CMPE281 – Cloud Technologies

Crowd Sourced Community Management

Component # 3

System Architecture Design and Overview

Instructor: Jerry Gao, Ph.D.

Team Members - Group 04

Akshay Sonvane - 011324989

Gaurang Mhatre - 011432200

Pranjal Jain - 011427819

Shaurya Mittal - 011422736

Table of Contents

INTRODUCTION:

Aim of this project is to develop a crowd sourced testing environment for mobile applications based on a selected cloud infrastructure. The complete solution will be accessible to three types of clients. Free-lancer testers, mobile apps project manager and system administrators. These clients will be able to create and manage mobile app testing projects on cloud.

In this high-level design document, we basically talk about the system architecture and design for the component # 3 – Project Manager. This component will support the mobile application testing project management. Through this, project managers will have access to a cloud environment where mobile application projects can be added / updated / deleted / viewed / searched.

SYSTEM ARCHITECTURE DESIGN:

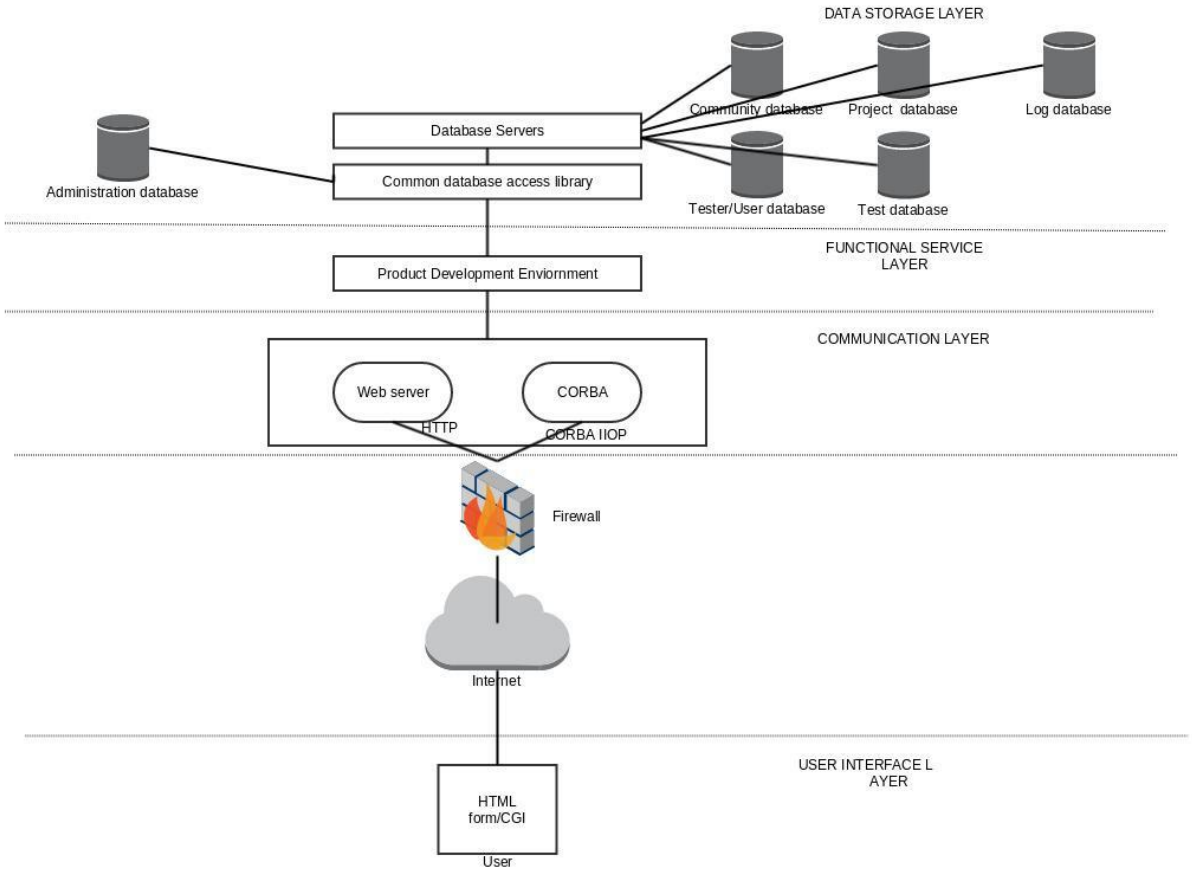

Fig 1: Architecture Diagram

System design will be comprised of following:

1. Data Base Storage Layer: Comprising of database servers and components, all user data will be stored here. We identified database for administrator, community, project, logging and test. MongoDB will be the storage for this project.

