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# Experiment No. 2 : To understand Version Control System / Source Code Management, install git and create a GitHub account

## Version Control System (VCS)

A Version Control System (VCS) is a tool that helps developers manage changes to their code over time. It allows multiple people to collaborate on a project, track modifications, and revert to previous versions if needed. VCS prevents loss of work and makes software development more efficient.

Types of Version Control Systems:

1. Local VCS: Stores versions of files on a local machine, but lacks collaboration features.
2. Centralized VCS (CVCS): A single server stores all versions of the code, and developers pull/push changes from it (e.g., SVN).
3. Distributed VCS (DVCS): Every developer has a complete copy of the repository, allowing offline work and better collaboration (e.g., Git).

## Source Code Management (SCM)

SCM is the practice of managing source code changes using VCS tools. It ensures that the software development process is organized, traceable, and error-free. SCM allows teams to work on different features simultaneously without overwriting each other's code.

## Introduction to Git

Git is a Distributed Version Control System (DVCS) developed by Linus Torvalds in 2005. It helps developers track changes, collaborate, and manage different versions of their code efficiently.

Features of Git:

- Distributed System: Each developer has a full copy of the repository.
- Branching & Merging: Allows working on multiple features simultaneously.
- Speed & Efficiency: Fast performance compared to older VCS.
- Data Integrity: Ensures code is securely stored and protected from corruption.

### Installing Git

To install Git, follow these steps:

1. Windows: Download and install Git from git-scm.com.
2. Linux (Ubuntu/Debian): Run: sudo apt update && sudo apt install git
3. MacOS: Run: brew install git

Verify the installation by running: git –version

## Introduction to GitHub

GitHub is a cloud-based platform that provides remote storage for Git repositories. It allows teams to collaborate, manage projects, and contribute to open-source software.

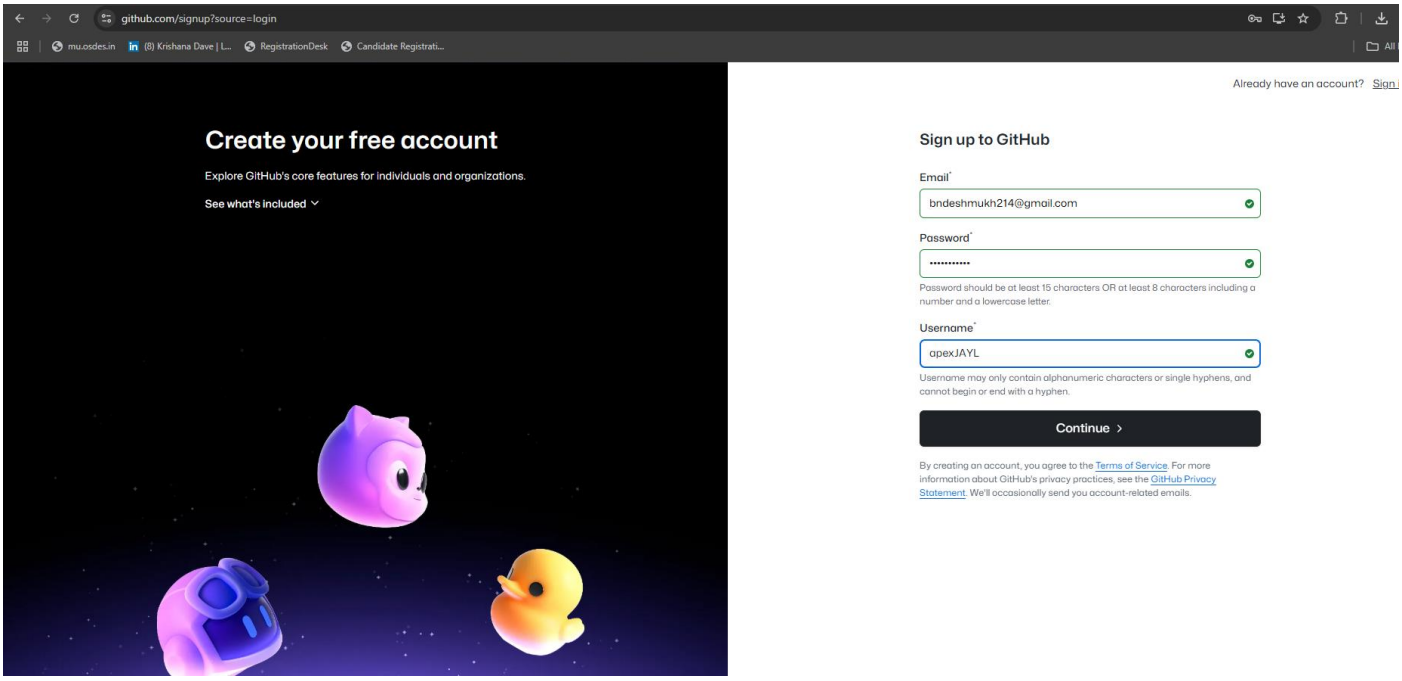
Features of GitHub:

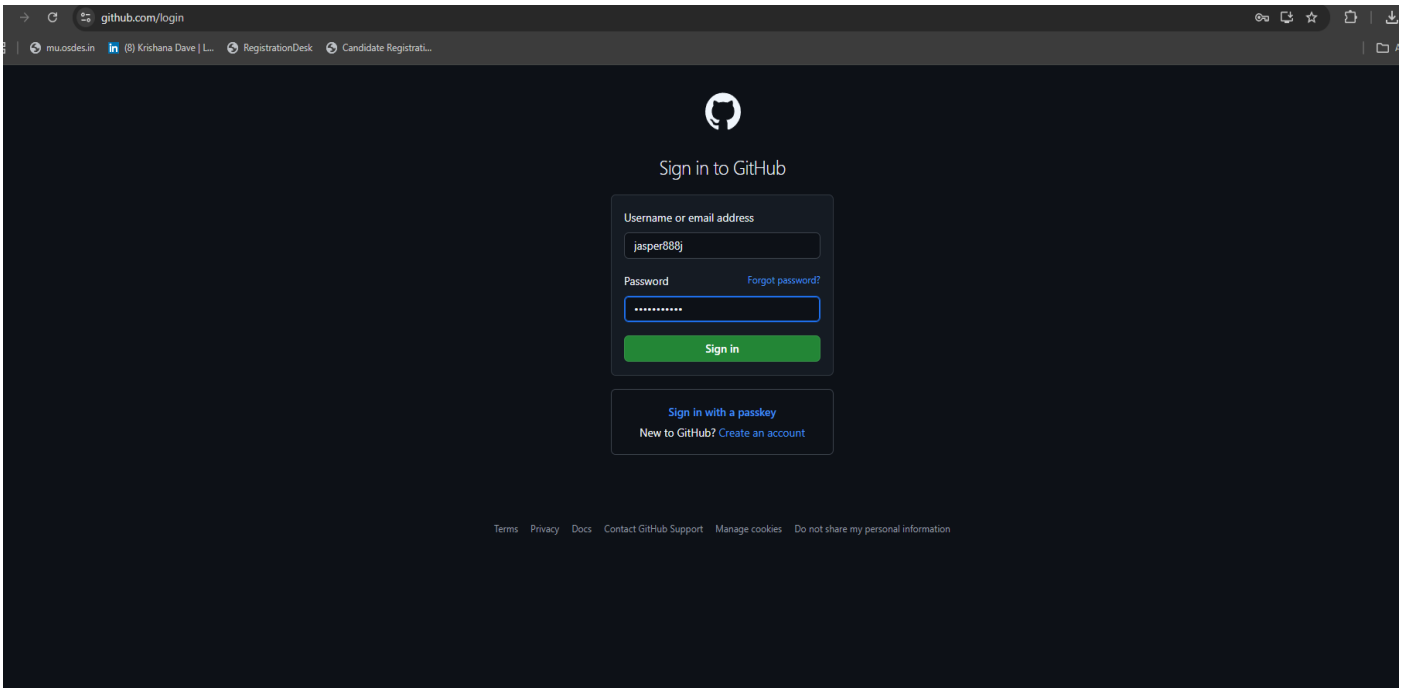
- Remote Repository Hosting: Store and share code securely.
- Collaboration Tools: Pull requests, code reviews, and discussions.
- CI/CD Integration: Automate deployment and testing.
- Issue Tracking & Project Management: Organize and track progress.

