CLOSURE REPORT

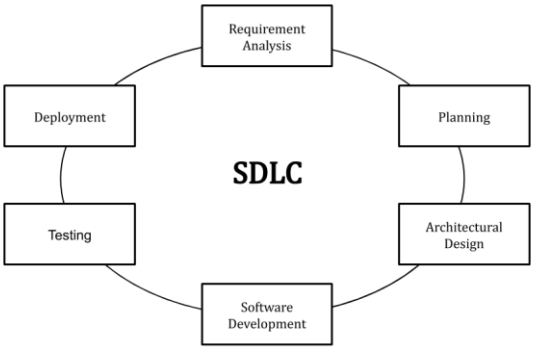
1. GENERAL INFORMATION

The general information about the Fashion 24 x 7 (Online Clothes Shopping Website) is as follows:-

1.1. PRODUCTIVITY:-

- As per the requirements gathered from the customer during initial phase of the software development, the functionalities like CRUD operations for online clothes shopping scenario has been added successfully. That is a registered customer can add, remove clothes product into & from the cart.
- Also, admin can add new products as well as update existing products. This functionality of the proposed website can be used effectively to apply discounts on the products.
- The new i.e. unregistered customers may browse clothes products even without official registration. This functionality is useful to achieve non functional requirement of the website, which is to provide hassle-free use of the website as far as customers are concerned.
- This proposed website for online clothes shopping can be accessed by any latest version of Google Chrome through smart devices as well as personal computers, laptops.
- Spring Security concept is used effectively to secure data by including 'Authentication, Authorization '.

1.2. PROCESS USED & DEVIATION:-

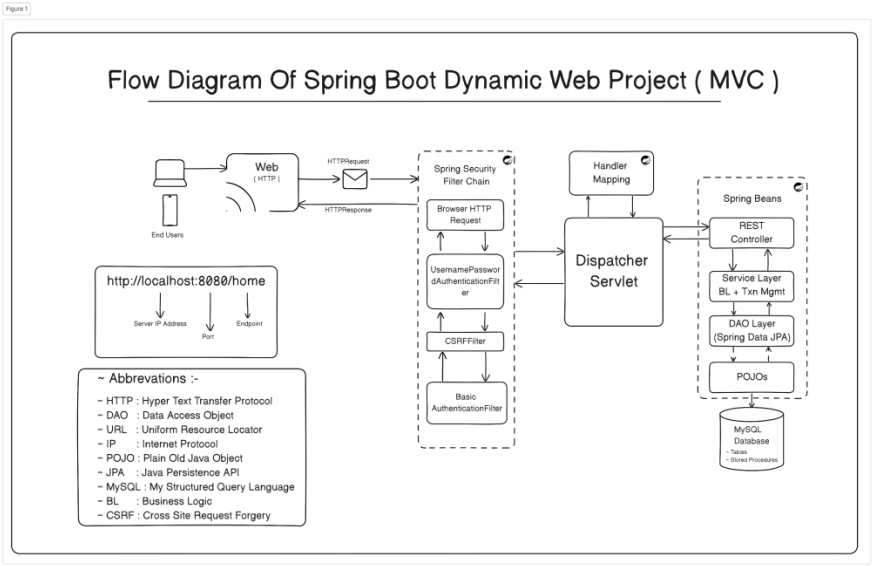


Fashion 24 x 7 (Online Clothes Shopping Website) has been successfully implemented the SDLC Lifecycle in which it went through different phases, which are described as follows:-

1. Requirement Analysis: - Basic requirements were gathered from the

customer and analyzed in a proper way so as to set aim, objectives, and time constraints of the proposed project.

