**Exercise 1: Introduction to Version Control**

**Objective:**

Initialize a new Git repository and commit your first file.

**Instructions:**

1. Create a new directory for your project.
   * + **PS C:\Users\Vivek Sonkar> cd "D:\Digital Nurture 3.0\Module 1 - GIT"**

**PS D:\Digital Nurture 3.0\Module 1 - GIT> mkdir my\_project**

**Directory: D:\Digital Nurture 3.0\Module 1 - GIT**

**Mode LastWriteTime Length Name**

**---- ------------- ------ ----**

**d----- 01-08-2024 19:21 my\_project**

1. Navigate into the directory.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT> cd my\_project**

**PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project>**

1. Initialize a new Git repository in the directory.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git init**

**Initialized empty Git repository in D:/Digital Nurture 3.0/Module 1 - GIT/my\_project/.git/**

**PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project>**

1. Create a new file named file1.txt and add some content to it.
   * + **Add some content to file1.txt, for example:**

**This is my first file in a Git repository.**

1. Add the file to the staging area.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git add file1.txt**
2. Commit the file with a commit message.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git commit -m "Initial commit with file1.txt"**

**[main (root-commit) deeaaac] Initial commit with file1.txt**

**1 file changed, 1 insertion(+)**

**create mode 100644 file1.txt**

**Exercise 2: Understanding Git**

**Objective:**

Clone an existing repository and explore its history.

**Instructions:**

1. Clone a public repository from a platform like GitHub.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git clone https://github.com/CodeWithHarry/DanceWebsite.git**

**Cloning into 'DanceWebsite'...**

**remote: Enumerating objects: 29, done.**

**remote: Total 29 (delta 0), reused 0 (delta 0), pack-reused 29**

**Receiving objects: 100% (29/29), 1022.52 KiB | 3.80 MiB/s, done.**

**Resolving deltas: 100% (3/3), done.**

1. Navigate into the cloned repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> cd DanceWebsite**
2. Check the commit history.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\DanceWebsite> git log**

**commit be8769b4324d35d37c7574d0763d2b8c22bb39c9 (HEAD -> master, origin/master, origin/HEAD)**

**Author: Harry <harry@codewithharry.com>**

**Date: Sat Apr 18 22:27:50 2020 +0530**

**Added cheatsheet**

**commit 5721bdd64e1bc48912488a8d9de252a5307ff59f**

**Author: Harry <harry@codewithharry.com>**

**Date: Sat Apr 18 22:12:50 2020 +0530**

**Initial commit**

1. Show changes introduced by a specific commit.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\DanceWebsite> git show be8769b4324d35d37c7574d0763d2b8c22bb39c9**

**commit be8769b4324d35d37c7574d0763d2b8c22bb39c9 (HEAD -> master, origin/master, origin/HEAD)**

**Author: Harry <harry@codewithharry.com>**

**Date: Sat Apr 18 22:27:50 2020 +0530**

**Added cheatsheet**

**diff --git a/cheatsheet.txt b/cheatsheet.txt**

**new file mode 100644**

**index 0000000..20f35b4**

**--- /dev/null**

**+++ b/cheatsheet.txt**

**@@ -0,0 +1,11 @@**

**+touch .gitignore**

**+git config --global user.name Harry**

**+git config --global user.email youremail@example.com**

**+git init**

**+git add .**

**+git commit -m "Initial Commit"**

**+git status # Just to see**

**Exercise 3: Setting Up Git**

**Objective:**

Set up Git configuration and verify it.

**Instructions:**

1. Set your username for Git.
   * + PS D:\Digital Nurture 3.0> git config --global user.name "Vivek Sonkar"
2. Set your email for Git.
   * + PS D:\Digital Nurture 3.0> git config --global user.email "vsonkar@gitam.in"
3. Verify your configuration settings.
   * + **PS D:\Digital Nurture 3.0> git config --list**

**diff.astextplain.textconv=astextplain**

**filter.lfs.clean=git-lfs clean -- %f**

**filter.lfs.smudge=git-lfs smudge -- %f**

**filter.lfs.process=git-lfs filter-process**

**filter.lfs.required=true**

**http.sslbackend=openssl**

**http.sslcainfo=C:/Program Files/Git/mingw64/etc/ssl/certs/ca-bundle.crt**

**core.autocrlf=true**

**core.fscache=true**

**core.symlinks=false**

**pull.rebase=false**

**credential.helper=manager**

**credential.https://dev.azure.com.usehttppath=true**

**init.defaultbranch=main**

**user.name=Vivek Sonkar**

**user.email=vsonkar@gitam.in**

**Exercise 4: Basic Git Commands**

**Objective:**

Practice basic Git commands by modifying files and tracking changes.

