Lab#2 AIDI-2004: AI in Enterprise System
100943365 – Akshay Bharadva

1. **Initialized the repository and added the remote location.**

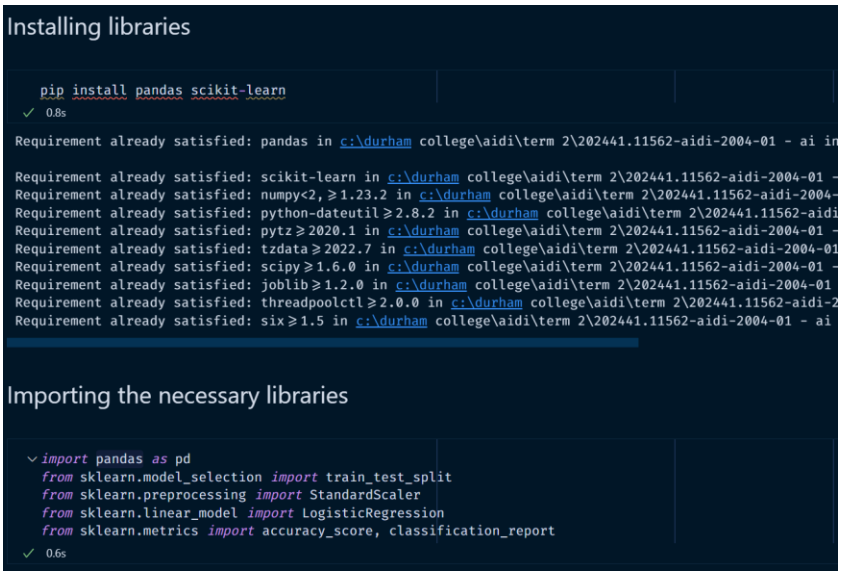
```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2
$ git init
Initialized empty Git repository in C:/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2/.git/

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git remote add origin https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git remote -v
origin  https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git (fetch)
origin  https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git (push)
```

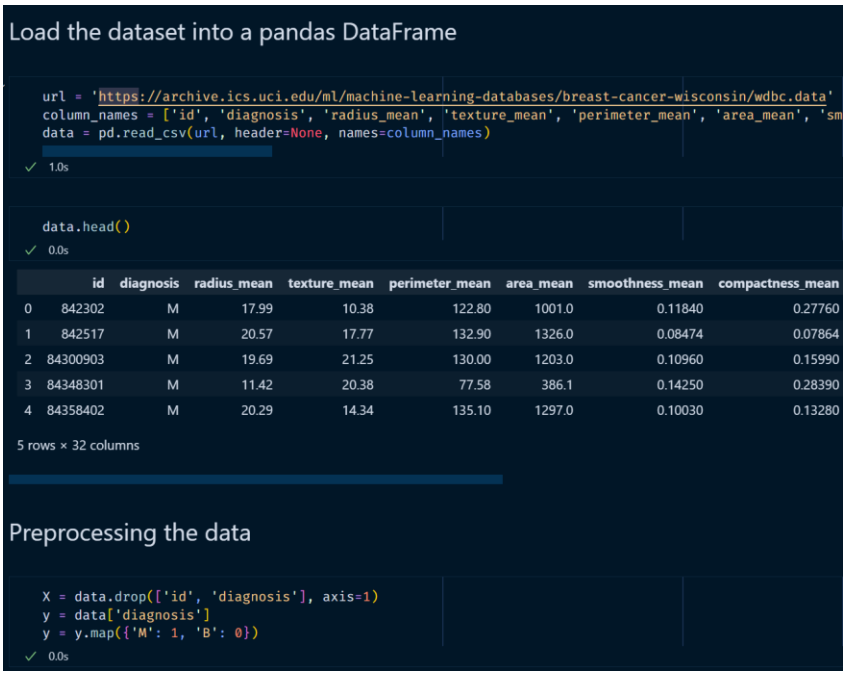
2. **Added the data given for the Lab#2 and then committed it.**

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        data/

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

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git add .
warning: in the working copy of 'data/wdbc.data', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'data/wdbc.names', LF will be replaced by CRLF the next time Git touches it

