# Mbooi Lutholwethu SE Assignment 4

* **GitHub** is a web-based platform that utilizes Git for version control and is primarily used for hosting and managing software development projects. Example of its primary features and functions are GitHub Actions, Pull requests, repositories etc.
* A **GitHub repository** is a central location where all the files and their history for a particular project are stored. To create a new repository, you must Sign in to your GitHub account then Click on the “Repositories” tab and then the “New” button. Essentials elements which need to be added are:   
  1, **README.md file**: Provides an overview of the project.  
  2, **LICENSE**: States the licensing terms for the project.  
  3, **Source Code Files**: The actual code and related files.
* Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later. GitHub enhances Git by providing a web-based interface and additional features such as: Pull requests, Hosting, Collaborative tools etc
* Branches in GitHub allow developers to work on different parts of a project simultaneously without affecting the main codebase. To create a new branch, you must log in to your GitHub account, Go to your GitHub repository. Click on the branch dropdown menu. Enter a name for the new branch and create it.   
    
  To make changes to a branch: Use **git checkout [branch-name**] to switch to the new branch**. Use git commit -m "Description"** to commit changes.  
  Merging Back into main Branch: Push the branch to the remote repository using **git push origin [branch-name**], open a pull request from your branch to the main branch.
* A pull request (PR) is a method of submitting contributions to a project.   
  To create a Pull Request, you Push your branch to the repository, navigate to the "Pull Requests" tab and click "New Pull Request", Add a title and description, then create the pull request.
* GitHub Actions is a CI/CD service provided by GitHub to automate workflows directly within the GitHub repository. It allows users to create workflows that build, test, and deploy code.
* Visual Studio is an integrated development environment (IDE) from Microsoft. It provides comprehensive tools and services for developing applications across multiple platforms. Some key features include Code editor, Debugger, Compilers, Extensions.  
    
  **Visual Studio**: Full-featured IDE, best suited for large-scale projects and enterprise-level applications. **Visual Studio Code**: Lightweight code editor, ideal for quick editing and smaller projects, with support for extensions.