Creating a GitHub Account

1. Visit GitHub.
2. Click “Sign Up” and fill in the required details.
3. Confirm your email and set up a profile.

Once your GitHub account is ready, you can create repositories, push code, and collaborate with others. Git and GitHub together make software development smoother, organized, and efficient.

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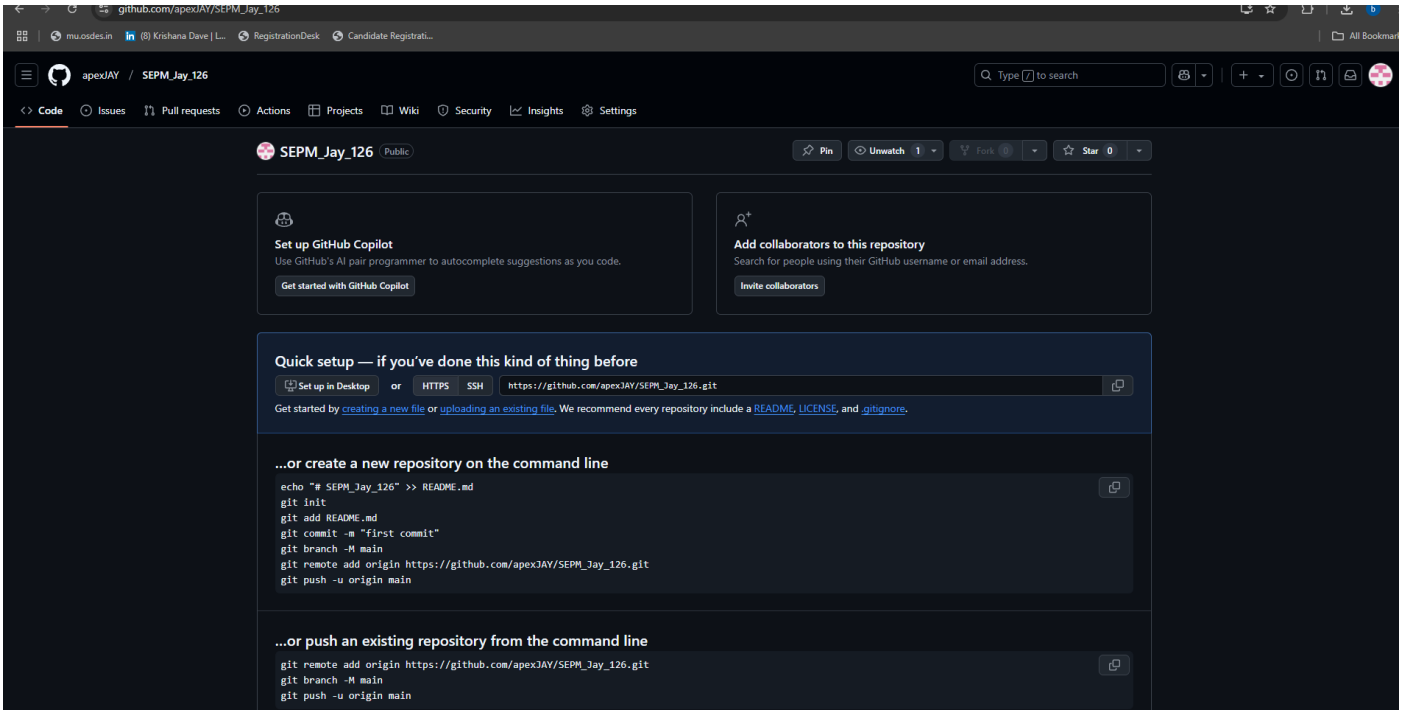
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Code
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Public
Pin
Unwatch 1
Fork 0
Star 0
Set up GitHub Copilot
Use GitHub's AI pair programmer to autocomplete suggestions as you code.
Get started with GitHub Copilot
Add collaborators to this repository
Search for people using their GitHub username or email address.
Invite collaborators
Quick setup — if you've done this kind of thing before
Set up in Desktop
or
HTTPS
SSH
https://github.com/apexJAY/SEPM_Jay_126.git
Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.
...or create a new repository on the command line
echo "# SEPM_Jay_126" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/apexJAY/SEPM_Jay_126.git
git push -u origin main
...or push an existing repository from the command line
git remote add origin https://github.com/apexJAY/SEPM_Jay_126.git
git branch -M main
git push -u origin main