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git commit -m 'initialized the repo with the wdbc data'
[master (root-commit) 1e9361a] initialized the repo with the wdbc data
 2 files changed, 709 insertions(+)
 create mode 100644 data/wdbc.data
 create mode 100644 data/wdbc.names

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git log
commit 1e9361a8c5597d002113e199c9bc85a16682635d (HEAD -> master)
Author: Akshay Bharadva <akshaybharadva19@gmail.com>
Date:   Tue Feb 6 10:38:48 2024 -0500

    initialized the repo with the wdbc data
```

Lab#2 AIDI-2004: AI in Enterprise System
100943365 – Akshay Bharadva

3. **Now, I'm creating the v1 model, steps included are**
    a. **Installing libraries**
    b. **Importing packages**
    c. **Importing data into pandas**
    d. **Splitting the data**
    e. **Selecting the model**
    f. **Training the model**
    g. **Evaluating it and checking the accuracy**





Lab#2 AIDI-2004: AI in Enterprise System
100943365 – Akshay Bharadva

Split the data into training and testing sets

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
```

✓ 0.0s

Feature scaling

```
scaler = StandardScaler()
X_train = scaler.fit_transform(X_train)
X_test = scaler.transform(X_test)
```

✓ 0.0s

Model building

```
model = LogisticRegression()
model.fit(X_train, y_train)
```

✓ 0.0s

LogisticRegression ⓘ ⓘ
LogisticRegression()

Model evaluation

```
y_pred = model.predict(X_test)
print("Accuracy:", accuracy_score(y_test, y_pred))
print(classification_report(y_test, y_pred))
```

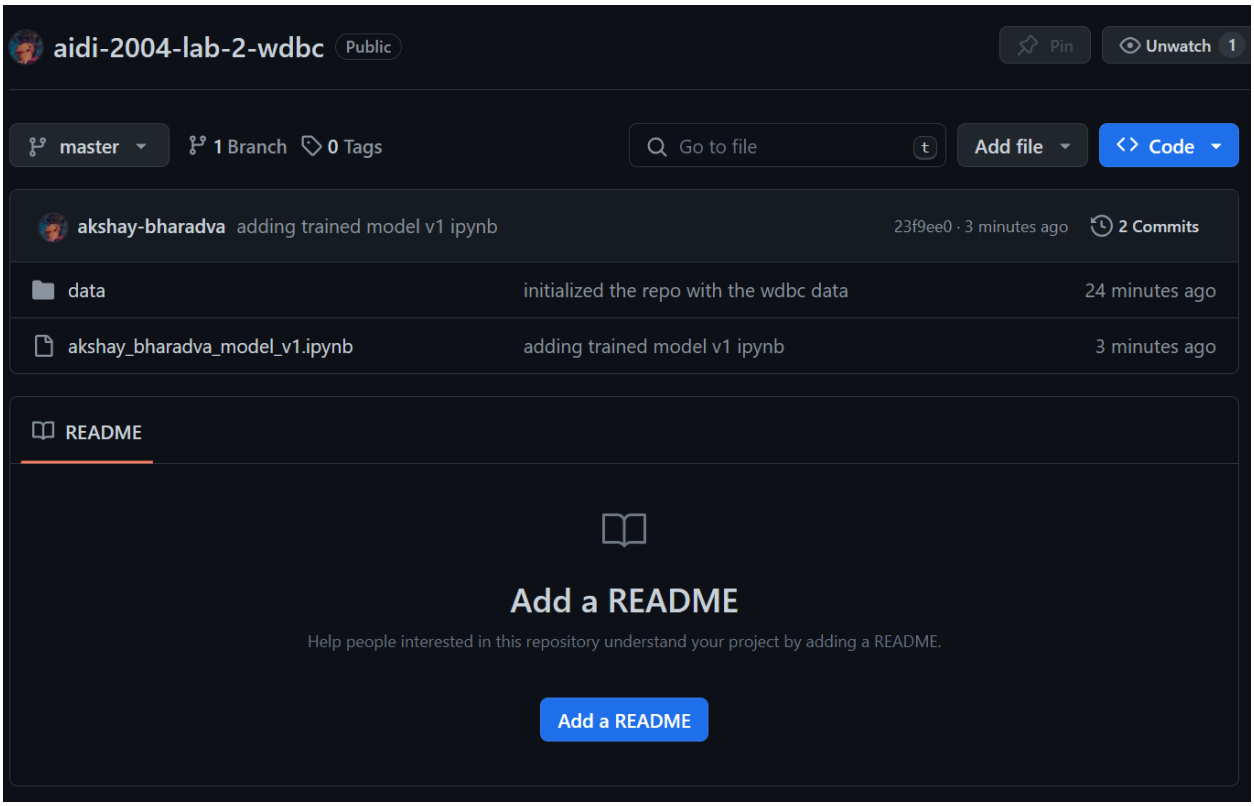
✓ 0.0s

```
Accuracy: 0.9736842105263158
              precision    recall  f1-score   support

           0       0.97      0.99      0.98        71
           1       0.98      0.95      0.96        43

    accuracy                           0.97       114
   macro avg       0.97      0.97      0.97       114
weighted avg       0.97      0.97      0.97       114
```

