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Course Title: DATA-413-001/006.2025S, DATA-613-001/006.

Title: Git and GitHub Assignment

1. Create a PDF Document with the following content:

- Title: "Git and GitHub Assignment"
- Your GitHub Repository URL:
Include the URL of your GitHub repository at the top of the PDF (e.g., <https://github.com/your-username/git-clone-push-assignment>).
- Screenshots and Git Commands:
 - For each of the steps (cloning, adding a file, staging, committing, pushing), include a screenshot of the terminal and the corresponding Git commands and their outputs.
 - Make sure each screenshot is clearly labeled and explained.
- Make sure the PDF is properly formatted and easy to follow.

Git Bash Cloning of a Repository

In Git, cloning is making a local copy of a remote repository available for your working on. When you wish to work on a project or obtain the most recent codes from a repository, this comes in handy.

```
MINGW64:/c/Users/kofil/Kofi/my-git-assignment

kofil@Ladzro-Nyarko MINGW64 ~
$ mkdir Kofi

kofil@Ladzro-Nyarko MINGW64 ~
$ cd Kofi

kofil@Ladzro-Nyarko MINGW64 ~/Kofi
$ git clone git@github.com:Kofi-bright-dot/my-git-assignment.git
Cloning into 'my-git-assignment'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.

kofil@Ladzro-Nyarko MINGW64 ~/Kofi
$ ls
my-git-assignment/

kofil@Ladzro-Nyarko MINGW64 ~/Kofi
$ cd my-git-assignment

kofil@Ladzro-Nyarko MINGW64 ~/Kofi/my-git-assignment (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

kofil@Ladzro-Nyarko MINGW64 ~/Kofi/my-git-assignment (main)
$
```

Adding a File to Git

In Git, the act of adding a file involves the transfer of a new or modified file from the working directory (your local modifications) to the staging area. This prepares the file for inclusion in the subsequent commit.

```
MINGW64:/c/Users/kofil/OneDrive/Desktop/my_assignmentrepo

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo
$ echo "#practical" >> README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo
$ ls
README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo
$ ls -la
total 9
drwxr-xr-x 1 kofil 197609  0 Feb  2 13:40 ./
drwxr-xr-x 1 kofil 197609  0 Feb  2 13:38 ../
-rw-r--r-- 1 kofil 197609 11 Feb  2 13:40 README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo
$ git init
Initialized empty Git repository in C:/Users/kofil/OneDrive/Desktop/my_assignmentrepo/.git/

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ ls -la
total 13
drwxr-xr-x 1 kofil 197609  0 Feb  2 13:43 ./
drwxr-xr-x 1 kofil 197609  0 Feb  2 13:38 ../
drwxr-xr-x 1 kofil 197609  0 Feb  2 13:43 .git/
-rw-r--r-- 1 kofil 197609 11 Feb  2 13:40 README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master

No commits yet

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)

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ ls
My_New_Document.txt  README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master

No commits yet

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

Staging in Git Bash

Staging is adding modifications to the staging area before committing them. The staging area is where you prepare modifications before committing them.

```
ofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (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)
        my_second_doc.txt

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

ofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
git add my_second_doc.txt

ofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
git commit -m 'Adding my_second_doc.txt to my repo'
[master 8a75fed] Adding my_second_doc.txt to my repo
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 my_second_doc.txt
```

Committing a file in Git

When you commit a file in Git, the changes that have been made so far are saved forever in the local repository. A commit is like a picture of your project at a certain point in time. That each commit has:

It's a unique ID.

A commit message that lists the changes.

A link to the last commit (other than the first one).

```
MINGW64:/c/Users/kofil/OneDrive/Desktop/my_assignmentrepo

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

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git add README.md
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master

No commits yet

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

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

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git add My_New_Document.txt

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master

No commits yet

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

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git commit -m "practical first commit"
[master (root-commit) c6961bc] practical first commit
 2 files changed, 1 insertion(+)
 create mode 100644 My_New_Document.txt
 create mode 100644 README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master
nothing to commit, working tree clean

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git remote add origin https://github.com/Kofi-bright-dot/my-git-assignment.git

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$
```

Executing a push in Git

In Git, pushing refers to the act of transmitting your local commits to a remote repository (e.g., GitHub, GitLab, or Bitbucket). This enables other team members to view and collaborate on your modifications.

```
MINGW64:/c/Users/kofil/OneDrive/Desktop/my_assignmentrepo
set up remote as a mirror to push to or fetch from
My_New_Document.txt  README.md

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git remote add origin git@github.com:Kofi-bright-dot/my-git-assignment.git
error: remote origin already exists.

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git push -u master
fatal: 'master' does not appear to be a git repository
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git status
On branch master
nothing to commit, working tree clean

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git remote -v
origin  https://github.com/Kofi-bright-dot/my-git-assignment.git (fetch)
origin  https://github.com/Kofi-bright-dot/my-git-assignment.git (push)

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git remote remove origin

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git remote add origin git@github.com:Kofi-bright-dot/my-git-assignment.git

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git branch
* master

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git push -u origin master
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 14 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (4/4), 285 bytes | 285.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/Kofi-bright-dot/my-git-assignment/pull/new/master
remote:
To github.com:Kofi-bright-dot/my-git-assignment.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$
```

```
kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (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)
        my_second_doc.txt

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

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git add my_second_doc.txt

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git commit -m 'Adding my_second_doc.txt to my repo'
[master 8a75fed] Adding my_second_doc.txt to my repo
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 my_second_doc.txt

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$ git push
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 14 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 320 bytes | 160.00 KiB/s, done.
Total 2 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:Kofi-bright-dot/my-git-assignment.git
   c6961bc..8a75fed  master -> master

kofil@Ladzro-Nyarko MINGW64 ~/OneDrive/Desktop/my_assignmentrepo (master)
$
```

My Repository link

<https://github.com/Kofi-bright-dot/my-git-assignment>