**SE-Assignment-4**

What is GitHub, and what are its primary functions and features? Explain how it supports collaborative software development. Repositories on GitHub:

A platform that allows developers create, store and manipulate their software. One is able to create a remote repository for their task easily and access or share to others.

What is a GitHub repository? Describe how to create a new repository and the essential elements that should be included in it. Version Control with Git: a repository in GitHub refers to a remote folder.  In the upper-right corner of any page, select, then click new repository. · Type a short, memorable name for your repository.

Explain the concept of version control in the context of Git. How does GitHub enhance version control for developers? Branching and Merging in GitHub: refers to a way developers are able to edit changes or saving without being on the main repository.\

What are branches in GitHub, and why are they important? Describe the process of creating a branch, making changes, and merging it back into the main branch. Pull Requests and Code Reviews: a branch is a representation of the actual storage for changes or any other tasks. In GitHub.com, navigate to the main page of the repository. Under your repository name, click Issues. In the list of issues, click the issue that you would like to create a branch for.

What is a pull request in GitHub, and how does it facilitate code reviews and collaboration? Outline the steps to create and review a pull request. GitHub Actions:

 a proposal to merge a set of changes from one branch into another.

* On GitHub.com, navigate to the main page of the repository.
* In the "Branch" menu, choose the branch that contains your commits.
* Above the list of files, in the yellow banner, click Compare & pull request to create a pull request for the associated branch.
* Use the base branch dropdown menu to select the branch you'd like to merge your changes into, then use the compare branch drop-down menu to choose the topic branch you made your changes in. Type a title and description for your pull request.

Explain what GitHub Actions are and how they can be used to automate workflows. Provide an example of a simple CI/CD pipeline using GitHub Actions. Introduction to Visual Studio:

CI/CD automates your builds, testing, and deployment so you can ship code changes faster and more reliably. Learn more about CI/CD fundamentals.

What is Visual Studio, and what are its key features? How does it differ from Visual Studio Code? Integrating GitHub with Visual Studio: refers to source code editor

Key features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded version control with Git

Describe the steps to integrate a GitHub repository with Visual Studio. How does this integration enhance the development workflow? Debugging in Visual Studio:

To integrate select on the source control button. This makes it easier to committing changes or uploading files to the GitHub repository.

Explain the debugging tools available in Visual Studio. How can developers use these tools to identify and fix issues in their code? Collaborative Development using GitHub and Visual Studio: extensions that help in debugging or the highlights that help identify errors easily.

* Run and Debug view: displays all information related to running, debugging, and managing debug configuration settings.
* Debug toolbar: has buttons for the most common debugging actions.
* Debug console: enables viewing and interacting with the output of your code running in the debugger.
* Debug sidebar: during a debug session, lets you interact with the call stack, breakpoints, variables, and watch variables.

Discuss how GitHub and Visual Studio can be used together to support collaborative development. Provide a real-world example of a project that benefits from this integration. Easier committing and pushing requests. When GitHub and Vs code are integrated it is easier to complete some actions like updating repositories