4. **Committing the akshay_bharadva_model_v1.ipynb to the master branch and pushing to the remote location.**

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git push
fatal: The current branch master has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin master

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetupRemote' in 'git help config'.


aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git push --set-upstream origin master
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 12 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (8/8), 56.45 KiB | 6.27 MiB/s, done.
Total 8 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

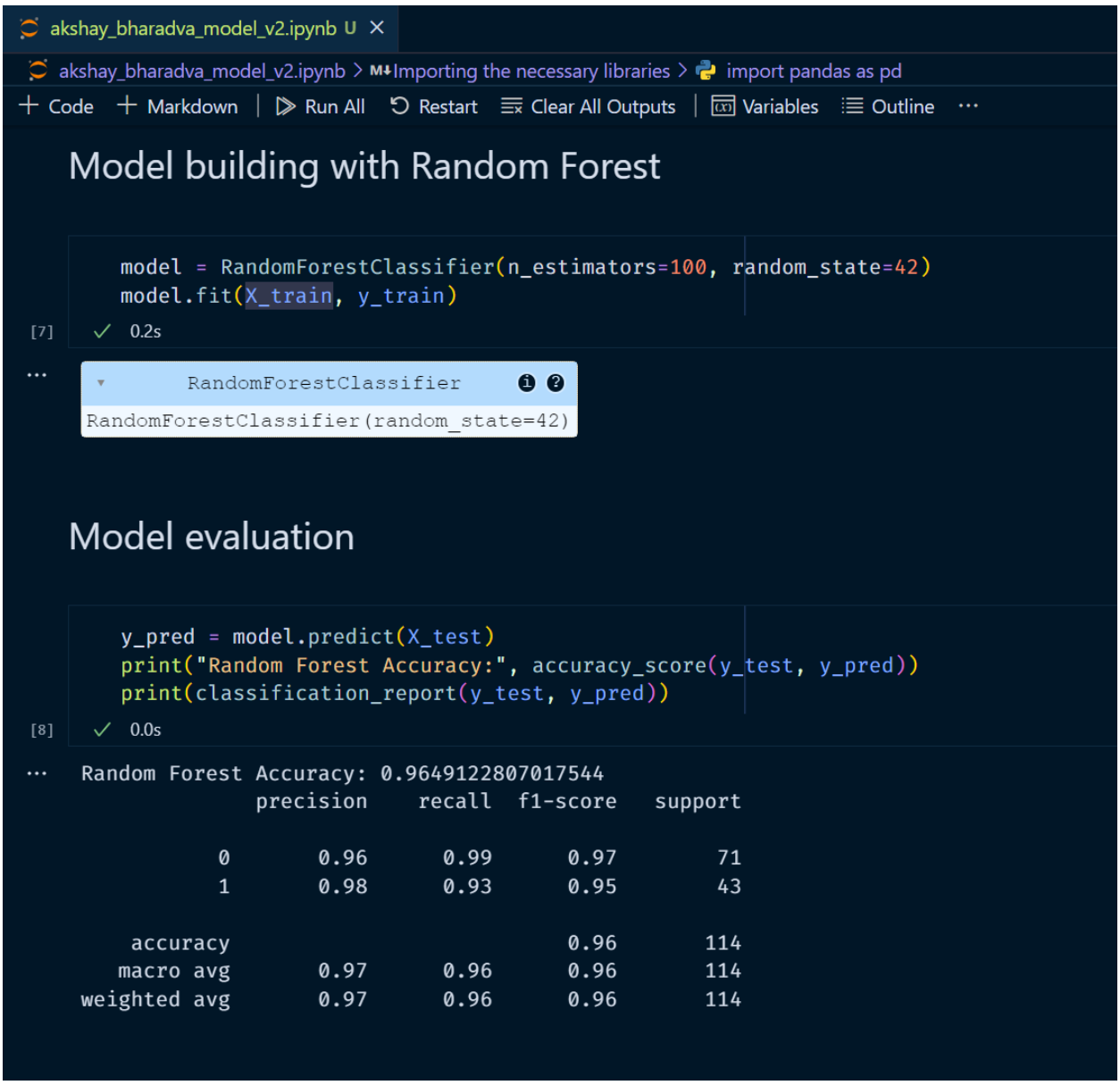
Checking to the remote.