2. Functional Service Layer: This layer will be consisting of product development environment.

3. Communication Layer: Webserver and CORBA will be the 2 pillars of communication layer.

4. Firewall: Security layer for the application.

5. User Interface Layer: UI for user interaction which will be on HTML/AngularJS. Project managers will be interacting through this UI for all operations related to project management.

SYSTEM INFRASTRUCTURE DESIGN:

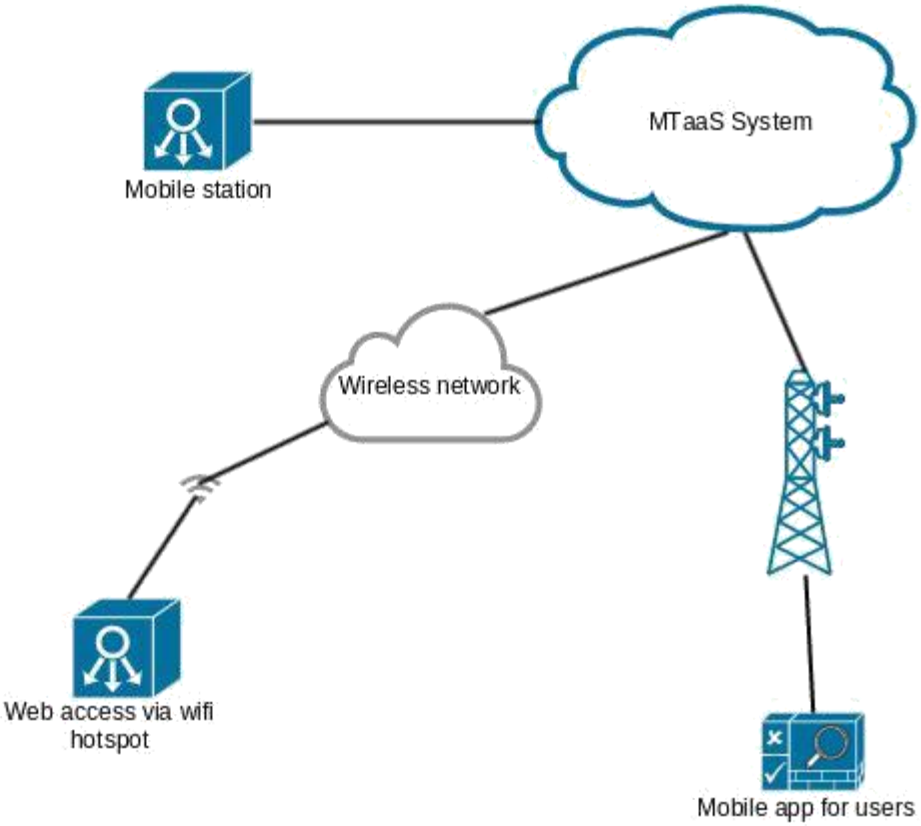

Fig 2: Infrastructure Diagram

System Infrastructure will be comprised of following:

1. MTaaS system will be deployed on machines which are connected via fast speed network.

2. Testers and other users can access the MTaaS via wireless network on their machine and mobile phones.

3. Also, we can deploy a mobile station where we can test on real time mobile/s.

DEPLOYMENT DESIGN:

