Software Requirements Specification

For

Statistical application for tours and travels company

Version 1.0 approved

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Group

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Group	16-09-16	Initial Version	1.0

1. Introduction

1.1 Purpose

The product that we have here is an app that provides the user the statistics his/her tours and travel company.
The **vision** of this product is to make an app that will suffice the need of the owner. This application is specificly made for the client to manage and keep a track of progress .This app will help him to keep track of his company's performance in agiven time duration and also sort this data according to various categories like gender and country. Also,we are providing the user to view all these results in a graphical representation in thee form of bar or pie chart for better visual representation. There is another functionality of the app that at the end of a year, the app will automatically send a mail to the agent under who hasthe most bookings in that year.The user will be notified prior sending the mail. This app also has functionality to import flight and train schedules into the app for user convenience ,app will standardize them into a single spreadsheet file.
The **scope** of the project covers the development of user interface for the app and maintain a database for all the booking related information, also the client can import the schedule of flights/trains.

1.2 Document Conventions

In this document Bold-faced text has been used to describe the different sections and different sub sections within section. Highlighting is done to point out important terms within the subtopic.

1.3 Intended Audience and Reading Suggestions

The document is intended for the development team, project manager, marketing staff, testers and documentation writers. Our group, team providing the application and the client for whom the product is made can read the documentation to understand the project and its requirements. The developer and group need to be familiar with the Software requirement specification.

Other involvement required:

Overall Description – In our case, there is no specific need for marketing team as the product is being custom made for a single individual who owns the business, according to his requirements.

System features – The system features should be understood by the testers so that they can test thoroughly and give proper feedback to the developers. In our case the group is the developer as well as the tester.

External Interface Requirements – Since it is an android application so the application developers should know the requirements of the client to build upon. The interface of the application should be user friendly. The group should understand external interface requirements to explain the client about the features of the application and how his requirements has been the top most priority for the group.

Nonfunctional and Functional Requirements – Software development.

1.4 Product Scope

The app for the statistics of a Tours and Travel Company which has features exclusively as required by our client. The purpose of this application is for the client to have access to the statistics of his business on the go. As it is a smartphone application, this data will be accessible to him, whenever and wherever he requires it. The auto email feature also saves his time as he doesn't have to check manually check for that particular agent and doesn't have to type the email. He will also have access to all the flight and train schedules at his fingertips. Refer to the project scope paragraph within Purpose sub section for more information.

1.5 References

Not yet Decided.

2. Overall Description

2.1 Product Perspective

This app is new product which will act as a secondary system for the client. The client can access all the data on his app which ifaster and easier. As it will be installed on his smartphone, he will be able to access this data whenever and wherever he requires. For more information, refer to **2.2 Product Features**.

2.2 Product Functions

The key features of the product are-

1. User will be able to select a duration of time and a category to sort by.
2. The user will then be shown the number of bookings made every year within the selected range (according to the category selected).
3. User will be able to see all the statistics in form of Graphs and Charts for easy and quick understanding.
4. User can also import flight schedules of airlines and the application will standardize them into a single excel file.
5. At the end of every year, an email will be sent automatically (user will be asked for confirmation) to the agent who has the most number of bookings.

2.3 User Classes and Characteristics

In this case, there will be only one user for this product i.e. the owner of the firm. This app is made specifically accordint to Owner's requirement.

2.4 Operating Environment

This application will run on Android 5.0 (Lollipop) and above. The hardware required for this app is which can run Android 5.0 .

2.5 Design and Implementation Constraints

1. Android APIs do not natively support connecting to MySQL Databases. To do this, we would have to create a PHP script that connects to the database and returns data in JSON format. The application will then connect to the domain that hosts the PHP script, and process the returned JSON data.
2. Android APIs cannot parse spreadsheet files either. To do this, we would have to use the Apache POI library- which is a Java library that provides an API to manipulate different Microsoft Office file formats. This library works only on Android SDK 21 and above so we had to set the minimum Android version to 5.0 Lollipop.
3. We would also need to use the Java-Mail API for automatically sending emails in the background.
4. The file picker that can be implemented using the default Android APIs doesn't allow the users to select multiple files at a time so we have to implement a custom file picker for our application.

2.6 User Documentation

There will be a help section within the application for the user.

