

SE 4485: Software Engineering Projects

Fall 2024

Architecture Documentation

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| Group Number | 8 |
| Project Title | Design, Develop, and Test a Location Verification App to be Installed on the Two Smartphone Alternatives |
| Sponsoring Company | The Fellows Consulting Group |
| Sponsor(s) | Tom Hill |
| Students | 1. Abdullah Chaudhry 2. Omar Hussain 3. Reya Dawlah 4. Danya Almintakh 5. Alvin Mathew 6. Mageto Nyakoni |

TITLE PAGE

ABSTRACT

- brief summary of the entire document

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

- introduction to the entire document
- purpose and scope of the document
- description of the structure of the document

ARCHITECTURAL STYLE(S) USED (Alvin)

- how does the architecture support various features of your application
1. Client-Server Architecture: The devices communicate with a central server that manages data and authentication services
 - Real-Time Data Exchange: Client-server allows for seamless real-time communication between homeowner and service personnel's mobile devices and the server
 - Scalability: Client-server supports adding new features or increasing the number of users without worsening performance
 2. Microservices Architecture: The app uses different functions (location tracking, identity verification, user management) and they are handled by separate, loosely coupled services
 - Modular Development: Each feature is built as an independent service so updating each feature is easy without affecting the entire system
 - Platform Independence: Microservices can be deployed independently on both iOS and Android
 3. Event-Driven Architecture: The app uses event-driven architecture to respond to triggers (location updates, verification requests) in real-time
 - Real-Time Tracking: Service personnel's location is constantly updated and streamed to homeowner through event-driven mechanisms
 - Immediate Notifications: When the app detects significant events (ex. the service personnel arriving at location), notifications are pushed to homeowner and supervisor

ARCHITECTURAL MODEL (Mageto, Abdullah)

- use packages stereotyped as subsystems <<subsystem>>
- no classes in the architectural model

TECHNOLOGY, SOFTWARE, AND HARDWARE USED (Danya)

- describe the technology used for implementing this project
- list all software and hardware required to support the technology
- explain the communication between application server and database server

RATIONALE FOR YOUR ARCHITECTURAL STYLE AND MODEL (Omar)

TRACEABILITY FROM REQUIREMENTS TO ARCHITECTURE (Reya)

- provide a mapping between requirements and architecture
- clearly describe how each requirement in the *Requirements Documentation* is captured in the architecture

EVIDENCE THE DOCUMENT HAS BEEN PLACED UNDER CONFIGURATION MANAGEMENT

ENGINEERING STANDARDS AND MULTIPLE CONSTRAINTS

- students should work with their project sponsor(s) to identify all the standards and constraints that should be applied for preparing this document

ADDITIONAL REFERENCES

- include other related references that are not included the section above