***GIT Assignment Questions***

### **1. Setting Up Git:**

* **Q1:** Install Git on your system and configure your name and email using the following commands:
  + git config --global user.name "Your Name"
  + git config --global user.email "[your.email@example.com](mailto:your.email@example.com)"
* **Q2:** How would you verify that Git has been installed and properly configured? Provide the command and the expected output.
* **Q3:** Initialize a new Git repository in an empty directory on your computer using git init.

### **2. Basic Git Operations:**

* **Q4:** Create a new text file named hello.txt in your repository. Add some content to it. Then, stage the file for commit using the git add command.
* **Q5:** Commit the changes you made to the hello.txt file with a meaningful commit message. Provide the Git command to commit and the expected output.
* **Q6:** After committing your changes, use the git status command to check the state of your repository. Explain the output.
* **Q7:** How can you view the commit history of a repository? Use the git log command and describe what information it provides.

### **3. Branching and Merging:**

* **Q8:** What is the purpose of branching in Git? How do branches help in software development?
* **Q9:** Create a new branch called feature-branch and switch to it using the appropriate Git command.
* **Q10:** Create a new file named feature.txt on your new branch and commit the changes. Then, switch back to the main branch.
* **Q11:** Merge the feature-branch into the main branch. What command would you use to merge the changes, and what happens if there are no conflicts?
* **Q12:** What is a merge conflict? Create a scenario where a merge conflict occurs and explain how you would resolve it.

### **4. Working with Remote Repositories:**

* **Q13:** What is a remote repository in Git? How is it different from a local repository?
* **Q14:** Clone a remote repository from GitHub to your local machine using the git clone command. Provide the URL of a public repository to clone.
* **Q15:** After cloning the repository, make a small change (e.g., edit README.md), and commit the changes to your local repository.
* **Q16:** Push your local commits to the remote repository. What Git command is used to push changes to a remote repository? Explain how you would use it.
* **Q17:** Fetch the latest changes from the remote repository using the git fetch command. What is the difference between git fetch and git pull?

### **5. Undoing Changes in Git:**

* **Q18:** After making several commits, you realize that a commit message needs to be changed. How can you edit the last commit message using Git?