Dhirubhai Ambani
Institute of Information and Communication Technology

IT314 - Software Engineering

Guided By: Prof. JayPrakash Lalchandani

All Citizen Bank: Online Banking System

Project Management Document

Group - 57

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Reporting TA - **Jash Rathi (202011070)**

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1. Activity list (Estimate time for each activity. Mention probable dates.)
   a. Formulation of the problem (15th March - Project Proposal)
      - Reading relevant background information
      - Understanding and documenting the requirements
      - Discussions
   b. Designing a solution, documentation (21st March to 1st April)
   c. Relevant learning (26th March to 15th April)
   d. Coding and unit testing (26th March to 28th April)
   e. Documentation (on weekly or biweekly basis)
   f. Testing (15th April to end of the project)
   g. Reviews (28th April onwards)
   h. Re-work and debugging (28th April onwards)

2. Project Plan: For each activity, your estimated start date, end date, responsible person(s).

- Background study and research of various online banking systems and applications such as HDFC Bank, ICICI Bank, etc. Using the information gathered from the background study we created a project detail document that specifies the various functionalities our system would provide, the different users of our system and how would they interact with each other, along with the hardware and software requirements.
  Responsible Person (s): Whole Team
- Software Design Key Items:
  - ➢ Use cases and user stories (Harsh Mehta and Dhwanil Shah),
  - ➢ UML use-case, and diagrams (Harsh Mehta and Dhwanil Shah)
  - ➢ Data flow diagram (Darshil Shah and Dev Sanghvi)
  - ➢ System activity diagram (Jeel Faldu)
  - ➢ ER diagram/Database schema (Yash Shah and Jeel Faldu)

- Relevant learning of front-end and back-end development principles such as HTML, CSS, Javascript, and connection of PostgresSQL database with the back-end from various sources (Dev Sanghvi and Darshil Shah)
- Implementation of the front-end design and functionalities discussed in the software design items via relevant tools such as Bootstrap, VS code, etc.
- Documentation of the project in the form Project Detail Document, Weekly Reports, Design Detail Document and create and update a Github repository by pushing various document and source codes.(Entire Group)
- Testing details are explained in the next section.
- Reviews and debugging: Fixing the issues and bugs faced when the whole system is deployed. (Yash Shah and Harsh Mehta)

3. Testing Strategy: (scheduled every week)
Banking Domain Testing is a software testing process of a banking application for functionality, performance, and security. The main purpose of testing a banking application is to ensure that all the activities and functionalities of a banking software run smoothly with no errors and it remains protected.

Testing banking application assures that all the functionalities provided are not only executed well but also remain protected from hackers.

The levels of testing include
• Unit testing
• Integration Testing
• Data validation Testing
• Output Testing

- **Collecting banking app test cases**. Collection of all the use cases and forming test cases based on that which covers all the functionalities, performance, user experience, and security. (Darshil Shah and Jeel Faldu)
- **Functional testing**. The team runs tests to make sure all functions a development team chose to implement work as expected. (Harsh Mehta and Yash Shah)
- **Database testing**. We need to ensure the data is stored in a structured, easy-to-manage way and the database should also have a mechanism for data restoration (in case of an emergency) and migration (i.e. shifting the database to a different server). (Dhwanil Shah and Jeel Faldu)
- **Banking application security testing**. At this stage, testers assess the way user data is protected by the application. This includes assessing data encryption efficiency and user authentication. A tester also needs to ensure potential data breaches or leaks are automatically reported. For a banking app, measures for handling unauthorized access are necessary — such as an automatic system shutdown. (Darshil Shah and Dev Sanghvi)
- **Performance testing**. This stage becomes important as it includes checking page loading speeds, testing the app's performance as the traffic on network increases and hence system can run smoothly. (Dhwanil Shah and Harsh Mehta)
- **User acceptance testing**. At this stage, a limited number of users (beta-testers) gets to try the app for the first time. The development team records and monitors experiences, ensures they are bug-free, and gets feedback from user acceptance testing participants and helps to navigate the app. (Yash Shah, Jeel Faldu and Dev Sanghvi)

- **Integration testing** is systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit tested components and build a

program structure that has been dictated by design. The entire program is tested as whole. Correction is difficult because isolation of causes is complicated by vast expanse of entire program. Once these errors are corrected, new ones appear and the process continues in a seemingly endless loop.