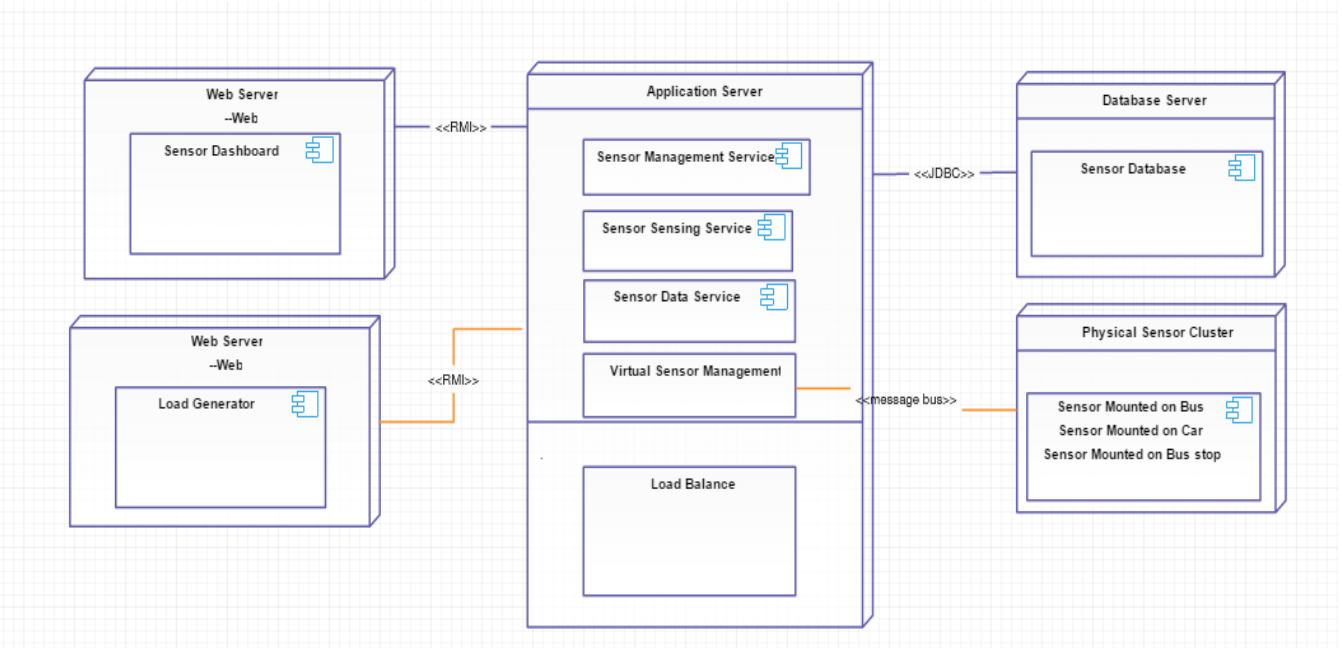

Fig 3: Deployment Diagram

SYSTEM COMPONENT DESIGN:

