University of Colombo School of Computing
SCS1303 - Introduction to Software Engineering
Git & GitHub
Tutorial 04

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1. Setup and GitHub Account

I.   Install Git : Visit: https://git-scm.com/

II.   Download Git for your OS and install it.
      Windows: https://youtu.be/t2-l3WvWvqg
      Mac OS: https://youtu.be/9GZmaxaQV0c

III. Verify installation: git --version

2. Create a GitHub Acccount

I.   Go to https://github.com/

II.   Sign up using your email.

III. Confirm your email address and set your GitHub profile.

IV.   GitHub Docs: https://docs.github.com/

3. Configure Git(in terminal or VS Code terminal)

git config --global user.name "Your Name"
git config --global user.email "you@example.com"
git config --list

4. Creating a Local Repository

I.   Initialize a Git Repo
      I. Create a new folder for your project:
      mkdir my-first-repo
      cd my-first-repo

      II. Initialize Git:
      git init

II.   Track Files with Git
      I. Create a new file:
      echo "# My First Git Repo" > README.md

      II. Check file status:
      git status

      III. Stage and commit:
      git add README.md
      git commit -m "Initial commit"

5.   Working with GitHub
  I.   Create a GitHub Repository
       I. On GitHub, click + → New Repository.

       II. Name it: my-first-repo, leave it public, don't initialize with README.
       III. Copy the repository URL.

 II.   Connect Local to GitHub
       I. Line the remote:
       git remote add origin https://github.com/your-username/my-first-repo.git

       II.Push your code:
       git branch -M main
       git push -u origin main

6. Make Changes and Commit
  I.   Edit README.md (add a second line).
 II.   Repeat the Git steps:
        git status
        git add README.md
        git commit -m "Updated README with a second line"
        git push

7. More Practice Activites
  I.   Create file and delete it:
        touch temp.txt
        git add temp.txt
        git reset temp.txt
        rm temp.txt

 II.   Check logs:
        git log

III.   Clone any public repository:
        git clone https://github.com/octocat/Hello-World.git
        cd Hello-World

IV.   Explore:
        git log
        git status

8.   Install VS Code Git Extension

9.   Create a Mini Python Program
  I.   Open VS Code and create a folder called MiniApp.
  II.   Inside, create a file greet.py:

```python
def greet(name):
    return f"Hello, {name}! Welcome to GitHub."

if __name__ == "__main__":
    user = input("Enter your name: ")
    print(greet(user))
```

  III.   Open Terminal in VS Code and initialize Git:

```
git init
git status
```

10. Commit & Push to GitHub
  I.   Create a .gitignore file:

```
__pycache__/
*.pyc
```

  II.   Stage and commit:

```
git add .
git commit -m "Initial commit of MiniApp"
```

  III.   Go to GitHub → Create a new repository called MiniApp.
  IV.   Copy the repo URL and connect remote:

```
git remote add origin https://github.com/your-username/MiniApp.git
git branch -M main
git push -u origin main
```

11.   Modify and Push Again
  I.   Edit greet.py to include timestamp:

```python
import datetime

def greet(name):
    now = datetime.datetime.now()
    return f"Hello, {name}! Current time is {now:%Y-%m-%d %H:%M:%S}"

if __name__ == "__main__":
    user = input("Enter your name: ")
    print(greet(user))
```

II. Save and push:
    git add greet.py
    git commit -m "Added timestamp to greeting"
    git push

12. Collaborate
  I. Clone a classmate's repo:
     git clone https://github.com/peer-username/MiniApp.git

  II. Make a new branch:
      git checkout -b add-comment

  III. Add a comment in greet.py and push:
       git add .
       git commit -m "Added a comment for clarity"
       git push origin add-comment

  IV. Submit a Pull Request on GitHub:
      Go to the repo on GitHub → "Compare & pull request"

Submission:

- **Time allowed:** 1.00 PM – 3.00 PM.
- **Submission method:** Upload your report to the **VLE (Virtual Learning Environment)** using the provided link.
- **Report**: Include screenshots of your work with the VS Code activities.
- **File format:** PDF
- **File naming format: YourName with Initials_IndexNumber_GitActivites.pdf**
  (e.g., Weerawardhana APK_122344_GitActivities.pdf)