POLITECNICO DI MILANO

School of Industrial and Information Engineering

Computer Science and Engineering

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TRACKME DD
Design Document

Software Engineering 2 Project

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2.1 Overview

The TrackMe services are built on a client-server structure, this way the system is organized through abstraction levels. We chose to adopt a 3-tier architecture:

- **Presentation Tier**
  This layer makes the interaction possible between the user and the system. Here the user sees all the information provided by the system in a easily way to understand them.

- **Application Tier**
  This layer is managed almost totally by Data4Help service that is in charge of:

  - store data incoming from the external;
  - collect data information from database in order to execute Third parties' requests;
  - also generates data statistics on data collected;
  - send to third parties requested data.

  Moreover even AutomatedSOS has logic application in order to continuously monitor users' health status.

- **Data Tier**
  In this layer all the sensible users' data (location, health status) are stored into Databases and are retrieved by the application tier in order to do statistics and answer third parties' requests.

More specifically Data4Help manage the data and core logic sections while AutomatedSOS and Track4Run manage the presentation section. Actually, a small part of application tier is also present in AutomatedSOS, this is due to the fact that the Health Monitoring process requires to be executed as fast as possible.

2.2 Component View

2.3 Deployment View

The following Deployment Diagram captures the topology of the system's hardware. The SmartphoneApp and SmartWatchApp (Presentation Tier) communicate to the Application Server through RMI, while the WebBrowser communicates to the WebServer through HTTP protocol. The Application Server (Application Tier) communicates to the Database Server (Data Tier) through JDBC.

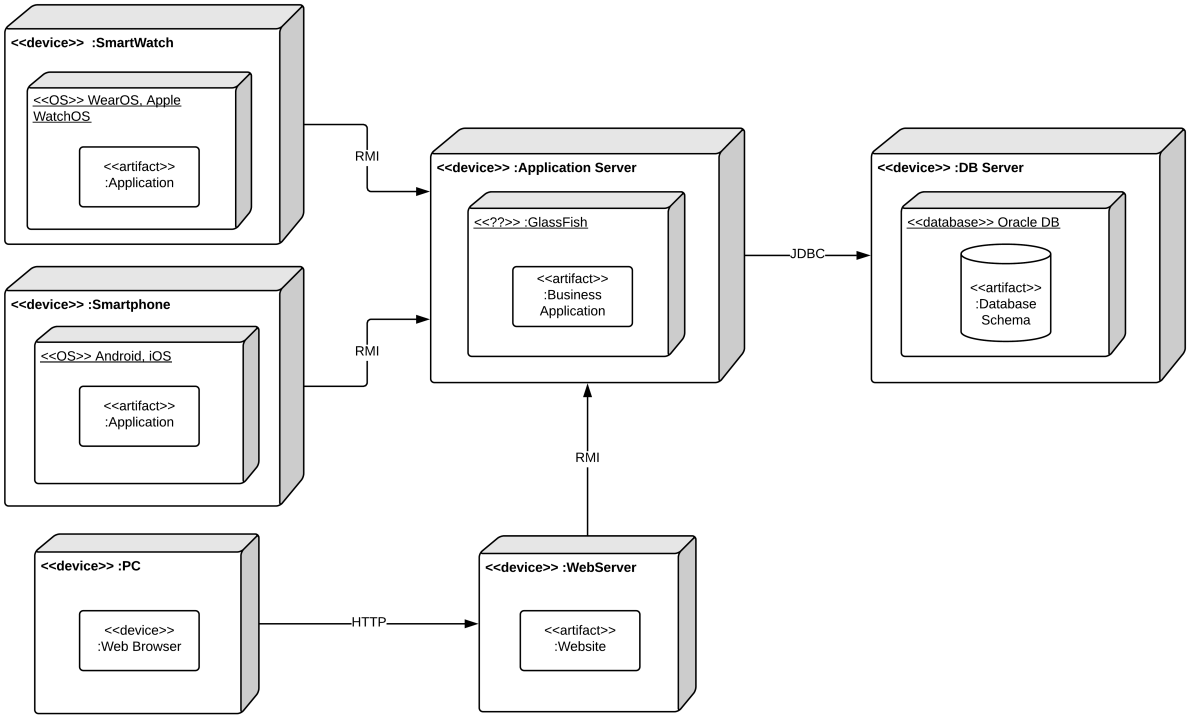

Figure 1: Deployment Diagram.

2.4 Runtime View

2.5 Component Interfaces

2.6 Selected Architectural Styles and Patterns

2.7 Other Design Decisions

3 User Interface Design

4 Requirements Traceability

5 Implementation, Integration and Test Plan

6 Effort Spent

In this section contains information about how much hours each group member spent in working at this document.

6.0.1 Luca Alessandrelli

Date	Task	Hours
23/11/18	Overview	1
19/10/18	Deployment View	3
20/10/18		
24/10/18		
24/10/18	Domain Assumptions	1
30/10/18	Text Assumptions	0.5
30/10/17	Domain Assumptions	0.5
30/10/18	State Chart	1.5
4/11/18	Goals	2
4/11/18	Text Assumptions	2
4/11/18	Domain Assumptions	2
5/11/18	State Chart	1.5
5/11/18	Use Case	4
6/11/18	Use Case	3
6/11/18	Use Case Diagram	3
7/11/18	Use Case	1.5
7/11/18	Use Case Diagram	1
8/11/18	Use Case	2
8/11/18	Use Case Diagrams	0.5
8/11/18	Scenarios	0.5
9/11/18	Scenarios	1
10/11/18	Document revision	3.5
11/11/18	Alloy	8
Overview		1
Deployment View		3
State Chart		3
Scenarios		1.5
Use Case		10.5
Use Case Diagram		4.5
Alloy		8
Document Revision		3.5
Total		47

6.0.2 Andrea Caraffa

Date	Task	Hours
18/10/18	Goals	2
19/10/18	Domain Assumptions	3
20/10/18	Text Assumptions	3
21/10/18	Introduction	2
27/10/18	Goals	2
30/10/18	Product Functions	3
1/11/17	Mockups	3
3/11/18	Mockups	3
4/11/18	Goals	2
4/11/18	Mockups	2
5/11/18	External requirements	2
5/11/18	Alloy	2
6/11/18	External requirements	3
9/11/18	Revisioning	2
9/11/18	Alloy	3
10/11/18	Revisioning	3
11/11/18	Revisioning	3
11/11/18	Alloy	3
Text Assumptions		3
Goals		6
Domain Assumptions		3
Introduction		2
Product functions		3
External requirements		5
Mockups		8
Alloy		8
Document Revisiong		8
Total		46

6.0.3 Andrea Bionda

/	Task	Hours
	Text Assumptions	3
	Goals and Introduction	6
	Domain Assumptions	3
	Functional requirements	13
	Class Diagram	5
	Sequence Diagram	5
	Performance requirements and Constraints	3
	Alloy	7
	Total	45

7 Reference Documents

- Specification Document "Mandatory Project Assignment AY 2018-2019".
- Slides "Structure of RASD".
- Slides "Use of Alloy in RE".
- Use Case Diagrams created with https://www.lucidchart.com
- Mockups created with https://www.fluidui.com