2.7 Assumptions and Dependencies

It is assumed that the user has an Android device running Android 5.0 (Lollipop) or better.
Dependencies are all listed in **2.5 Design and Implementation constraints**.

3. External Interface Requirements

3.1 User Interfaces

On opening the application, the user will be presented with a screen where he will be able to input the year range and the category to sort records by. On clicking the show button, the user will be presented with all the requested data. It can also be shown in the form of a bar graph/pie chart, based on the user's choice.
On the main screen, there will also be an option to upload train/flight schedules of multiple airline companies/trains and standardize them into a single spreadsheet file.
There will also be a help section that will act as a guide to the user whenever required.
A settings menu will also be implemented where the user can enter his email address and password to enable the auto email feature. Other settings options haven't been decided yet.

3.2 Hardware Interfaces

None

3.3 Software Interfaces

The application will run only on the Android operating system v5.0 (Lollipop) and above. The application connects to a remote MySQL database and temporarily stores the information requested by the user, in a local SQLite database.
For more information, refer to **2.5 Design and Implementation Constraints**

3.4 Communications Interfaces

Most of the features of the application will work offline so no communication interfaces are required. The only area where it is required is when connect to the database. Since Android cannot connect to databases natively, it will use the HTTP/HTTPS protocol to connect to the domain that contains the PHP script, which connects to the database and returns data in JSON format.

4. System Features

The system comprises of a client/server architecture. For the major services provided by this product, refer to **2.2 Product Functions**. The following subsections contain the functional requirements for the system feature.

4.1 Information regarding flights

4.1.1 Description and Priority
The user imports the flight schedules of different airlines which is in excel format. For each airline, the data is sorted in a different manner. The application will standardize all this data into a single excel file. It has medium priority.

4.1.2 Stimulus/Response Sequences
* User uploads the flight data of different airlines
* All the data is arranged according to predefined format of the table.
* The application standardizes the data of all flights into one file
* User get the full table in excel format.

4.2 Statistics of the business

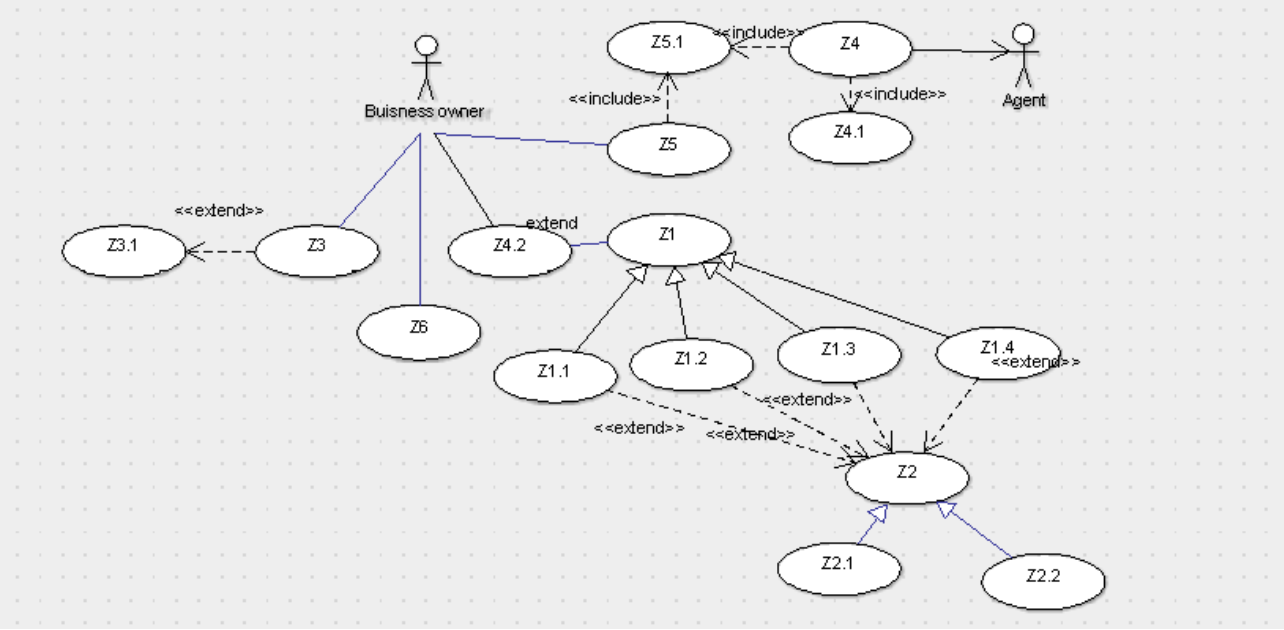
4.2.1 Description and Priority
The system allows the user to select the year range and a category to sort by age, country, gender, etc. The number of bookings made in each year within the selected range are presented to the user. It can either be shown in the form of raw data, or a graph for better visual representation. It has high priority.

