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| Course | Special topics & Cybersecurity |
| Assignment 2 | Agile Software Development and Software Bill of Material |
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1. Introduction

In this assignment, the tasks that I am going to perform will be to fork an open-source GitHub Repository, make modifications to the code, create a new feature branch, commit the modifications, push them to the repository, merge the branch with the main branch, and generate a software bill of materials (SBOM) using the scan OSS software. I chose the OpenAI GitHub Repository for this assignment, and I did modifications to the

1. Forking of the Repository

Firstly, a personal GitHub page has been created and then the chosen GitHub Repository which is the OpenAI has been forked from its original location. For forking the specific repository, I just clicked on the “Fork” button on top right side of the site and created a copy of the repository.

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1. GitHub Desktop Setup

To make the forking easier, I had to download and install GitHub Desktop on my Laptop before forking the OpenAI Repository. Then I selected the repository from the available repository list to clone the repository.

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1. Creating new branch under the repository

To make the modifications, I created a new branch under the repository. To do that, first I selected create new branch as shown in the screenshot below.

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1. Making changes to the code

To make changes to the code, I located the available files under the newly created branch in the OpenAI GitHub Repository. Then I made the changes on the code of this file: openai-cookbook/examples/Customizing\_embeddings.ipynb . After making the desired changes I hit the ‘commit changes’ button to make the changes into design. In the last screenshot, the changes can be seen.

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1. Software Bill of Materials (SBOM)

Once the modifications were committed, I needed to compare and pull requests so that the changes can be merged for the improvement. After this, the .zip file for the code has been downloaded so that I can scan it on ScanOSS SBOM Workbench. Before scanning it on ScanOSS SBOM Workbench, I already downloaded and installed ScanOSS SBOM Workbench on my desktop. Once the file is downloaded, I unzipped the file and then located it through ScanOSS SBOM Workbench by selecting the option “New project”. The screenshots below will demonstrate how the file was scanned and ScanOSS monitored the file to give some information such as licensing information, software dependencies & to ensure compliance with regulations.

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1. Conclusion

To finish this project, it was necessary to fork an open-source repository, adjust the code's structure, create a new feature branch, commit, and push the changes, and create an SBOM using the Scan OSS programme. The OpenAI Cookbook repository was successfully upgraded to include improved structural components by performing these steps in the correct order. The information provided by the SBOM, which contains helpful information on the open-source components used in the repository, facilitates compliance and tracking. This project increased the understanding of software development concepts including version control, code collaboration, and the importance of software bill of materials (SBOM).