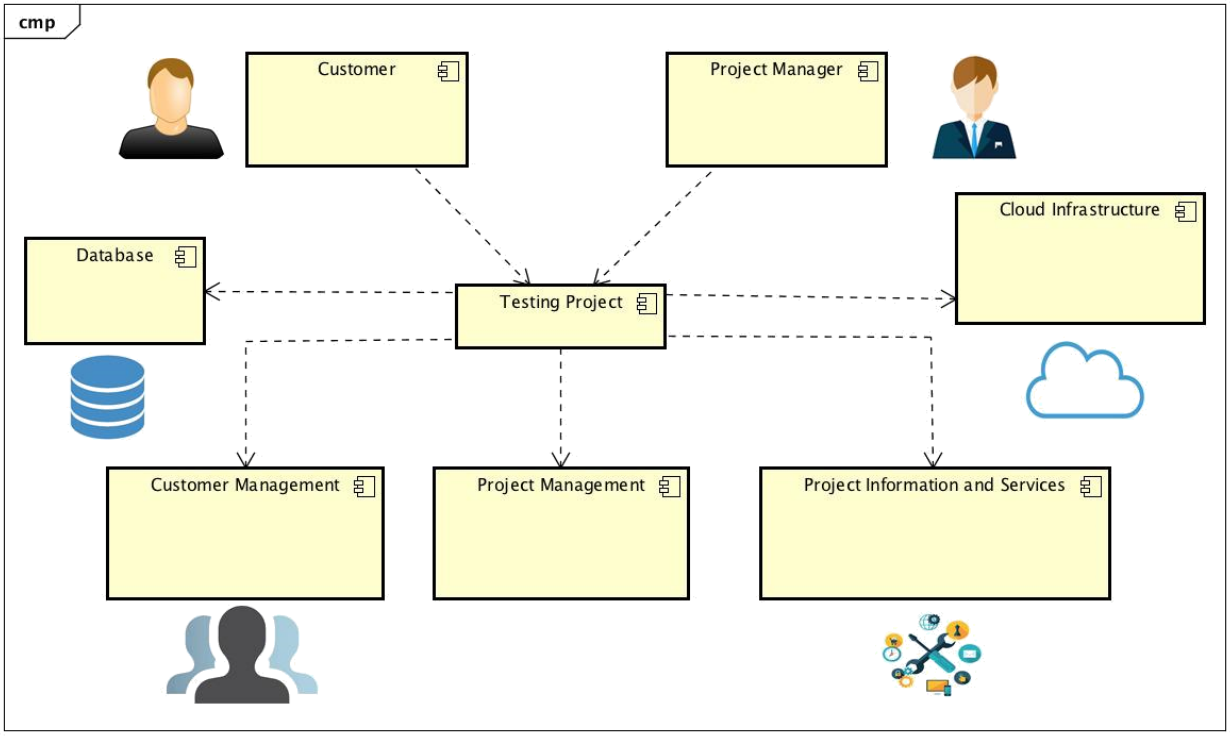

Fig 4: Component Diagram

Users

Product Managers: Product managers will visit the portal to create / update / delete / monitor a mobile application testing project. At any time, they can track the status of project or many any amendments to it. Project information will also be shared with the customers using notifications methods.

Product Customers: Product owners or customers can also access the system to view the progress of the application testing phase.

UML DIAGRAMS:

Use Case Diagram:

