**Course Title:** Software Engineering

**Group Number:** 4

**Project Title:** Bug Tracking System

**Submission Date:** 5 / 9 / 2022

**Team Members:**

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**Problem Statement:**

The company develops multiple software projects at the same time throughout the year. All projects undergo multiple tests by employing specialized testers, whose role is to find bugs and faults in the developed system and report them to the development team in order to tackle and fix them to ensure a stable software upon deployment.

The predicament lies in the categorization and organization of the bugs discovered, as similar, if not the same, bugs are found during the testing of different projects. And since the data of testing is maintained, let alone stored in our databases, the process of solving said bugs may keep repeating multiple times because its type, severity, and solution are discarded the moment it is solved. More so, having a limited number of developers makes it difficult to employ their skills efficiently when most of the time they are tasked to simultaneously handle the development of software applications and finding solutions for the bugs discovered by the testers.

With all of the points stated above, it is simple to say that the company’s problems stem from a lack of organization when it comes to tackling problems and finding solutions, and the absence of cohesion between the different departments involved in the software development (developers) and testing (testers).

**Desired System:**

The system required mainly should store data related to the projects being developed and tested. This will include the project details, the testers whose role is to test the application and discover bugs, and the developers, which are potentially the ones who developed the software, and will be responsible for solving the bugs and tackling any further enhancements required for the project in question.

The system does not require a registration system, as user registration is required to be the responsibility of an administrator, who will manually add the users and their credentials. However, a login system is required to prevent unauthorized access, and make sure that each user has his own profile that will contain all projects and bugs the user is related to. It is important that the system counteract against attempts to breach the system through means of brute forcing. In light of this, it is also required for users who have forgotten their passwords to request a new one, and the administrator will be responsible for reassigning new passwords for said users. On a side note, developers should have the ability to change their passwords whenever they want to, in an attempt to make sure that their profiles are secure if they doubt that their passwords may have been leaked.

Mainly, there should be three types of profiles (users) in the system, whose responsibilities and capabilities are as follows:

* Administrator:
  + Can add users to the system, edit their information in case a anything requires change, or a password reset is issued.
  + Can delete users in case they no longer participate in the system.
  + Can create a project and assign users to the project.
  + Can edit project information or entirely delete a project depending on what is required.
  + Is responsible for determining a discovered bug’s type and severity and assigning a developer to solve it.
  + Monitors all user activities and obtains any credentials used during any breaching attempt or a failed login attempt.
* Developer:
  + Can keep track of all projects he/she is assigned to.
  + Is required to work on solving his assigned bugs and updating their statuses.
  + Can change his password.
* Tester:
  + Can keep track of all the bugs discovered in his/her assigned projects.
  + Responsible for discovering bugs and describing them.
  + Can view the status of a bug to retest it after an attempted solution.