5. **Created random-forest branch from the master branch by using the command,**
    a. **Git checkout -b random-forest**

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git checkout -b random-forest
Switched to a new branch 'random-forest'

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git branch
  master
* random-forest
```

6. **Adding the v2 model ipynb with the Random Forest Classifier Algoritham.**



Lab#2 AIDI-2004: AI in Enterprise System
100943365 – Akshay Bharadva

7. Committing akshay_bharadva_model_v2.ipynb and pushing it to the remote.

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git status
On branch random-forest
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        akshay_bharadva_model_v2.ipynb

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

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git add .
warning: in the working copy of 'akshay_bharadva_model_v2.ipynb', LF will be replaced by CRLF the next time Git touches it

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git status
On branch random-forest
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   akshay_bharadva_model_v2.ipynb


aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git commit -m 'adding random-forest-classification model in v2 ipynb'
[random-forest 2c8cca1] adding random-forest-classification model in v2 ipynb
 1 file changed, 823 insertions(+)
 create mode 100644 akshay_bharadva_model_v2.ipynb
```

Checking git log,

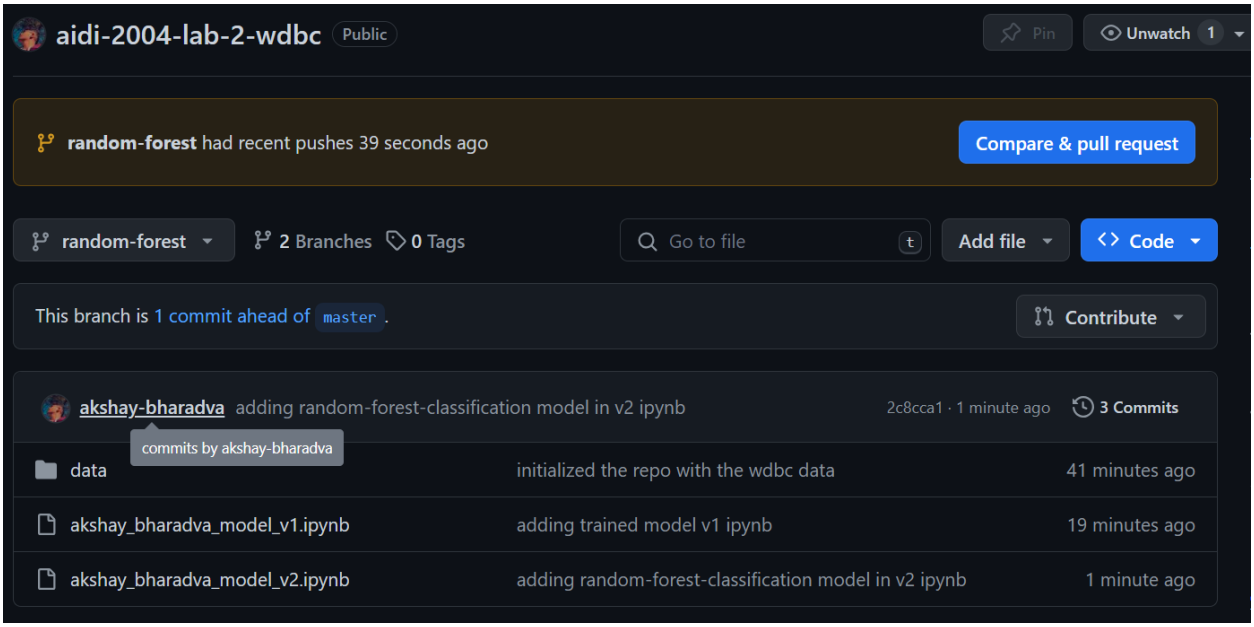
```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git log
commit 2c8cca14a0e76b47a3b92c52cdc69b1e4a50409b (HEAD -> random-forest)
Author: Akshay Bharadva <akshaybharadva19@gmail.com>
Date:   Tue Feb 6 11:18:32 2024 -0500

    adding random-forest-classification model in v2 ipynb

commit 23f9ee03b1f4067a61e4fbe5a3a7bf48587f1d04 (origin/master, master)
Author: Akshay Bharadva <akshaybharadva19@gmail.com>
Date:   Tue Feb 6 11:00:32 2024 -0500

    adding trained model v1 ipynb

commit 1e9361a8c5597d002113e199c9bc85a16682635d
Author: Akshay Bharadva <akshaybharadva19@gmail.com>
Date:   Tue Feb 6 10:38:48 2024 -0500

    initialized the repo with the wdbc data
```