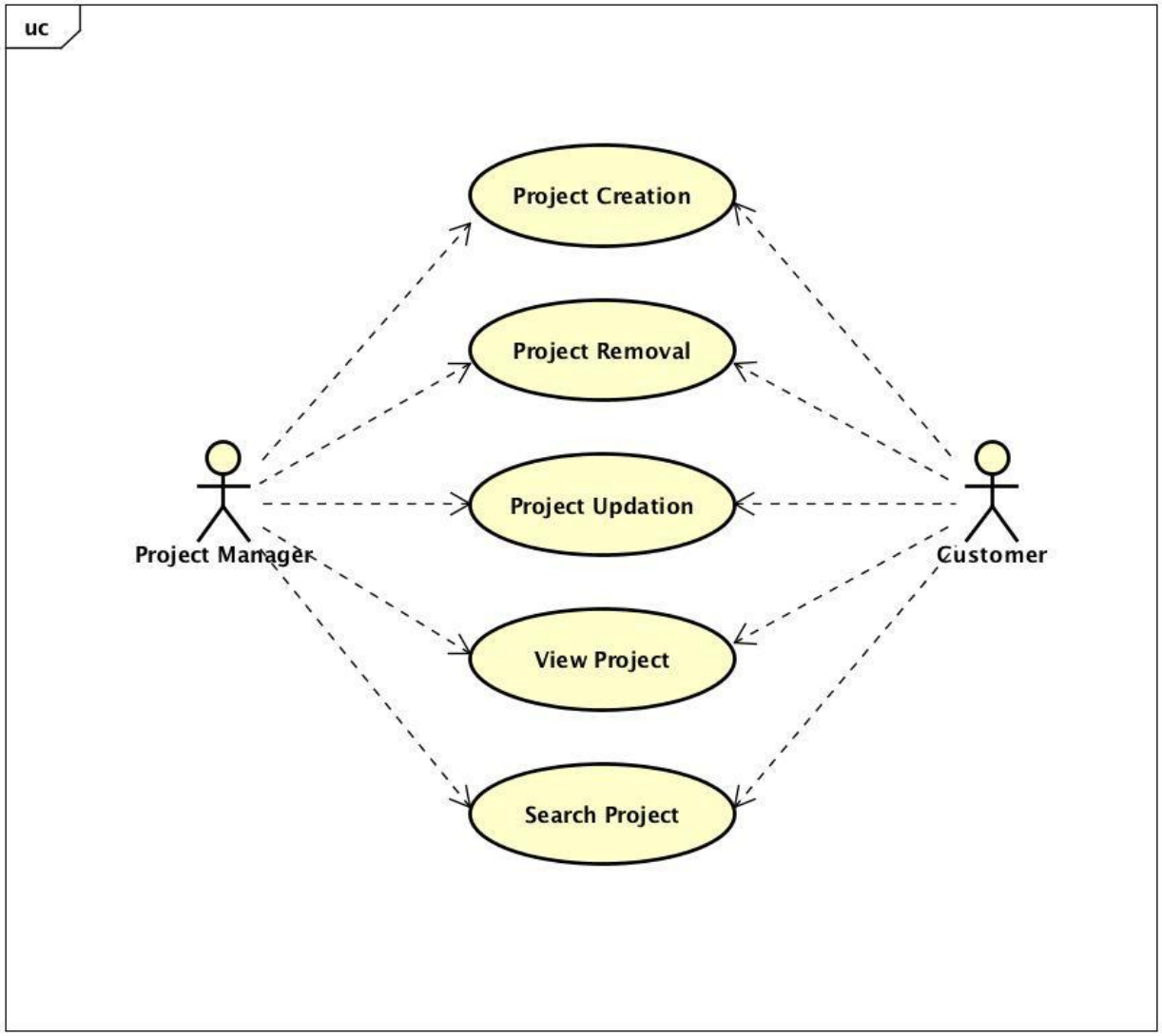

Fig 5: Use Case Diagram for Project Management

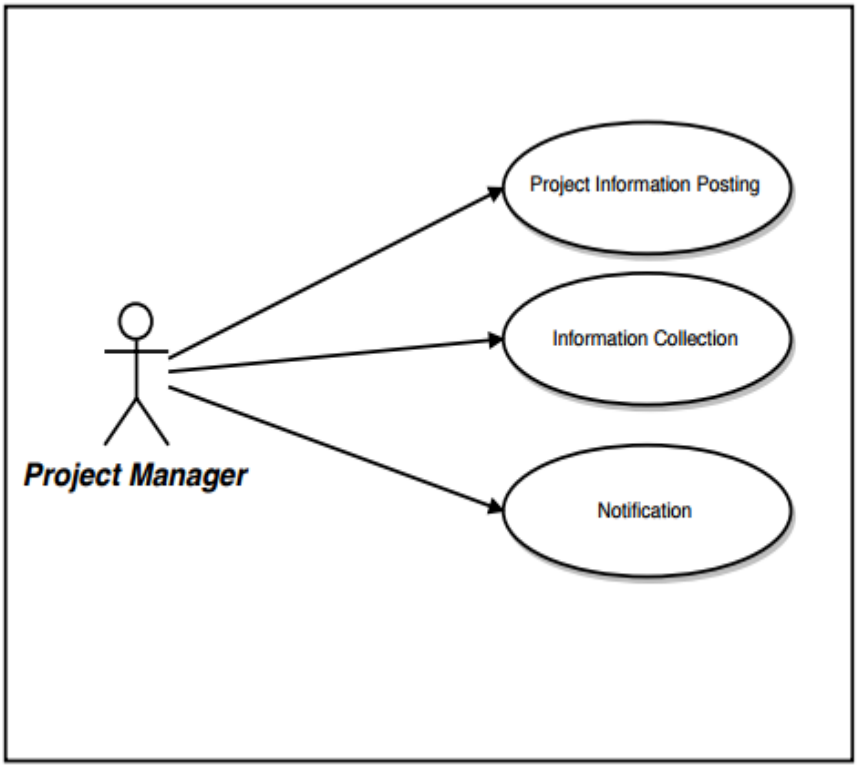

Fig 6: Use Case for Project Information Management

There are typically two users who will be using this application. Both customer and managers have almost the same access rights to the project. They can create a project, update a project, view status of a project, delete a project or search an existing project.

Flow Diagram:

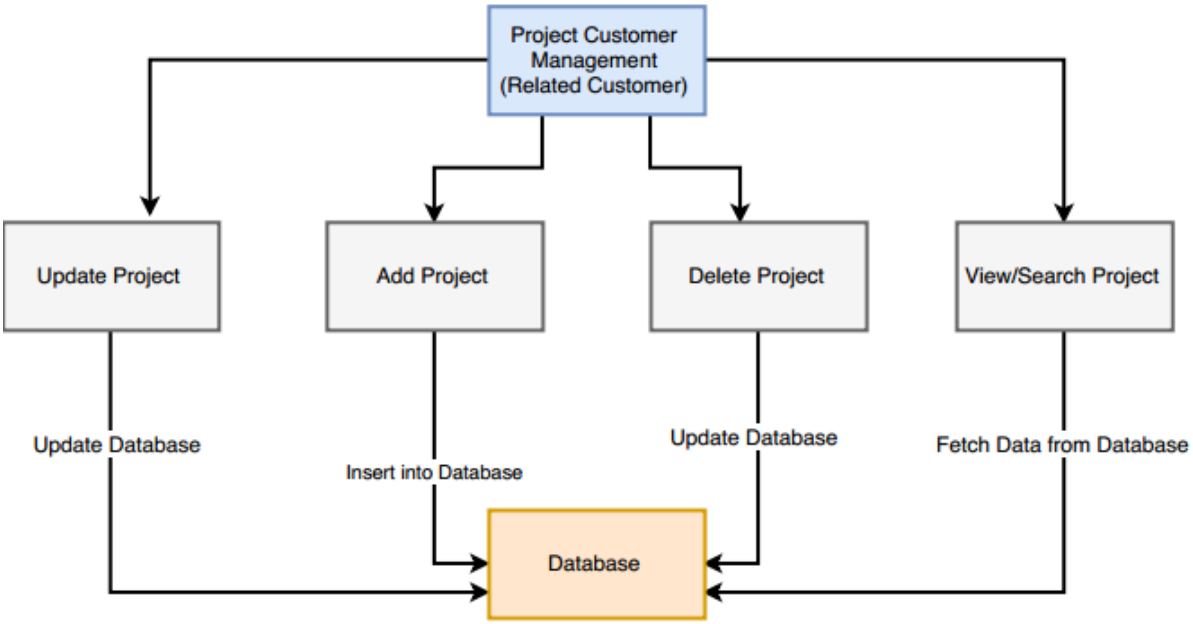

Fig 7: Project Management Flow Diagra related to Customer

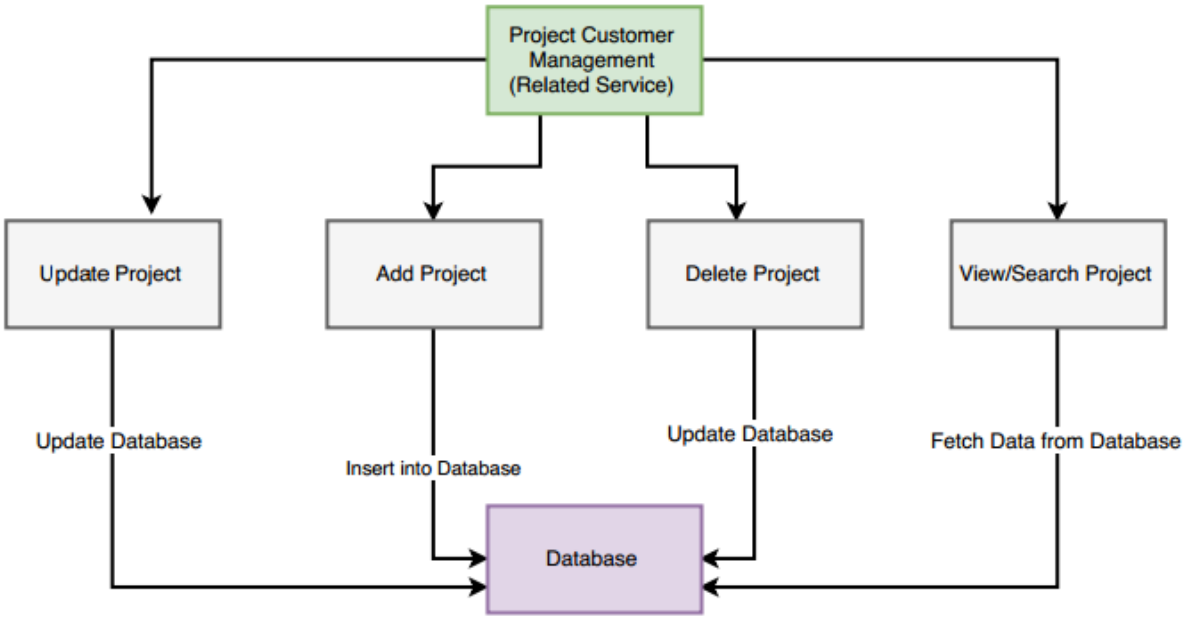

Fig 8: Project Management Flow Diagra related to Service