**Instructions:**

1. Create a new file named file2.txt and add some content to it.
   * + **Add some content to file2.txt, for example:**

**This is the content of file2.txt.**

1. Add the file to the staging area.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git add file2.txt**
2. Commit the new file with a commit message.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git commit -m "Add file2.txt with initial content"**

**[main 2b9ae41] Add file2.txt with initial content**

**1 file changed, 1 insertion(+)**

**create mode 100644 file2.txt**

1. Modify the existing file1.txt and add more content to it.
   * + **Add more content to file1.txt, for example:**

**Adding more content to file1.txt.**

1. Add the modified file to the staging area.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git add file1.txt**
2. Commit the changes with a commit message.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git commit -m "Update file1.txt with additional content"**

**[main f5242e7] Update file1.txt with additional content**

**1 file changed, 2 insertions(+), 1 deletion(-)**

1. View the current status of your repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git status**

**On branch main**

**Untracked files:**

**(use "git add <file>..." to include in what will be committed)**

**DanceWebsite/**

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

1. View the differences between your working directory and the repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git diff**

**Exercise 5: Branching and Merging**

**Objective:**

Create a new branch, make changes, and merge it back to the main branch.

**Instructions:**

1. Create a new branch named new-feature.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git branch new-feature**
2. Switch to the new branch (if not already switched).
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git checkout new-feature**

**Switched to branch 'new-feature'**

1. Create a new file named feature.txt and add some content to it.
   * + **Add some content to feature.txt, for example:**

**This is the content of feature.txt.**

1. Add the file to the staging area.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git add feature.txt**
2. Commit the new file with a commit message.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git commit -m "Add feature.txt with initial content"**

**[new-feature 1e2189e] Add feature.txt with initial content**

**1 file changed, 1 insertion(+)**

**create mode 100644 feature.txt**

1. Switch back to the main branch.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git checkout main**

**Already on 'main'**

1. Merge the new-feature branch into the main branch.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git merge new-feature**
2. Resolve any conflicts if they arise and commit the merge.

**Exercise 6: Remote Repositories**

**Objective:**

Add a remote repository and push your local changes.

**Instructions:**

1. Add a remote repository URL to your local Git repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git remote add origin** [**https://github.com/vsonkar/public-vivek.git**](https://github.com/vsonkar/public-vivek.git)
2. Push your local changes to the remote repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git push -u origin main**

**Enumerating objects: 19, done.**

**Counting objects: 100% (19/19), done.**

**Delta compression using up to 8 threads**

**Compressing objects: 100% (14/14), done.**

**Writing objects: 100% (18/18), 1.80 KiB | 205.00 KiB/s, done.**

**Total 18 (delta 4), reused 0 (delta 0), pack-reused 0 (from 0)**

**remote: Resolving deltas: 100% (4/4), done.**

**To https://github.com/vsonkar/public-vivek.git**

**bb47ad1..9bffd29 main -> main**

**branch 'main' set up to track 'origin/main'.**

**Exercise 7: Collaborating with Git**

**Objective:**

Collaborate on a repository by creating a pull request.

**Instructions:**

1. Fork a repository on GitHub.
2. Clone your forked repository to your local machine.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> git clone https://github.com/vsonkar/ApnaCollege-Alpha.git**

**Cloning into 'ApnaCollege-Alpha'...**

**remote: Enumerating objects: 178, done.**

**remote: Counting objects: 100% (9/9), done.**

**remote: Compressing objects: 100% (7/7), done.**

**remote: Total 178 (delta 2), reused 5 (delta 0), pack-reused 169**

**Receiving objects: 100% (178/178), 69.30 KiB | 1.98 MiB/s, done.**

**Resolving deltas: 100% (31/31), done.**

1. Navigate into the cloned repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project> cd ApnaCollege-Alpha**

1. Create a new branch for your changes.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\ApnaCollege-Alpha> git checkout -b my-branch**

**>> Switched to a new branch 'my-branch'**

1. Make your changes and commit them.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\ApnaCollege-Alpha> git add file3.txt**

**PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\ApnaCollege-Alpha> git add .**

**PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\ApnaCollege-Alpha> git commit -m "Added a new file3.txt"**

**[my-branch 7d3063f] Added a new file3.txt**

**1 file changed, 1 insertion(+)**

**create mode 100644 file3.txt**

1. Push the branch to your forked repository.
   * + **PS D:\Digital Nurture 3.0\Module 1 - GIT\my\_project\ApnaCollege-Alpha> git push origin my-branch**

**Enumerating objects: 4, done.**

**Counting objects: 100% (4/4), done.**

**Delta compression using up to 8 threads**

**Compressing objects: 100% (2/2), done.**

**Writing objects: 100% (3/3), 300 bytes | 300.00 KiB/s, done.**

**Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)**

**remote: Resolving deltas: 100% (1/1), completed with 1 local object.**

**remote:**

**remote: Create a pull request for 'my-branch' on GitHub by visiting:**

**remote: https://github.com/vsonkar/ApnaCollege-Alpha/pull/new/my-branch**

**remote:**

**To https://github.com/vsonkar/ApnaCollege-Alpha.git**

**\* [new branch] my-branch -> my-branch**

1. Create a pull request from your forked repository to the original repository.