

DATA SCIENCE_BWF_TASK_02

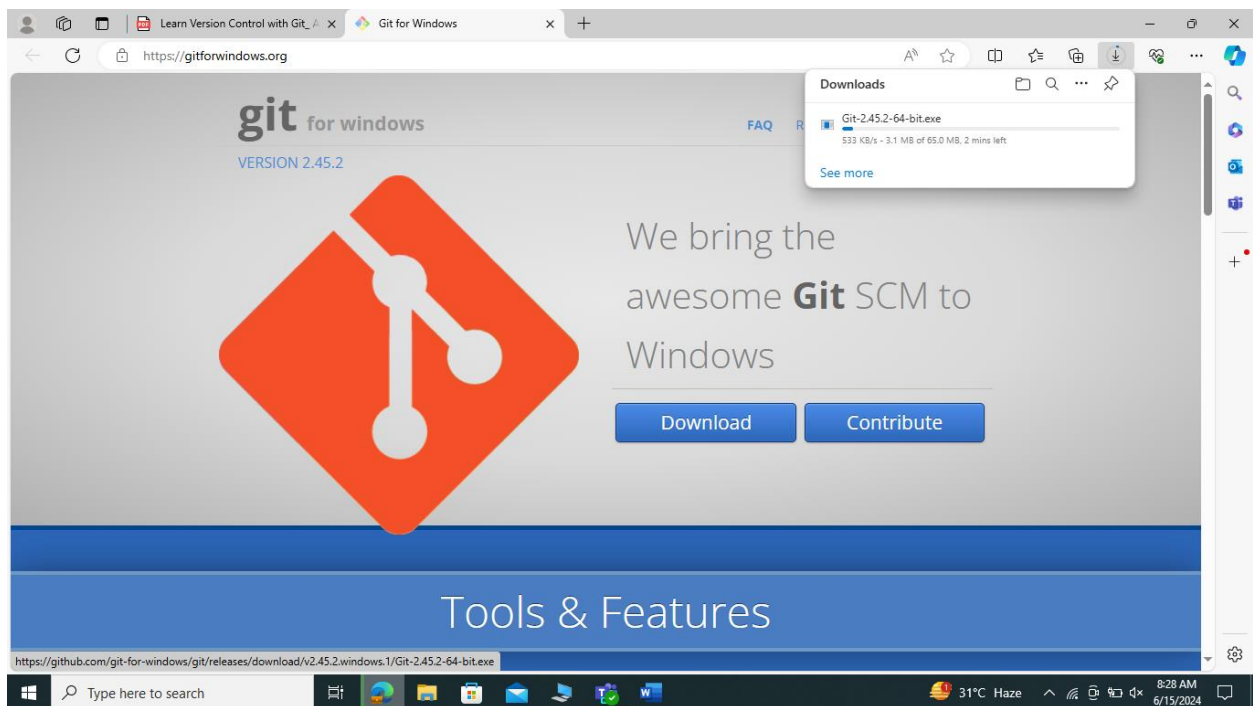
VERSION CONTROL SYSTEM (VCS)

