POLITECNICO
MILANO 1863

Software Engineering 2
Design Document

Work team:
Paolo Romeo, Andrea Scotti, Francesco Staccone

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Table of contents

1. Introduction

1.1. *Purpose*

This document is thought to be an overview of the TrackMe application, in which is explained how to satisfy the several project requirements stated in the RASD. This document is principally intended for the developers and the testers, with the purpose of providing a functional description of the main architectural components, their interfaces and their interactions, along with the design patterns.

1.2. *Scope*

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TrackMe is structured in a multi-tier architecture. More specifically, the Business logic layer has the task of taking charge of the incoming requests/data, computing checks, and interacting with external third-party services through the use of interfaces. This layer is connected with the Data layer, in which are stored all the Users data (credentials, health data). The Presentation layer is build through the thin (?) Client paradigm in which the client needs to perform close to no computation, allowing a more portable system.

1.3. *Definitions, acronyms, abbreviations*

1.3.1. Definitions

- Client: A client is a piece of computer hardware or software that accesses a service made available by a server;
- Firewall: A network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules;
- Server: A computer program or a device that provides functionality for other programs or devices, called "clients".

1.3.2. Acronyms

- API: Application Program Interface;
- DBMS: Database Management System;
- DD: Design Document
- GUI: Graphical User Interface;
- HTTP: Hypet Text Transfer Protocol;
- MVC: Model View Controller pattern;
- OS: Operating System;
- RASD: Requirements Analysis and Specifications Document;
- REST: REpresentational State Transfer;

1.3.3. Abbreviations

- Gn: n-goal in the RASD;
- Rn: n-functional requirement in the RASD;

1.4. *Revision history*

1.5. *Reference documents*

- RASD document;
- Mandatory project assignment;

1.6. *Document structure*

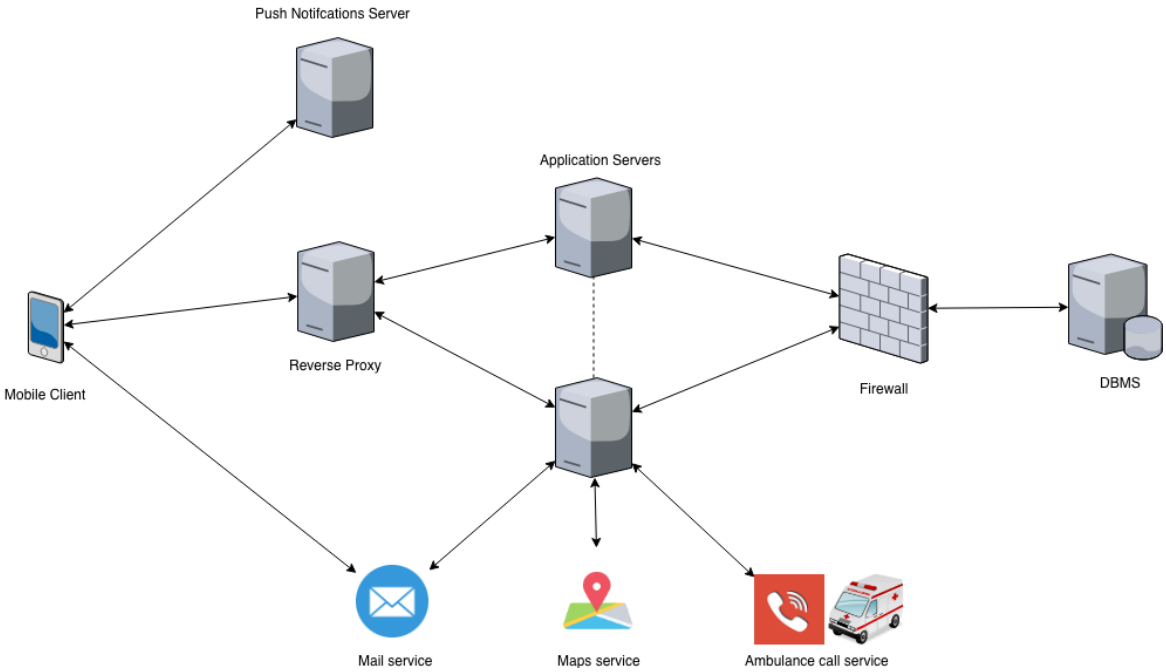
The following document is organised in this way:

- Architectural Design: this section shows the main components of the system and the connections among them. It will also focus on design choices, styles and patterns.

- User Interface Design: this section includes an improvement of the user interface given in the RASD document. It will be described through the use of UX modeling.
- Requirements Traceability: this section shows how the requirements in the RASD are mapped to the design components presented in the DD;
- Implementation, Integration and Test plan: this section shows the order in which the implementation and the integration of the subcomponents will occur and how the integration will be tested.

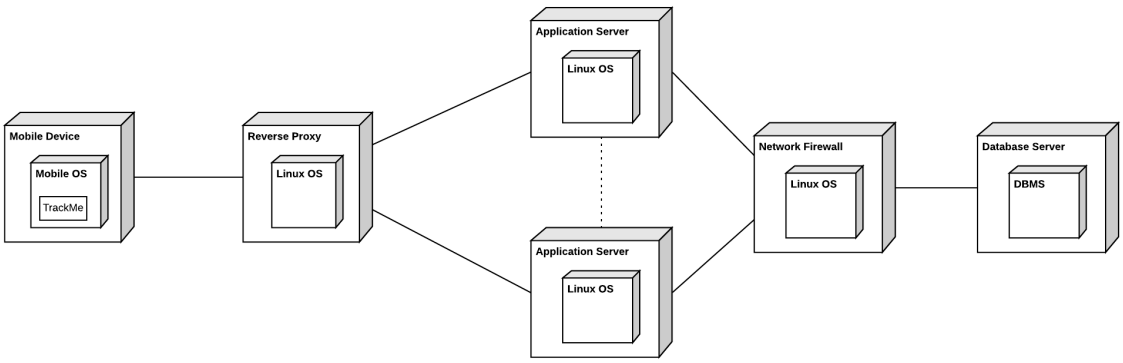
2. Architectural design

2.1. *Overview: high-level components and their interaction*



2.2. *Component view*

2.3. *Deployment view*



2.4. *Runtime view*

2.5. *Component interfaces*

2.6. *Selected architectural styles and patterns*

3. **User interface design**
4. **Requirements traceability**
5. **Implementation, integration and test plan**
6. **Effort spent**
7. **References**