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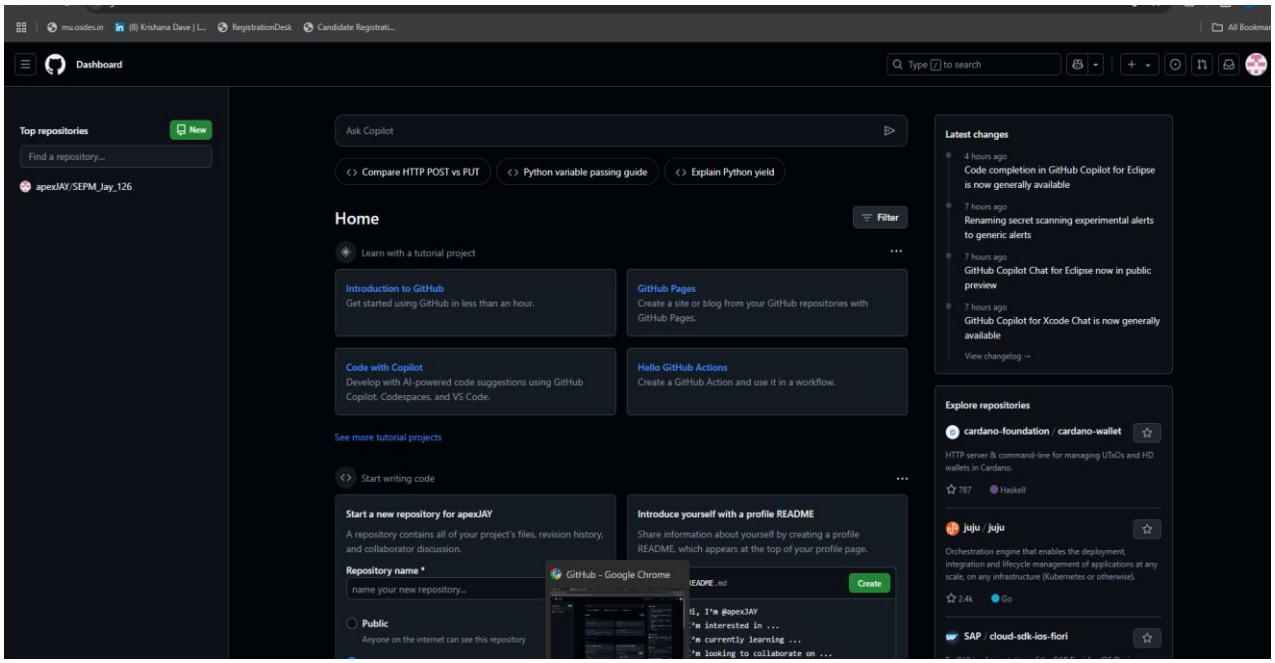


**Conclusion :** Thus we have successfully created github account.