c8163 (user3) HEAD@{3}: checkout: moving from user3 to bugfix
a6c8163 (user3) HEAD@{4}: commit: add: Australia and Brazil
752b3b7 HEAD@{5}: checkout: moving from main to user3
ac255fd (HEAD -> main) HEAD@{6}: commit: add: UK
752b3b7 HEAD@{7}: checkout: moving from user3 to main
752b3b7 HEAD@{8}: reset: moving to HEAD
752b3b7 HEAD@{9}: checkout: moving from main to user3
752b3b7 HEAD@{10}: checkout: moving from combine_countries to main
fd97b9d (combine_countries) HEAD@{11}: commit (merge): change: resolved merge conflicts by keeping all c
0bc4a2d (user2) HEAD@{12}: checkout: moving from user2 to combine_countries
0bc4a2d (user2) HEAD@{13}: commit: change: countries to Asian Countries
752b3b7 HEAD@{14}: checkout: moving from user1 to user2
150c1cd (user1) HEAD@{15}: commit: change: contries to European Countries
752b3b7 HEAD@{16}: checkout: moving from main to user1
752b3b7 HEAD@{17}: checkout: moving from LearnAnalytics to main
ea886d9 (LearnAnalytics) HEAD@{18}: commit: Add: languages to Learn-Analytics branch
752b3b7 HEAD@{19}: checkout: moving from main to LearnAnalytics
752b3b7 HEAD@{20}: commit: Adding numbers
defe015 HEAD@{21}: commit (initial): Adding Countries and Shapes
```

```
❯ git cherry-pick 39ab44f
[main f688828] add: bugfix
 Date: Tue Feb 24 23:34:43 2026 -0400
 1 file changed, 1 insertion(+)
 create mode 100644 bugfix.txt
```

```
❯ git status
On branch main
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        git_assignment.md
        q1.png
        q2_1.png
        q2_2.png
        q3.png
        q4_1.png
        q4_2.png
        q4_3.png
        q5_1.png
        q5_2.png
        q5_3.png
        q6.1.png

nothing added to commit but untracked files present (use "git add" to track)
```

```
❯ ls -la
drwxrwxr-x    - bhavik 24 Feb 23:42 -I .git          .rw-rw-r-- 365k bhavik 24 Feb 17:16 -N q2_1.png     .rw-rw-r-- 169k bhavik 24 Feb 23:25 -N q5_1.png
.rw-rw-r--    7 bhavik 24 Feb 23:42 -- bugfix.txt     .rw-rw-r-- 318k bhavik 24 Feb 17:18 -N q2_2.png     .rw-rw-r-- 232k bhavik 24 Feb 23:30 -N q5_2.png
.rw-rw-r--   21 bhavik 24 Feb 23:41 -- countries.txt  .rw-rw-r-- 403k bhavik 24 Feb 23:09 -N q3.png      .rw-rw-r-- 280k bhavik 24 Feb 23:32 -N q5_3.png
.rw-rw-r-- 2.2k bhavik 24 Feb 23:35 -N git_assignment.md .rw-rw-r-- 217k bhavik 24 Feb 23:16 -N q4_1.png  .rw-rw-r-- 291k bhavik 24 Feb 23:38 -N q6_1.png
.rw-rw-r--   14 bhavik 24 Feb 17:17 -- numbers.txt    .rw-rw-r-- 182k bhavik 24 Feb 23:17 -N q4_2.png     .rw-rw-r--   23 bhavik 24 Feb 17:15 -- shapes.txt
.rw-rw-r-- 432k bhavik 24 Feb 17:10 -N q1.png        .rw-rw-r-- 267k bhavik 24 Feb 23:20 -N q4_3.png
```

```
❯ cat bugfix.txt
      File: bugfix.txt
   1  Bugfix
```

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