2. Planning:- To meet the specified requirements given by the customer, planning phase is conducted in which the various technologies were taken into consideration for the online clothes shopping website project.
3. Architectural Design: - In this phase, basic flow of the whole project was finalized. Also, included the necessary security measures in the architectural design of the project. The basic lifecycle of a request sent by the client from browser to the response generated by the server is as follows:-



4. Software Development: - In this phase of software development, actual code was written in selected programming languages and finalized frameworks. Fashion 24 x 7 (Online Clothes Shopping Website) has been successfully implemented by using Spring Boot Dynamic Web Project (MVC) and ReactJS as a front end of the project.
5. Testing: - Agile Methodology is used for increasing efficiency of the proposed project. In which, testing is done in parallel with software development. Also, the concept of 'V-Model' is used here effectively, which involves Verification conducted by the developer itself so as to mitigate the defects at earlier stages of the application development.
6. Deployment: - The completed project has been deployed on the EC2 Instance hosted by Amazon Web Services (AWS).

- During the whole process of execution, as some of the requirements were added by the customer in later phases of the Software Development Lifecycle. These changes were effectively considered and revised the structure of the proposed project by adding necessary functionalities. These additions improvised the SRS as per the specified new added requirements.

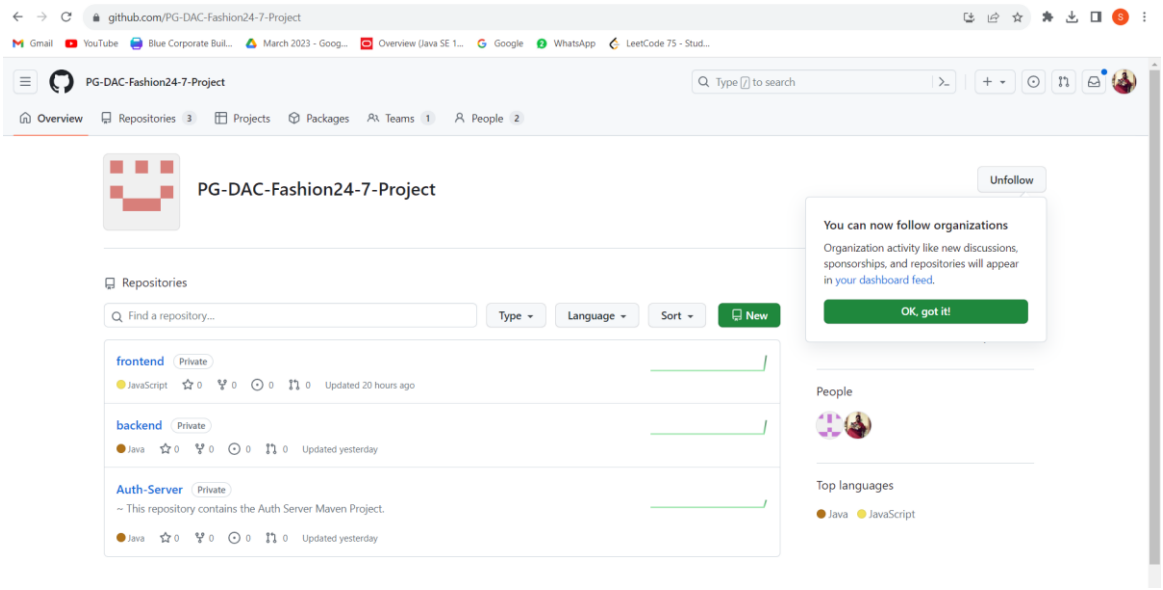
1.3. ESTIMATED & ACTUAL START – END DATES OF THE PROJECT:-

- Estimated Dates:-
  - Start of the Software Development: - 1st August, 2023
  - End of the Software Development: - 25st August, 2023
- Actual Dates:-
  - Start of the Software Development: - 11th August, 2023
  - End of the Software Development: - 31st August, 2023

1.4. TOOLS USED:-

Following are the tools used effectively during the software development of Fashion 24 x 7 (Online Clothes Shopping Website):-

- GitHub: - This tool is used to control versions of the application throughout the development phase. In which separate repositories were created so as to maintain modularity throughout the project.



- Spring Tool Suite (STS):- This tool contains the necessary JVM to compile the written code throughout the Software Development Phase of SDLC. Basic

Debugger also used to detect errors in codes by the developer. Version: 3.9.18 RELEASE, Build Id: 2021091440905, Platform: Eclipse 2021-09 (4.21.0) is used in the project.

