Secured Software Engineering
(COMSM0164)

Lab Exercise: GitHub Bootcamp

Prerequisite:

(1) Visual Studio Code (VS Code)
(2) A git client (GitHub Desktop - https://desktop.github.com/) - optional
(3) GitHub user account (https://github.com)
(4) Git Cheat Sheet (https://education.github.com/git-cheat-sheet-education.pdf)

Overview

The aim of this lab is to familiarise with GitHub as a developer collaboration tool. You will achieve this through a set of exercises that acts as a head start to explore more details about the GitHub environment.

Ensure to have created a GitHub account before broceeding the teaksAll through the exercises you will work as a team, using git cheat sheet to identify the appropriate git command to execute in order to achieve a task.

Task 1: Install Node.js and NPM

You can download the latest LTS version from https://nodejs.org/en. Follow the prompts in the Node.js Installer and customize the defaults, if necessary. When you're done, you should have installed Node.js, as well as NPM (Node Package Manager).

Verify the installation by running the following commands in your terminal:

```
node -v
npm -v
```

If the versions of Node.js and NPM show up, then your installation was successful.

Task 2: Project setup and GitHub Initialisation

This task is to be achieved by one member of the team. This person is responsible for initiating the collaboration process by cloning an existing project from GitHub.

(1) Create a new directory called g_bootcamp as a project workspace.
(2)
(3) **Clone** the repository xxx into the project workspace.
(4) Setup local dependencies to ensure that the program executes locally.
(5) Create a GitHub repository for your new project
(6) Commit project changes to git and push to remote GitHub repository
(7) Invite every other member of the team to the shared repository using their GitHub Ids.

Task 3: Project setup and GitHub Initialisation

This task is to be achieved by every other member of the team besides the member responsible for task 2. At the end of this task, all team members will have an identical local copy of the shared repository.

(1) Create a new directory called g_bootcamp as a project workspace.
(2) **Pull** the shared repository from task 2 into the project workspace.
(3) Setup local dependencies to ensure that the program executes locally.

Task 3: Branching and Merging

Assume that each member of the team is assigned a unique function F1 … Fn where n is the size of the team.

1. Create a branch from the master and write a skeletal implementation of Fn in testclient.js. For example:

```
async Fn(){
console.log("Hello from client. This is Fn implementation")
}
```

2. Once you are happy with your implementation commit your changes to git

3. Write a similar skeletal implementation of Fn in testserver.js. For example:

```
async Fn(){
console.log("Hello from server. This is Fn implementation")
}
```

4. Once you are happy with your implementation commit your changes to git.

5. You have now come to the end of the implementation sprit and everyone is now required to merge their changes to the main branch. Achieve this task using the appropriate git command.

Task 4: Project measurements

1. Get the list of all commits to the project using the appropriate git command
2. Get the list of all remote branches using the appropriate git command.
3. Get the list of all local branches using the appropriate git command.
4. Create a branch from the master and write a skeletal implementation of Fn in

Deliverables

There are no deliverables, however you are encouraged to discuss your implementation with the course lecturer or TA.