Test Plan Document

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Contents

Introduction

1.1 Revision History

First version of the ITPD document.

1.2 Purpose and Scope

This document aims to describe, specify and analyze the integration test strategy for *My Taxi Service*, in terms of which components/classes to integrate,the chosen typology of testing and a general schedule to do it, accordingly to what we enstablished in the previous assignments .

1.3 List of Definitions and Abbreviations

1.4 List of Reference Documents

- The project description.
- Our RASD document.
- Ou DD document.

Integration strategy

2.1 Entry criteria

In order to start an integration test, two constraints must be satisfied: the major classes must be covered by, at least, 60 percent of unit tests, while for the others a value of 30 percent is sufficient.

2.2 Elements to be integrated

In our document, "element" is used as synonym of "class"; the following list describes the classes that need to undergo an integration test, in order to be sure that our application will behave correctly.

Ridesmanager : it needs to be integrated with:

Ride, Sharedride : in order to store information about the actived rides

Taxiqueue : in order to take information of available taxis in case of taxi request.

Controller : in order to exchange information about user's(and also guest's) requests

Controller : it needs to be integrated with:

User : in order to create an ad-hoc Controller and to retrieve information about users

Servernetworkinterface : in order to communicate with the corresponding client side

Servernetworkinterface : it needs to be integrated with:

Clientmessage : in order to read client's messages

Servermessage : in order to send messages to the client

Activity : it needs to be integrated with

Action : in order to provides the allowed actions

Userinterface : in order to provide the set of items this class needs to show

Action : it needs to be integrated with the Clientnetworkinterface in order to send requests to the server

Userinterface : it needs to be integrated with the Clientnetworkinterface in order to show the right Activity according to the server message

Clientnetworkinterface : it needs to be integrated with:

Clientmessage : in order to send messages to the server

Servermessage : in order to read server's messages

2.3 Integration testing strategy

In this section we will explain how we planned the integration test in order to build, as soon as possible, a running application with few working features; this will allow us to promptly show our progress to the customer and also, in case of a delay in the development, to launch a working application, although with missing requirements. In order to reach our goal we decided to apply a *bottom-up* method during the integration test phase, and *top-down* method for the unit tests.
The first working version of our application will include major classes; in this milestone, there are no users, but only a guest that has the possibility to access all the already implemented features.
The second version will add the other users with related constraints, as explained in the previous documents (see RASD and Design Document).
From the second version onward, the application could be released, even if only few features are already implemented.
The next versions will include other features that allow us to reach all missing requirements.

2.4 Sequence of component/Function integration

2.4.1 Software integration sequence

2.4.2 Subsystem integration sequence

The classes are presented here in the ordered sequence in which they will be implemented, which is: 2.2 $\rightarrow$ 2.3 $\rightarrow$ 2.4 $\rightarrow$ 2.5 $\rightarrow$ 2.6

Note: the arrows here represent the ordering of the implementation, which may happen to partially match the logical structure of the class; however, those arrows do not aim to describe the inter-class relationships

