

BASIC GIT WORKFLOW

PROJECT REPORT

Submitted by

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May 2025

BONAFIDE CERTIFICATE

Certified that project documentation of “**Basic GIT Workflow**” is the bonafide work of “**GOKUL R (22CDR026), AJAI G(22CDL120)**” who carried out the project under my supervision. Certified further that to the best of my knowledge the work reported here in does not form part of my other these is or dissertation on the basis of which a degree or awarded was conferred on an earlier occasion on this or any other candidate.

Submitted on_____

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Basic GIT Workflow

AIM

To perform a basic Git workflow in an Ubuntu environment running in VirtualBox. This includes installing Google Chrome, cloning an existing GitHub repository, and pushing a project into the user's own GitHub repository.

ABSTRACT

The project demonstrates a basic Git-based workflow on Ubuntu running inside VirtualBox. In Ubuntu install Google Chrome, log into GitHub, clone the existing repository and push the project into our repository by creating a branch.

SCOPE AND OBJECTIVES

- Set up a functional development environment by installing Ubuntu on VirtualBox.
- Install essential software like Google Chrome to easily access GitHub through the browser.
- Use GitHub to manage the source code and keep track of changes throughout the project.
- Clone an existing repository from GitHub to the local Ubuntu environment.
- Add the necessary project files, commit the changes, and push them to your own GitHub repository.

HARDWARE & SOFTWARE REQUIREMENTS

Hardware Requirements:

- At least 4 GB RAM and 20 GB of available disk space

Software Requirements:

- Oracle VirtualBox
- Ubuntu (version - 20.04 or later)
- Google Chrome browser
- GitHub account for repository management

EXISTING SYSTEM

Version control and project collaboration are often done manually or through basic file-sharing methods, which can lead to confusion, loss of data, and difficulty in tracking changes.

DRAWBACKS

- No centralized version control or history tracking
- Difficulty in collaborating with others on the same project
- Manual file management leads to a higher risk of overwriting or losing work
- Limited visibility into what changes were made, when, and by whom

PROPOSED SYSTEM

1. Basic Git Workflow Implementation

- Use Git for efficient version control and project tracking.
- Clone existing repositories and push updates to personal GitHub repositories for easy access and collaboration.

2. Virtual Environment Setup Using VirtualBox

- Run Ubuntu OS inside VirtualBox to simulate a clean development environment.
- Helps in testing code and managing platform-independent projects.

3. Browser and GitHub Integration

- Install Google Chrome to access GitHub conveniently via the web.
- Log in and manage repositories through the browser interface.

ADVANTAGES

- Easy tracking of code changes over time
- Secure and centralized version control
- Error free coding while cloning

PROJECT DESIGN

- **Environment Setup:** Access the project folder by navigating to the Bird_Shop directory in Ubuntu.
- **Repository Initialization:** Use git init to initialize a new local Git repository in the project folder.
- **Remote Repository Linking:** Connect the local repository to a GitHub repo using git remote add origin.
- **Code Management:** Stage project files using git add . and commit them with a message using git commit -m.
- **Branch Setup:** Rename the default branch to main using git branch -M main.
- **Push Changes:** Push the local project to the remote repository on GitHub with git push -u origin main --force.

IMPLEMENTATION OF THE PROJECT

- **Step 1: Install Ubuntu in VirtualBox**

Install and configure Ubuntu as a virtual machine environment for development.

- **Step 2: Install Git**

- sudo apt update
- sudo apt install git

- **Step 3: Clone an existing GitHub Repository**

- git clone
https://github.com/Dhanushree1401/Bird_Shop.git
- cd Bird_Shop

- **Step 4: Commit and Push Changes**

- git init
- git remote add origin
`https://github.com/GokuRavi126/Devops_project1.git`
- git remote set-url origin
`https://github.com/GokuRavi126/Devops_project1.git`
- git add .
- git commit -m "Initial commit with local files"
- git branch -M main
- git push -u origin main --force

CONCLUSION

The project shows how to use Git in Ubuntu on VirtualBox to manage software development. It helps with easy tracking of changes, safe code storage, and better teamwork using GitHub. The setup is simple, reliable, and useful for both individuals and teams.