Pushing to the remote,

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git push
fatal: The current branch random-forest has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin random-forest

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetupRemote' in 'git help config'.


aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$  git push --set-upstream origin random-forest
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 6.18 KiB | 6.18 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'random-forest' on GitHub by visiting:
remote:      https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc/pull/new/random-forest
remote:
To https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git
 * [new branch]      random-forest -> random-forest
branch 'random-forest' set up to track 'origin/random-forest'.
```

Lab#2 AIDI-2004: AI in Enterprise System
100943365 – Akshay Bharadva

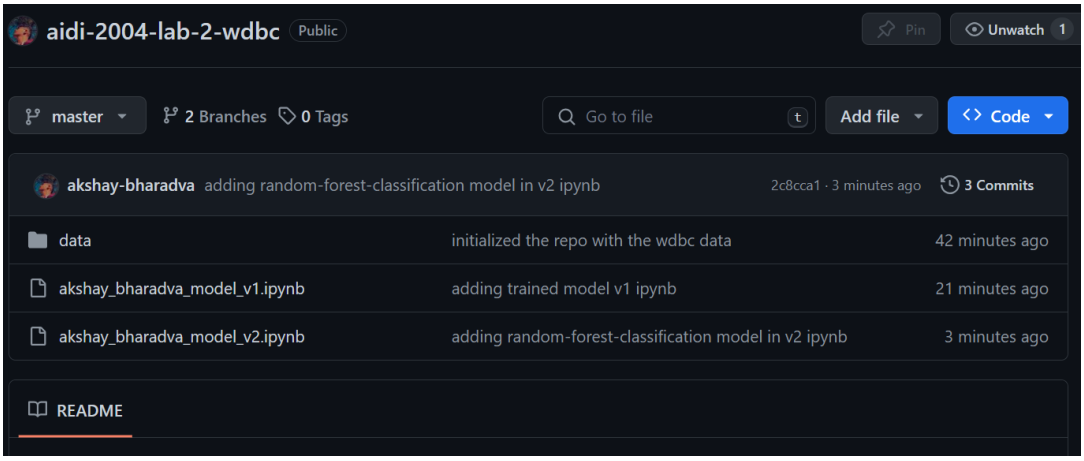
8. **Checking the remote location**



9. **Merging the random-forest branch into master branch so that master have all the code from random-forest branch.**

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (random-forest)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git merge random-forest
Updating 23f9ee0..2c8cca1
Fast-forward
 akshay_bharadva_model_v2.ipynb | 823 ++++++++++++++++++++++++++++++++++++++++
 1 file changed, 823 insertions(+)
 create mode 100644 akshay_bharadva_model_v2.ipynb

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git push
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git
   23f9ee0..2c8cca1  master -> master
```