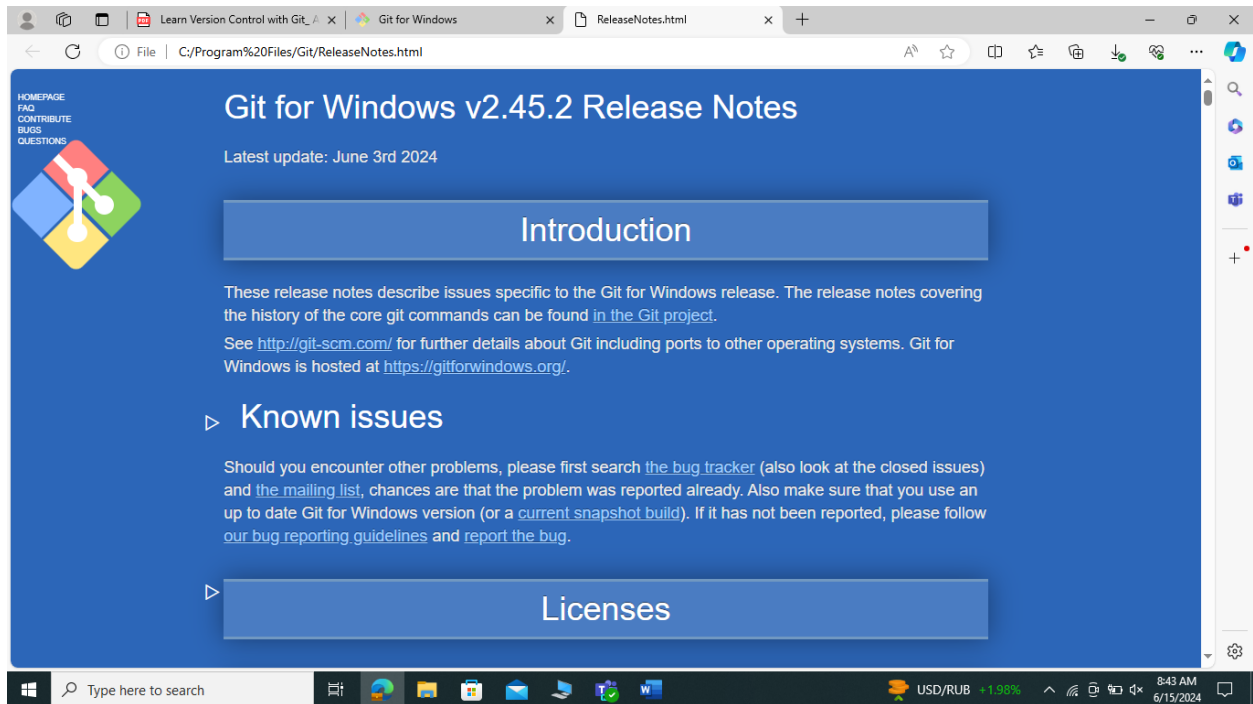
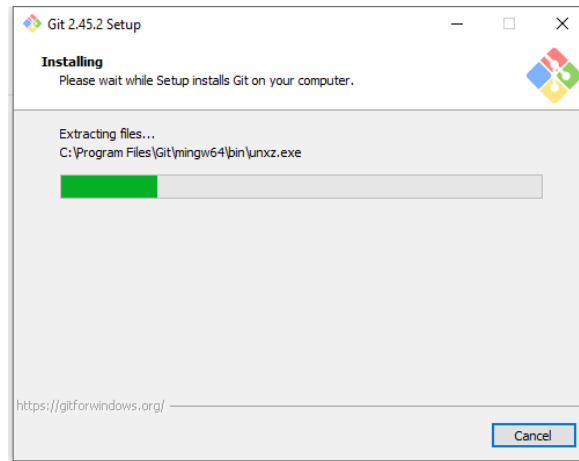
It is like a “database”, which keeps records of the changes we made in our project’s files. It allows multiple people to collaborate on a project. It helps us in storing versions properly, restoring previous versions, understanding what is happening and backup facility.

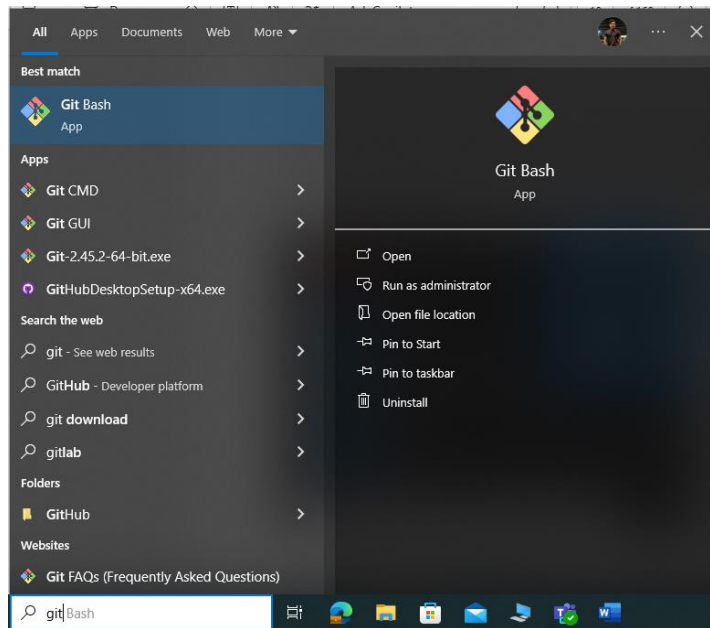
GETTING READY

There are two main ways of working with Git: either via its “**Command Line Interface**” or with a “**GUI application**”.

