**Assignment**

*Open-Source Software Engineering (SEZG587 / SEUSZG587)*

Due Date: **26th April, 2025**

Marks: **20**

*(This is an individual assignment and each student is required to submit the assignment on or before the due date)*

**Title:**

Adoption of an open-source application (solution) as a component in an existing product / project

**Objective:**

Open-source solutions are increasingly being incorporated as components in products / projects to cater to specific functional requirements right from data persistence to machine learning algorithms. The purpose of this assignment to adopt an open-source application (solution) as a component in an existing product / project. Such a requirement may arise due to one or more of the following reasons (not an exhaustive list).

1. Replacement of an existing and may be technologically obsolete component in the product / project with an equivalent but better and up to date open-source solution
2. Reduce maintenance costs of proprietary components in the product / project by replacing them with equivalent open-source components
3. Enhancing the capability of the product / project by building new features via the adoption of compatible open-source solutions rather than developing new proprietary solutions

**Steps:**

1. Identify a candidate product / project that you are familiar with and have access to the design and optionally the code. (It could be a product / project from your day job as long as you are careful not to divulge proprietary and confidential information in the assignment)
2. Study the product / application and determine atleast one open-source solution that you could use in the product / project. (Hints on why you many use an open-source product are provided above)
3. Submit a report in the following format.

**Report Format:**

1. Brief Description of the product / project selected (If it is an organization specific project, please do not divulge any proprietary and confidential information)
2. Description of the open-source solution proposed to be used in the product / project
3. Proposed role (purpose) of the open-source solution in the product / project
4. Challenges (technical & non-technical) to address for successful adoption of the open-source solution in the product / project
5. Benefits expected to be derived by the use of the open-source solution vs. developing it in-house. (Quantify the benefits wherever possible)
6. Open-Source Licensing Compatibility – Describe the licensing model of the open-source solution and determine if the licensing under which the open-source solution is provided is compatible with the manner of usage to which it is intended to be put in the product / solution. Document any restrictions that you may have to comply with to use the open-source solution to its intended purpose without violating its licensing agreement.
7. The current level of activity, adoption, funding model and the future published roadmap of the open-source solution chosen with an objective to establish its longevity
8. Risks of adopting the open-source solution in the product / project
9. Comparison with other similar open-source solutions, if any, and justification for selecting the particular open-source solution