Checking the remote repository after merging and pushing,



Lab#2 AIDI-2004: AI in Enterprise System
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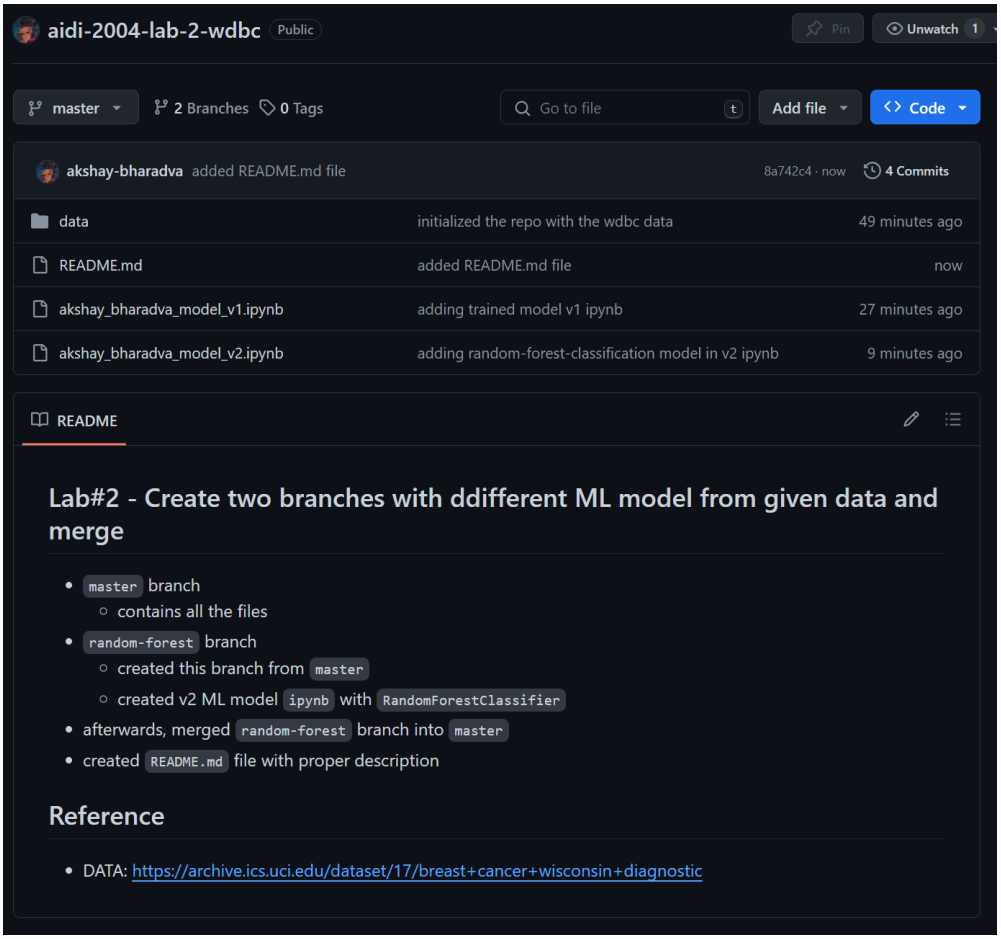
10. Creating the README.md file for the description of the Lab#2 and tasks performed.

```
aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

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

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

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git add .

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   README.md


aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git commit -m 'added README.md file'
[master 8a742c4] added README.md file
 1 file changed, 12 insertions(+)
 create mode 100644 README.md

aksha@YOGA MINGW64 /c/Durham College/AIDI/Term 2/202441.11562-AIDI-2004-01 - AI IN ENTERPRISE SYSTEMS/Lab#2 (master)
$ git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 555 bytes | 555.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc.git
   2c8cca1..8a742c4  master -> master
```



GitHub URL: https://github.com/akshay-bharadva/aidi-2004-lab-2-wdbc