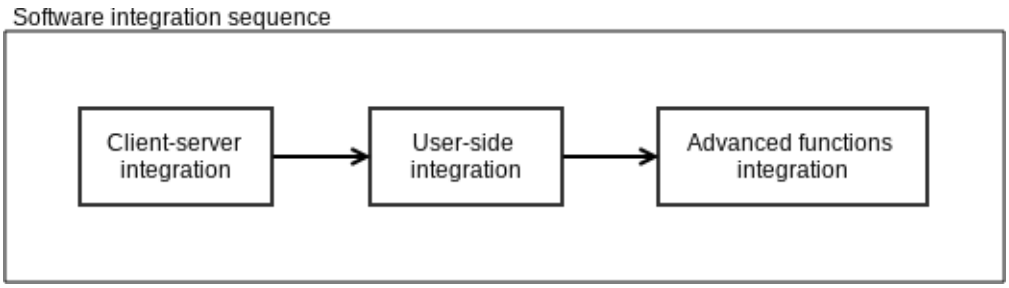

Figure 2.1: Software integration

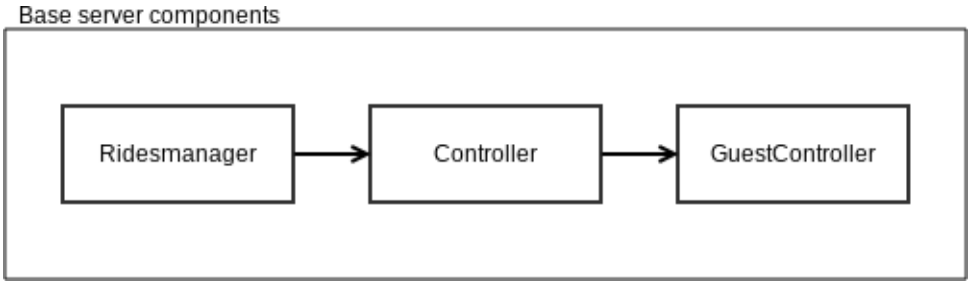

Figure 2.2: Base server components

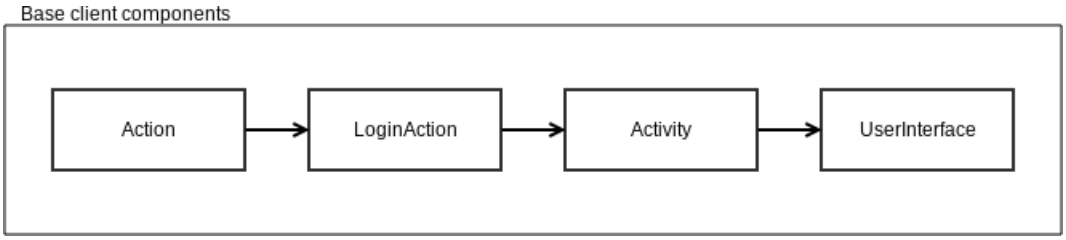

Figure 2.3: Base client components

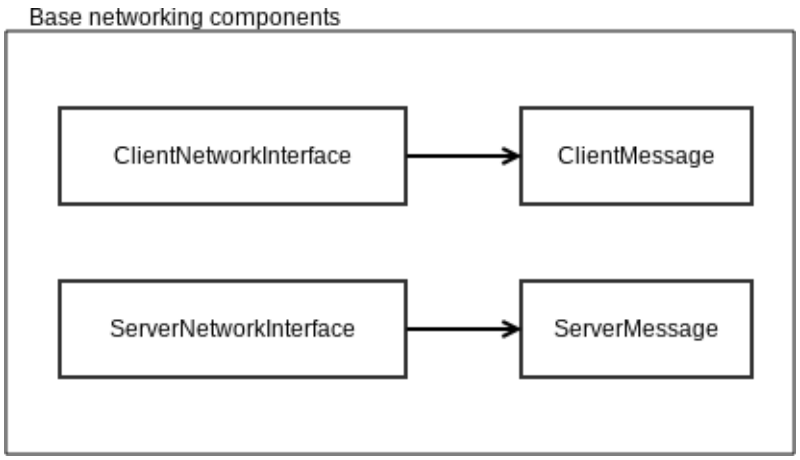

Figure 2.4: Base networking components

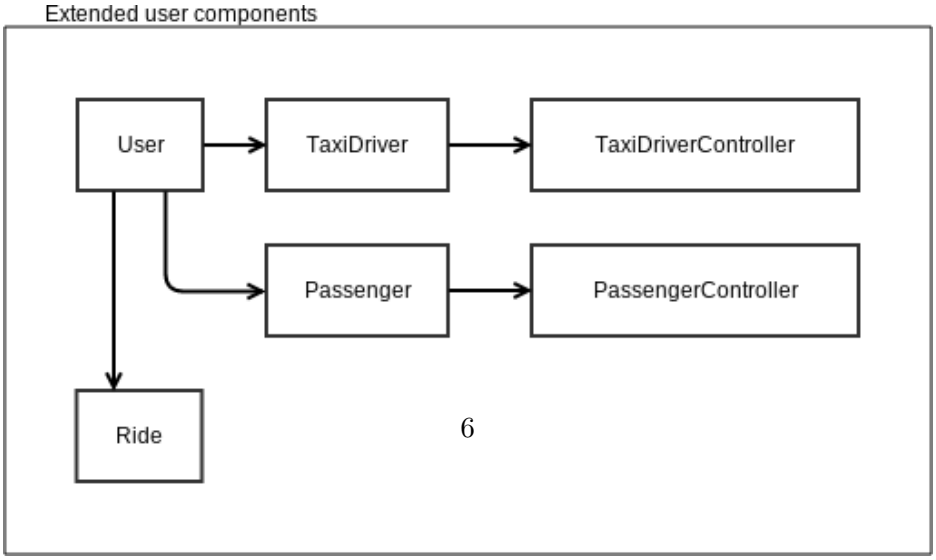

Figure 2.5: Extended client components

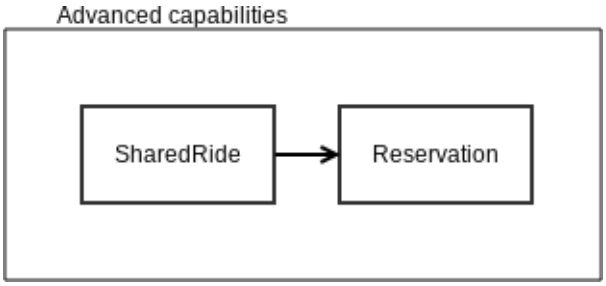

Figure 2.6: Advanced functions

Individual steps and Test description

3.1 Integration test case I-1

Test Case Identifier	I-1-T1
Test Item(s)	Ridesmanager → Controller
Input specification	Create the typical Ridesmanager input
Output specification	Check if the correct methods are called in the Controller
Environmental needs	Ridesmanager driver

3.2 Integration test case I-2

Test Case Identifier	I-2-T1
Test Item(s)	Controller → GuestController
Input specification	Create the typical Controller input
Output specification	Check if the correct methods are called in the GuestController
Environmental needs	I-1 succeeded

3.3 Integration test case I-3

Test Case Identifier	I-3-T1
Test Item(s)	Activity → Action, TaxirequestAction, TaxiresponseAction
Input specification	Create a generic Activity and the Home
Output specification	Check that the Activities does create the correct Actions
Environmental needs	An Activity driver

3.4 Integration test case I-4

Test Case Identifier	I-4-T1
Test Item(s)	ClientNetworkInterface → ClientMessage
Input specification	Invoke various types of network methods
Output specification	Check that the correct ClientMessage(s) are generated