- Visual Studio Code: - Visual Studio Code is a streamlined code editor with support for development operations like debugging, task running, and version control. It aims to provide just the tools a developer needs for a quick code-build-debug cycle and leaves more complex workflows to fuller featured IDEs, such as Visual Studio IDE. This tool provided the necessary GUI for developing front end code in ReactJS.

2. RISK MANAGEMENT

2.1. RISK IDENTIFIED AT START OF THE PROJECT:-

Following are the some of the risks encountered at the start of the software development of Fashion 24 x 7 (Online Clothes Shopping Website):-

- Hosting Platform: - At the start of the proposed project, the platform on which the website is going to be hosted was not finalized. The selection of the hosting platform depends on many parameters which will be available at the completion phase of the online clothes shopping website project. Hence, the decision of selection of the hosting platform was finalized at the later stage of the software development.
- Changes in the database selection: - As the development team decided to use MySQL as a database for this project at start of the project. But as the requirements from the customer were frequently changing, development team was in dilemma to switch database to MongoDB, as it gives hassle-free image handling utility.

2.2. RISK ENCOUNTERED DURING THE PROJECT:-

Fashion 24 x 7 (Online Clothes Shopping Website) encountered following risks during the execution of the project:-

- Security of Data:- As Spring Boot Framework does not support using plain text passwords in the application and forces to encrypt all the passwords used for login to ensure more security of the user credentials. Hence, the development team added the Spring Security Filter Chain to ensure required security of the data and password encoder is used to encrypt the passwords.

2.3. NOTES ON RISK MITIGATION:-

'Risk Mitigation' in software development refers to the process of identifying potentials risks that could impact the success of a software project and taking proactive measures to reduce their likelihood or impact. Following are the basic steps are used to handle risks in software development:-

- Risk Identification
- Risk Assessment
- Risk Mitigation Planning
- Risk Monitoring
- Risk Response Execution
- Documentation

In case of our proposed project of online clothes shopping website, risk of security of data mitigated by using 'DAO Base JWT', in which the encrypted user credentials were persisted in database, MySQL in this case.

3. SIZE

3.1. ESTIMATED AND ACTUAL SIZE (IN KLOC):-

'KLOC' (thousands of lines of code) is a traditional measure of how large a computer program is or how long or how many people it will take to write it. The code measured is usually source code. The KLOC metric is often used when evaluating an application's total number of lines of code (LOC) -- or source lines of code (SLOC).

To find KLOC value, divide total number of lines of code by 1000.

- Estimated Size:-
  - Total Lines of Code = 25000
  - KLOC Value = Total Lines of Code / 1000
    = 25000 / 1000 = 25.00

- Actual Size:-
  - Total Lines of Code = 26156
  - KLOC Value = Total Lines of Code / 1000
    = 26156 / 1000 = 26.15

4. DEFECTS

4.1. SDLC Stage Wise Defects:-

Defects (also known as bugs or issues) can occur at various stages of the Software Development Life Cycle (SDLC). Each stage of the SDLC involves different activities, and defects can arise during any of these activities. Here's a breakdown of the common SDLC stages and the types of defects that can be found at each stage:

- Requirements Gathering and Analysis: Requirements Defects: Incomplete, ambiguous, conflicting, or incorrect requirements can lead to defects down the line.
- System Design: Design Defects: Inadequate or flawed design can result in defects during implementation or testing.
- Implementation (Coding): Coding Defects: Errors introduced during coding, such as syntax errors, logic errors, or incorrect algorithm implementations.
- Security Defects: Vulnerabilities due to improper handling of inputs, lack of validation, or other security-related issues.
- Deployment: Configuration Defects: Issues with the deployment environment's configuration that affect the software's behavior.
- Maintenance and Support: Maintenance Defects: Defects that are identified after the software has been released and is in production use.

4.2. Distribution of Defects:-

Defects classification as major or minor can vary based on project specific criteria and severity levels defined by the development team. Here, in this project, the defects are distributed as follows:-

- Major Defects :
  - Requirements Defects
  - System Design
  - Coding Defects
  - Security Defects
  - Configuration Defects
  - Maintenance Defects
- Minor Defects :
  - Performance Defects