### **Tutorial: Using a Git Repository on Ubuntu**

This tutorial demonstrates how to install the Git client, clone a repository, perform basic Git operations, and handle changes. For learners who don't have write access to the repository, it includes instructions for forking the repository.

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### **Step 1: Install Git on Ubuntu**

**Update the System Packages** Open the terminal and run:  
  
 sudo apt update

1. **Install Git** Install Git using:  
     
    sudo apt install git -y
2. **Verify Installation** Confirm that Git is installed:  
     
    git --version

### **Step 2: Fork the Repository**

Since learners do not have write access to the repository, they need to fork it.

1. **Navigate to the Repository** Visit<https://github.com/devopscert202/ckacoursenov24> in a web browser.
2. **Fork the Repository**
   * Click the **Fork** button at the top-right corner of the repository page.
   * The forked repository will now appear in your GitHub account.

### **Step 3: Clone the Repository**

1. **Copy the Forked Repository URL** From your GitHub account, copy the HTTPS URL of your forked repository.

**Clone the Repository** Run the following command to clone the repository locally:  
  
 git clone <your-forked-repository-url>

Example:  
  
 git clone https://github.com/<your-username>/ckacoursenov24.git

1. **Navigate to the Cloned Directory** cd ckacoursenov24

### **Step 4: Configure Git**

**Set User Name** git config --global user.name "Your Name"

**Set User Email** git config --global user.email "your-email@example.com"

### **Step 5: Basic Git Operations**

**Add a New File**

Create a file:  
 echo "This is a test file" > testfile.txt

Add the file to staging:  
 git add testfile.txt

**Commit Changes** Save the staged changes with a commit message:  
  
 git commit -m "Added testfile.txt"

**Push Changes** Push the changes to your forked repository:  
  
 git push origin main

### **Step 6: Update the Repository**

**Pull Updates from the Forked Repository**   
Synchronize the local repository with the remote:  
  
 git pull origin main

**Add Changes to an Existing File**

Edit a file:  
 echo "Additional content" >> testfile.txt

Stage and commit the changes:  
 git add testfile.txt

git commit -m "Updated testfile.txt"

Push the changes:  
 git push origin main

### **Step 7: Sync with the Upstream Repository**

If the original repository (upstream) has changes, you can sync your fork:

**Add the Upstream Repository** git remote add upstream https://github.com/devopscert202/ckacoursenov24.git

1. **Fetch Changes from Upstream** git fetch upstream
2. **Merge Changes** git merge upstream/main
3. **Push the Changes to Your Fork** git push origin main

### **Step 8: Additional Operations**

**View the Git Log** Display commit history:  
  
 git log --oneline

**Create a Branch** Create and switch to a new branch:  
  
 git checkout -b feature-branch

**Switch Between Branches** git checkout main

**Delete a File** git rm testfile.txt  
git commit -m "Deleted testfile.txt"  
git push origin main

### **Note for Learners**

* **Fork First**: Always fork the repository before cloning if you don’t have write access.
* **Stay Synced**: Regularly sync your fork with the upstream repository to stay up-to-date.
* **Document Changes**: Add clear commit messages for better tracking.

By following this tutorial, you’ve learned how to manage a Git repository, handle updates, and contribute to a project while collaborating with others.