CSE408 Software Engineering

Lab Activity 1

Roll No. AU2340222 **Name: Dev Kansara**

Introduction to Software Engineering

Activity 1: Identify Software around you (Individual task)

- **Objective is to understand** software classification.

List any 5 software systems that we use daily, and complete the table:

Software Name	Type	Purpose	Users
WhatsApp	Application	Communication	General Public
Windows OS	System	Resource management	Computer users
Auris	Application	Course & Attendance Management	Students & Professors
ChatGPT	AI	General Information Extraction	Students
Google Chrome	Application	Web Browsing	Internet Users

Activity 2: Choose **one system** for example (Individual task):

- College Library System
- Online Examination System
- Student Attendance System

- **Prepare a document with following details:**
  - Identify problem statements / End user requirements
  - Write basic requirements (5–7 points)

    For example: Library Management System
    - Requirement 1: Student Login (think about processes and data requirements)
    - Requirement 2: Issue/Return books (think about data points)

Problem Statement: Manual Attendance is time-consuming, also prone to “proxy”.

- Requirement1: Secure login module for students, faculties and teaching assistants.
- Requirement2: Simple attendance marking interface that generates unique QR code or biometric trigger.
- Requirement3: Realtime validation by geofencing (to avoid proxy)

- Requirement4: Students dashboard which shows attendance percentage, total classes held, classes attended in real-time
- Requirement5: Low attendance alert. System sends emails to students with low attendance.
- Requirement6: Leave Management page for students to apply and for faculties to track their leaves.

Activity 3: Group Discussion (10–15 minutes)

Topic: Why software projects fail?

- Wrong estimation of consumer traffic
- Insufficient testing
- Lack of communication
- Unclear Objective
- Poor costing estimation
- Poor UI/UX

Activity - 4 Introduction to SDLC

Aim: To study concepts of Software Engineering and Software Development Life Cycle (SDLC).

SDLC Phases

1. Requirement Analysis: Gathering information from stakeholders on what needs to be build. Collecting details of features and functions through communication in a software requirement specification document.
2. Design: It involves building the roadmap for actual construction. Along with planning it involves modelling the software requirements and how the final product will look like. Listing most appropriate tools or frameworks that can be used to build the project.
3. Implementation / Coding: This is actual construction phase where all the required data structures and algorithms are practically implemented to adhere to the design and make required functionalities possible.
4. Testing: Crucial part of SDLC which involves whether the functions run as per requirements individually or as a whole or not.
5. Deployment and Maintenance: After testing all the components, the software is ready to be delivered to the users, which is done through deployment. The customer evaluates delivered product and identifies issues which are to be resolved in maintenance phase.

Write very brief note on each phases of SDLC.

Reference and Additional Readings:

- https://aws.amazon.com/what-is/sdlc/
- https://www.geeksforgeeks.org/software-engineering/software-development-life-cycle-sdlc/