COMMANDS:

```
Activities Terminal Apr 23 23:40
root@ubuntu: /home/vboxuser/Bird_Shop

vboxuser@ubuntu:~$ su
Password:
root@ubuntu:/home/vboxuser# cd Bird_shop
bash: cd: Bird_shop: No such file or directory
root@ubuntu:/home/vboxuser# cd Bird_Shop
root@ubuntu:/home/vboxuser/Bird_Shop# git init
Reinitialized existing Git repository in /home/vboxuser/Bird_Shop/.git/
root@ubuntu:/home/vboxuser/Bird_Shop# git remote add origin https://github.com/GokulRavi26/Devops_project1.git
error: remote origin already exists.
root@ubuntu:/home/vboxuser/Bird_Shop# git remote set-url origin https://github.com/GokulRavi26/Devops_project1.git
root@ubuntu:/home/vboxuser/Bird_Shop# git add .
root@ubuntu:/home/vboxuser/Bird_Shop# git commit -m "Initial commit with local files"
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
root@ubuntu:/home/vboxuser/Bird_Shop# git branch -M main
root@ubuntu:/home/vboxuser/Bird_Shop# git push -u origin main
Username for 'https://github.com': GokulRavi26
Password for 'https://GokulRavi26@github.com':
To https://github.com/GokulRavi26/Devops_project1.git
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/GokulRavi26/Devops_project1.git'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
root@ubuntu:/home/vboxuser/Bird_Shop# git push -u origin main --force
Username for 'https://github.com': GokulRavi26
Password for 'https://GokulRavi26@github.com':
Enumerating objects: 147, done.
Counting objects: 100% (147/147), done.
Delta compression using up to 2 threads
Compressing objects: 100% (57/57), done.
Writing objects: 100% (147/147), 56.46 KiB | 1.76 MiB/s, done.
Total 147 (delta 90), reused 147 (delta 90), pack-reused 0
remote: Resolving deltas: 100% (90/90), done.
To https://github.com/GokulRavi26/Devops_project1.git
+ 1d9f730...60185f1 main -> main (forced update)
```

```
Activities Terminal Apr 23 23:41
root@ubuntu: /home/vboxuser/Bird_Shop

90 git branch -M main
91 git remote add origin https://github.com/GokulRavi26/Devops_project1.git
92 git push -u origin main
93 git clone https://github.com/Dhanushree1401/Bird_Shop.git
94 git push -u origin main
95 git remote add origin https://github.com/GokulRavi26/review.git
96 mkdir Devops_project1
97 cd Devops_project1
98 git clone https://github.com/Dhanushree1401/Bird_Shop.git
99 git remote add origin https://github.com/GokulRavi26/Devops_project1.git
100 git config --global --add safe.directory /home/vboxuser
101 git remote add origin https://github.com/GokulRavi26/Devops_project1.git
102 git remote -v
103 git add .
104 rm -rf Bird_Shop/.git
105 git add Bird_Shop
106 git commit -m "Add Bird_Shop contents"
107 git push -u origin main
108 git branch -M main
109 git push -u origin main
110 \
111 git branch -M main
112 git push -u origin main
113 git clone https://github.com/Dhanushree1401/Bird_Shop
114 cd Bird_Shop
115 cd Downloads
116 cd Bird_Shop
117 cd Bird_Shop
118 cd Bird_Shop
119 cd Bird_Shop
120 git init
121 git remote add origin https://github.com/GokulRavi26/Devops_project1.git
122 git remote set-url origin https://github.com/GokulRavi26/Devops_project1.git
123 git add .
124 git commit -m "Initial commit with local files"
125 git branch -M main
126 git push -u origin main
127 git push -u origin main --force
128 history
root@ubuntu:/home/vboxuser/Bird_Shop#
```


OUTPUT:

