PROJECT OUTLINE: VLAB - PRODUCT QUALITY
(SSD - 29)

Problem Statement:

To create a virtual lab which helps the end user to learn about some of the quality metrics required to measure the quality of a software product. The user will get a practical understanding by studying the simulation of a sample software design and calculating the given metrics.

There will be an interactive website containing a brief introduction, some theoretical concepts, a simulator and the procedure to follow to calculate all the given metrics for measuring the software quality. The problem statement will be provided to the user. He/she has to analyse it and perform the required task.

Solution Approach:

- There will be a sample exercise first. The user will go through it to become familiar with all the procedures to follow.
- Then there will be an unsolved exercise. The case study for that problem will be provided to the user. The user will go through it.
- The user has to identify the various requirements, the quality metrics to be calculated, the inputs required, the output format etc. before performing the task and then proceed further.
- Then user will perform the task (writing a code probably to calculate the metrics), debug the errors and submit it.
- Finally, there will be a set of objective-type questions for the user to self-evaluate his/her understanding about the topic.

System Requirements:

- **Languages/Technologies required**: HTML, CSS, JS (need to identify the exact JS libraries).
- Latest version of any of the modern web browsers like Internet Explorer, Google Chrome, Mozilla Firefox etc. with JavaScript and Adobe Flash Player (for simulation) enabled.
- Code editing applications like NotePad++, Sublime etc. will be beneficial.

Constraints:

- **Functional Constraints:**
  - The GUI should be simple and user-friendly.
  - The simulator should be easy to understand by the user.
  - All the case studies, theoretical concepts etc. given to the user must be precise and accurate.
  - The platform given to the user for the task (probably an IDE to code) must be simple and should produce correct results.

- **Non-Functional Constraints:**
  - Understandability.
  - Completeness.
  - Reliability.
  - Consistency.
  - Security.
  - Testability.
  - Scalability.
  - Efficiency.

Timeline:

- **13/10/2020 to 24/10/2020:**

  Understanding the problem statement correctly, analyzing which technologies (like a specific JS library) are exactly needed and doing some hands-on practice on those technologies.

- **25/10/2020 to 01/11/2020:**

  Getting started with the initial phase of the project. Creating a blueprint and flow-chart of the project, dividing them into different modules, assigning the modules to different team members and getting started with them.

- **02/11/2020 to 09/11/2020:**

  Advanced phase of the project. Adding different functionalities to all the modules (including simulation), error handling and unit testing of all the modules and making an interactive user-friendly GUI.

- **10/11/2020 to 15/11/2020:**

  Integration of all the modules and debugging (if any error occurs) and finally perform integration testing before submission.