SETTING UP GIT ON YOUR COMPUTER







CONFIGURING GIT

```
MINGW64:/c/Users/Noor UI Ain
Noor UI Ain@DESKTOP-2KA7709 MINGW64 ~
$ git config --global user.name "Noor UI Ain"
Noor UI Ain@DESKTOP-2KA7709 MINGW64 ~
$ git config --global user.email "n40423313@gmailcom"
Noor UI Ain@DESKTOP-2KA7709 MINGW64 ~
$ git config --global color.ui auto
Noor UI Ain@DESKTOP-2KA7709 MINGW64 ~
$ |
```

THE BASIC WORKFLOW OF VERSION CONTROL

Working with Repository: In Git, the repository is just a simple hidden folder named “.git” in the root directory of your project. There are two types of repositories

- Local Repository
- Remote Repository

```
MINGW64:/e/Python
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 ~
$ cd E:\Python

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git init
Reinitialized existing Git repository in E:/Python/.git/

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ ls -la
total 13
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 10:01 ./
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 09:55 ../
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 10:03 .git/
-rw-r--r-- 1 Noor U1 Ain 197121 25 Jun 15 09:54 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ |
```

A new, hidden folder was added, named “.git”. All that happened is that Git created an empty local repository for us.

```
MINGW64:/e/Python
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git init
Reinitialized existing Git repository in E:/Python/.git/

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ ls -la
total 13
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 10:01 ./
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 09:55 ../
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 10:03 .git/
-rw-r--r-- 1 Noor U1 Ain 197121 25 Jun 15 09:54 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git add -A

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git commit -m "Initial Commit"
[master (root-commit) 957abce] Initial Commit
1 file changed, 1 insertion(+)
create mode 100644 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

STARTING WITH AN EXISTING PROJECT ON A SERVER

```
MINGW64:/e/Python
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 09:55 ./
drwxr-xr-x 1 Noor U1 Ain 197121 0 Jun 15 10:03 .git/
-rw-r--r-- 1 Noor U1 Ain 197121 25 Jun 15 09:54 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git add -A

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git commit -m "Initial Commit"
[master (root-commit) 957abce] Initial Commit
1 file changed, 1 insertion(+)
create mode 100644 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git clone https://github.com/ulain103/Python_Task04.git
Cloning into 'Python_Task04'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), done.

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ |
```

WORKING ON YOUR PROJECT

```
MINGW64/e/Python
[master (root-commit) 957abce] Initial Commit
1 file changed, 1 insertion(+)
create mode 100644 pythonpractice.py

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git clone https://github.com/ulain103/Python_Task04.git
Cloning into 'Python_Task04'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (4/4), done.

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Python_Task04/

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

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

GETTING READY TO COMMIT

```
MINGW64/e/Python
(use "git add <file>..." to include in what will be committed)
Python_Task04/

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

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git commit -m "Implement the new login box"
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Python_Task04/

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

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git log
commit 957abceb087de9c7b8ea54e88768b193bebaabc7 (HEAD -> master)
Author: Noor U1 Ain <n40423313@gmail.com>
Date: Sat Jun 15 10:10:16 2024 +0500

    Initial Commit

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

```
MINGW64/e/Python
commit 957abceb087de9c7b8ea54e88768b193bebaabc7 (HEAD -> master)
Author: Noor U1 Ain <n40423313@gmail.com>
Date: Sat Jun 15 10:10:16 2024 +0500

    Initial Commit

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git log -p
commit 957abceb087de9c7b8ea54e88768b193bebaabc7 (HEAD -> master)
Author: Noor U1 Ain <n40423313@gmail.com>
Date: Sat Jun 15 10:10:16 2024 +0500

