Experiment 2

AIM: To study and implement making a GIT account.

THEORY:

1. Version Control Systems (VCS)

Definition:
A Version Control System (VCS) is a tool that helps you manage changes to source code over time. It allows multiple developers to work on a project simultaneously and keeps track of every modification.

Types:

- **Centralized VCS (CVCS)**: Single central server (e.g., SVN)
- **Distributed VCS (DVCS)**: Each developer has a copy (e.g., Git)

Benefits:

- Tracks project history
- Enables collaboration
- Allows rollback to previous versions
- Supports branching and merging

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2. Git

Git is a **Distributed Version Control System** developed by **Linus Torvalds** in 2005.

Key Concepts:

- **Repository**: Project folder with .git directory
- **Commit**: Snapshot of code changes
- **Branch**: A parallel version of your repository
- **Merge**: Combine changes from different branches
- **Clone**: Copy of a remote repository
- **Push**: Upload changes to remote repo
- **Pull**: Download latest changes from remote repo

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3. GitHub

GitHub is a **cloud-based Git repository hosting service** that lets you:

- Store Git repositories online
- Collaborate with others
- Track issues
- Host project documentation
- Deploy static sites (via GitHub Pages)

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4. Steps to Create a GitHub Account

1. Go to https://github.com
2. Click **Sign up**
3. Enter:
   - Username
   - Email
   - Password
4. Verify your email address
5. Choose a plan (Free is enough to get started)
6. Complete onboarding (optional)
7. You're all set!

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5. Example Git Workflow on GitHub

Let's say you want to contribute to a project or work on your own:

Basic Workflow

```bash
# Step 1: Clone the GitHub repository
git clone https://github.com/your-username/your-repo.git
cd your-repo

# Step 2: Create a new branch for your feature
git checkout -b feature-branch

# Step 3: Make changes and commit
git add .
git commit -m "Added a new feature"

# Step 4: Push your changes to GitHub
git push origin feature-branch

# Step 5: Create a Pull Request (PR) on GitHub
# Go to the GitHub repo in your browser
# Click "Compare & pull request" → Add description → Create PR

# Step 6: Merge PR (if you're the owner or once approved)
# Done!
```
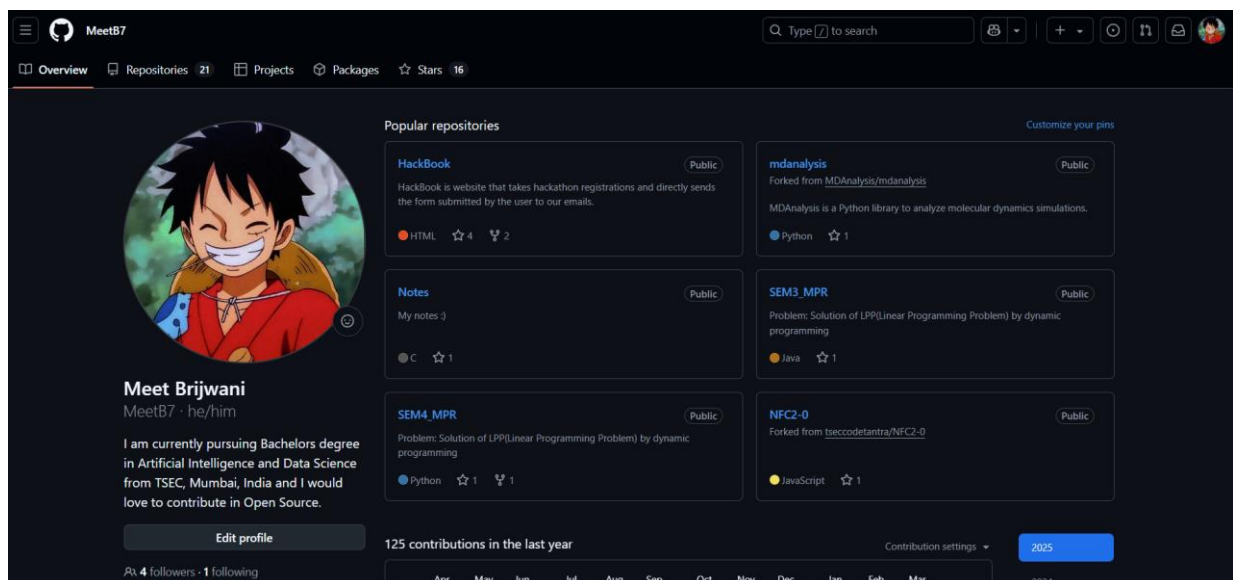
Screenshots:

Conclusion: Hence, we studied and implemented creating a GitHub account.