**Assignment No 6 [4]  
Question:** Explain fork and git clone with example?

**Solution:**

**Fork:**

Forking is a fundamental concept in GitHub, primarily used in open-source development. When you fork a repository on GitHub, you create a copy of the original repository under your GitHub account. This copy is entirely independent and exists within your GitHub space. Forking is common when you want to contribute to a project without directly altering the original codebase.

A **fork** is a copy of a repository that is created on a remote server (typically on platforms like GitHub, GitLab, or Bitbucket). Forking a repository allows you to freely experiment with changes without affecting the original project.

**Example of Fork:**

**Fork the Repository:**

Navigate to the cool-project repository on GitHub (e.g., https://github.com/original-owner/java-project).

Click the Fork button at the top right corner. This action creates a copy of the repository under your GitHub account (<https://github.com/your-username/java-project>).

**Clone Your Fork:**

Open your terminal or Git Bash.

Clone your forked repository to your local machine using:

git clone https://github.com/your-username/cool-project.git

This command creates a local copy of your forked repository on your machine.

**Make Changes:**

Navigate to the repository directory:

cd cool-project

Create a new branch for your changes:

git checkout -b feature-branch

Make your changes to the codebase.

Add and commit your changes:

git add .

git commit -m "Add new feature".

**Push Changes to Your Fork:**

Push your changes to your forked repository on GitHub:

git push origin feature-branch.

**Create a Pull Request**

Go to your forked repository on GitHub.

You should see a prompt to create a pull request from

your new branch. Click "Compare & pull request".

Provide a description of your changes and submit the

Pull request to the original repository for review.

**Clone:**

Cloning, on the other hand, involves creating a local copy of a repository from GitHub onto your local machine. It allows you to work on the code locally, make changes, and interact with the repository without an active internet connection. Cloning is a crucial step in the development process, enabling developers to work on projects locally and synchronize changes with the remote repository on GitHub.

command is used to create a local copy of a remote repository. Cloning a repository means you get a full copy of all the code, branches, and history of that repository on your local machine. This is typically the first step to start working on an existing project.

**Example of Clone:**

**Clone the Repository:**

Open your terminal or Git Bash.

Clone the repository using: git clone <https://github.com/original-owner/core-java-project.git>

This command creates a local copy of the repository on your machine.

**Navigate to the Repository:**

Change into the repository directory:

cd core-java-project

**Make Changes:**

Create a new branch for your changes:

git checkout -b new-feature

Make your changes to the codebase.

Add and commit your changes:

git add .

git commit -m "new feature"

**Push Changes:**

Push your changes to the remote repository:

git push origin new-feature