    Initial Commit

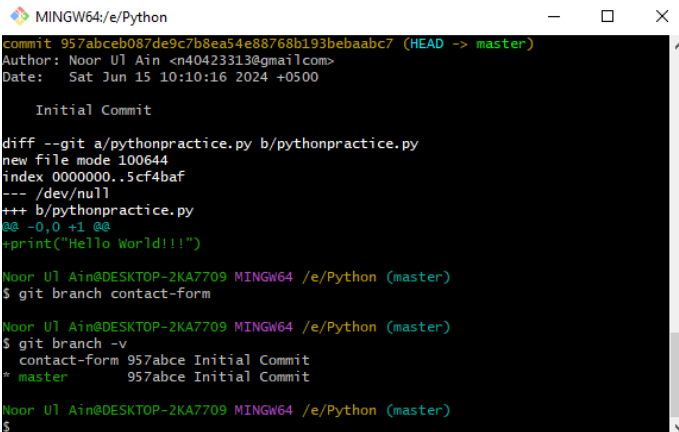
diff --git a/pythonpractice.py b/pythonpractice.py
new file mode 100644
index 0000000..5cf4baf
--- /dev/null
+++ b/pythonpractice.py
@@ -0,0 +1 @@
+print("Hello World!!!")

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

CHAPTER-02: BRANCHING AND MERGING

Branches are the perfect tool which helps us avoid mixing up different lines of development. We should use branches extensively in your development workflows: for new features, bug fixes, experiments, ideas.

WORKING WITH BRANCHES



```
MINGW64:/e/Python
commit 957abceb087de9c7b8ea54e88768b193bebaabc7 (HEAD -> master)
Author: Noor U1 Ain <n40423313@gmail.com>
Date: Sat Jun 15 10:10:16 2024 +0500

Initial Commit

diff --git a/pythonpractice.py b/pythonpractice.py
new file mode 100644
index 0000000..5cf4baf
--- /dev/null
+++ b/pythonpractice.py
@@ -0,0 +1 @@
+print("Hello World!!!")

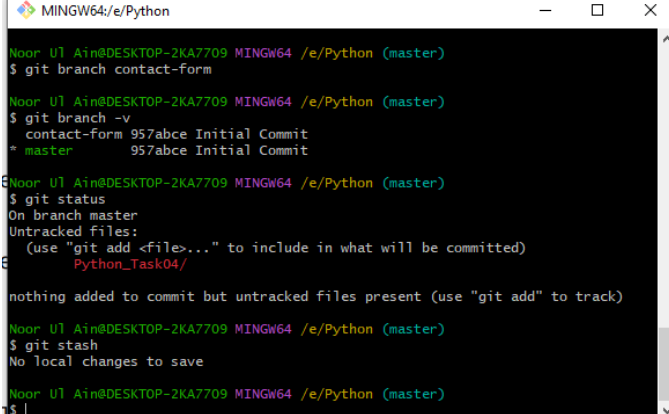
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git branch contact-form

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git branch -v
  contact-form 957abce Initial Commit
* master       957abce Initial Commit

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

The Stash

Consider it as a clipboard on steroids: it takes all the changes in our working copy and saves them for us on a new clipboard. We're left with a clean working copy, i.e. we have no more local changes.



```
MINGW64:/e/Python

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git branch contact-form

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git branch -v
  contact-form 957abce Initial Commit
* master       957abce Initial Commit

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Python_Task04/

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

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git stash
No local changes to save

Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$
```

CHECKING OUT A LOCAL BRANCH

```
MINGW64:/e/Python
nothing added to commit but untracked files present (use "git add" to track)
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git stash
No local changes to save
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git stash list
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git checkout contact-form
Switched to branch 'contact-form'
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (contact-form)
$ git status
On branch contact-form
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Python_Task04/
nothing added to commit but untracked files present (use "git add" to track)
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (contact-form)
$ |
```

MERGING CHANGES

It requires just two steps:

1. Check out the branch that ha receives the changes.
2. Call the “git merge” command with the name of the branch that contains the desired changes.

```
MINGW64:/e/Python
nothing added to commit but untracked files present (use "git add" to track)
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (contact-form)
$ git add contact.html
fatal: pathspec 'contact.html' did not match any files
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (contact-form)
$ git checkout master
Switched to branch 'master'
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git merge contact-form
Already up to date.
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ git log
commit 957abceb087de9c7b8ea54e88768b193bebaabc7 (HEAD -> master, contact-form)
Author: Noor U1 Ain <n40423313@gmail.com>
Date: Sat Jun 15 10:10:16 2024 +0500

    Initial Commit
Noor U1 Ain@DESKTOP-2KA7709 MINGW64 /e/Python (master)
$ |
```