Environmental needs	ClientNetworkInterface driver

3.5 Integration test case I-5

Test Case Identifier	I-5-T1
Test Item(s)	ServerNetworkInterface → ServerMessage
Input specification	Invoke various types of network methods
Output specification	Check that the correct ServerMessage(s) are generated
Environmental needs	ServerNetworkInterface driver

3.6 Integration test case I-6

Test Case Identifier	I-6-T1
Test Item(s)	User → Ride
Input specification	Add a new Ride to an User
Output specification	Check that the Ride is correctly added
Environmental needs	User driver

3.7 Integration test case I-7

Test Case Identifier	I-7-T1
Test Item(s)	Taxidriver → TaxidriversController
Input specification	Add a new Taxidriver to a TaxidriversController
Output specification	Check that the Taxidriver is correctly added
Environmental needs	TaxidriversController driver

3.8 Integration test case I-8

Test Case Identifier	I-8-T1
Test Item(s)	Passenger → PassengersController
Input specification	Add a new Passenger to a PassengersController
Output specification	Check that the Passenger is correctly added
Environmental needs	PassengersController driver

Tools and testing equipment required

Maven : As a platform to manage builds and dependancies

JUnit : For the implementation of unit tests, it's an obvious choice, given its integration with the major IDEs and the overall simplicity

Arquillian : For the integration testing phase, we have chosen this tool, since it easily integrates with Maven and JUnit, and offers speed and simplicity as its defining traits