4.2.2 Stimulus/Response Sequences
* Select the year range and category to sort by age, gender and country, etc.
* System help the user to analyze the statistics in form of raw data, graph and charts.
* At the end of every year, the system will send an email automatically (user will be asked for confirmation) to the agent under whom, the most number of bookings have been made.

Functional Requirement table:

ID	REQUIREMENT	DESCRIPTION
Z1	Search Category	System allows the user to select a year range and a category to sort by (like age, country and gender) and number of bookings made in each year within the selected range is shown.
Z1.1	Year	Select year range
Z1.2	Country	Sort by country
Z1.3	Gender	Sort by Gender
Z1.4	Age	Sort by age
Z2	Result	System displays the result in the form of raw data, graphs or charts for easy and quick understanding.
Z2.1	Raw data for result	Result information
Z2.2	Graph	Visual information
Z3	Import	User can import flight/train schedules of multiple airlines/trains.
Z3.1	Standardize	System will standardize the imported files into a single spreadsheet file.
Z4	Generation of email	At the end of every year, system will send an email automatically (user will be asked for confirmation) to the agent under whom, the most number of bookings have been made.
Z4.1	Email ids	Retrieval of email id
Z4.2	Database	Main tour database that contains all the business related information
Z5	Settings Menu	User can provide his email address and password to enable the auto email feature.
Z5.1	email id and password	User can enter his email id and password.
Z6	Help Section	Generic guide within the app for easy use of application

Use Case Diagram



5. Other Nonfunctional Requirements

Non Functional Requirements Table:

ID	***REQUIREMENTS***	***DESCRIPTION***
A1	Performance	The performance of the product will primarily depend on the hardware of the user's Android smartphone/tablet.
A2	Software Quality Attributes	Availability, Usability, Maintainability , Portability , Reliability
A3	Safety	None
A4	Security	Not yet decided

5.1 Performance Requirements (A1)

The performance of the product will primarily depend on the hardware of the user's Android smartphone/tablet. The performance of other features (such as the processing of spreadsheet files) depends on how powerful the processor of the smartphone/tablet is.
To fetch certain data, the product will require internet connectivity (Wi-Fi). The time it takes to perform this task will be dependent on the internet connection strength and bandwidth.

5.2 Safety Requirements (A3)

None.

5.3 Security Requirements (A4)

Not yet decided.

5.4 Software Quality Attributes (A2)

Availability
Internet access must be available when the remote database needs to be queried. For all other functions, internet access is not required and the application will function normally.

Usability
As the application performs relatively simple functions and is being tailor made to suit the needs of just one person, it will very easy to use. The UI will be made very user friendly and a help section will be provided within the application.

Maintainability
The source code will be documented thoroughly to enable easy maintenance.

Portability
The application is relatively simple and can be ported quite easily to other platforms provided that the external libraries used, are available for the platform being ported to.

Reliability
The system is designed to be reliable. It will fail only if the server hosting the database fails. The reliability also depends on the changes made in the future versions of Android OS.

6. Other Requirements

Not yet decided.

Appendix A: Glossary

Distributed Database: It implies that a single application should be able to operate transparently on data that is spread across a variety of different databases and connected by a communication network.

Client/Server system: It is a distributed system in which some sites are client sites and other are server sites, all data resides at the server sites and al applications execute at the client sites.

API: API (Application Programming Interface) is a set of functions and procedures which allow the creation of applications which access the features or data of an operating system, application, or other service.

JSON: JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. Apache POI: It provides pure Java libraries for reading and writing files in Microsoft Office formats, such as Word, PowerPoint and Excel.

Android SDK: It is a set of development tools used to develop applications for android platform.

Statistics: The practice or science of collecting and analyzing numerical data in large quantities.

Appendix B: Analysis Models

Appendix C: To Be Determined List

1. Other Requirements
2. User Interfaces – Settings options
3. Security Requirements