System Requirements Specification

****

Development Team:“Team Twix”

### Stephen Moore, Mariama Barr-Dallas, Michael Tang,

### Keith Chang, Justin Tavares, Christopher Pagan System Name: Tailored Travels Supervisor: Russ Cain Customer: Piyush Godbole

Team Twix’s Tailored Travels

System Requirements Specification

#### Table of Contents

Page

## 1. Introduction 4

* 1. Purpose of This Document
  2. References
  3. Purpose of the Product
  4. Product Scope

2. Functional Requirements 5

3. Non-Functional Requirements 13

3.1 Customer Constraints

3.2 External Interfaces

3.3 Other

4. Deliverables 14

5. Open Issues 15

## Appendix A 16

## Document Versioning Control

|  |  |  |
| --- | --- | --- |
| **Version Number** | **Date** | **Changes from Previous Version** |
| 1.0 |  | N/A |

## 1. Introduction

* 1. Purpose of This Document

Herein are detailed the requirements associated with the geo-plotting software requested by the customer. All functional requirements, defined as those that refer to a technical performance of the software, are detailed as use-cases in *section 2*. Non-functional requirements, being the remaining non-technical requirements, are detailed under a priority list in *section 3*. Intended for general readership by those involved with the development of this project, this document will also list all intended deliverables to the customer in addition to an ongoing issues list.

***1.2*** References

Use Case Template: *Basic Use Case Template***,** byAlistair Cockburn, http://members.aol.com/acockburn/papers/uctempla.htm, accessed 1/17/08.

* 1. Purpose of the Product

The software referred to by this document is being developed for the sole purpose of completing a class project at the University of Maryland, Baltimore County. The software shall be used to plot the shortest possible land route from the user’s chosen location to a destination selected from a stored list, while visiting every non-selected waypoint in that same list. This route is to be plotted on Google Earth as a series of straight lines connecting the various locations. All users of this software must log in to a personal account in order to access this functionality. If registered as an administrator, the user will be presented with controls to add, remove and edit the list of waypoints.

In our proposed solution to this task, Team Twix has so far outlined a Java application that will fulfill all later mentioned requirements. Using a graphical user interface, the application will give visual access to all controls and mechanisms of the app within the permissions of the current user. Upon selection and confirmation of the start and end waypoints, the user will be redirected to an instance of Google Earth. This instance will be summoned through the Java application after the computing of an ideal path has completed.

* 1. Product Scope

**Diagram is being edited on Git. Description pending.**

2. **Functional Requirements**

The following use cases outline each functional requirement of the system.

|  |  |  |
| --- | --- | --- |
| **Number** | *1.1* |  |
| Name | *Logs in* |  |
| **Summary** | *User shall be able to log into the system* |  |
| **Priority** | *5* |  |
| **Preconditions** | *Username and password need to be entered* |  |
| **Postconditions** | *The user has access to the system* |  |
| **Primary Actor(s)** | *User* |  |
| **Secondary Actor(s)** | *GUI* |  |
| **Trigger** | *User submits login information* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User enters username* |
|  | *Step #2* | User enters password |
|  | *Step #3* | *User clicks button to login* |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *Step 1 and Step 2 can be performed in opposite order* |
| **Open Issues** | *Issue #1* | *Login information must be secure* |

|  |  |  |
| --- | --- | --- |
| **Number** | *1.2* |  |
| Name | *Logs off* |  |
| **Summary** | *The user shall be able to logout of the system when finished with application* |  |
| **Priority** | *3* |  |
| **Preconditions** | *User clicks logout option* |  |
| **Postconditions** | *User is successfully outside of the system* |  |
| **Primary Actor(s)** | *User* |  |
| **Secondary Actor(s)** | *Application's GUI* |  |
| **Trigger** | *User selects logout option from GUI* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User clicks logout option* |
|  | *Step #2* | User is no longer in the system |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *N/A* |
| **Open Issues** | *Issue #1* | *User's information is secure* |
| **Number** | *2.1* |  |
| Name | *Adds locations* |  |
| **Summary** | *Administrators shall be able to add locations to the map* |  |
| **Priority** | *5* |  |
| **Preconditions** | *User must be admin* |  |
| **Postconditions** | *The location is added to the list* |  |
| **Primary Actor(s)** | *Administrators* |  |
| **Secondary Actor(s)** | *Map Waypoint* |  |
| **Trigger** | *Administrators choose to add a waypoint* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User clicks add button* |
|  | *Step #2* | User enters Waypoint info |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *N/A* |
| **Open Issues** |  |  |

|  |  |  |
| --- | --- | --- |
| **Number** | *2.2* |  |
| Name | *Deletes locations* |  |
| **Summary** | *Administrator shall be able to delete a location from the map* |  |
| **Priority** | *2* |  |
| **Preconditions** | *Location must be already added, user must be admin* |  |
| **Postconditions** | *Location is successfully deleted from the map* |  |
| **Primary Actor(s)** | *User* |  |
| **Secondary Actor(s)** | *Map location* |  |
| **Trigger** | *Admin selects “delete” option from GUI* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *Admin selects a map location* |
|  | *Step #2* | Admin selects delete option |
|  | *Step #3* | *Location is deleted from map* |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #* | *N/A* |
| **Open Issues** | *Issue #* | *N/A* |

|  |  |  |
| --- | --- | --- |
| **Number** | *2.3* |  |
| Name | *Edit location information* |  |
| **Summary** | *Admins shall be able to edit information for each location* |  |
| **Priority** | *1* |  |
| **Preconditions** | *Location must exist on map, user must be admin* |  |
| **Postconditions** | *Location info will be changed* |  |
| **Primary Actor(s)** | *User* |  |
| **Secondary Actor(s)** | *Map location* |  |
| **Trigger** | *Admin selects “edit” option from GUI* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User selects a map location* |
|  | *Step #2* | User selects edit option |
|  | *Step #3* | *User changes the information for the specified location* |
|  | Step 4 | Location information is saved |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *N/A* |
| **Open Issues** | *Issue #1* | *N/A* |

|  |  |  |
| --- | --- | --- |
| **Number** | *3.1* |  |
| Name | *Prompt locations* |  |
| **Summary** | *Upon login, users shall be prompted for locations on the map* |  |
| **Priority** | *3* |  |
| **Preconditions** | *Location must exist on map* |  |
| **Postconditions** | *None* |  |
| **Primary Actor(s)** | *User* |  |
| **Secondary Actor(s)** | *Map locations* |  |
| **Trigger** | *User loggs in* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User logs in to application* |
|  | *Step #2* | User is prompted for locations |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *N/A* |
| **Open Issues** | *Issue #1* | *N/A* |

|  |  |  |
| --- | --- | --- |
| **Number** | *4.1* |  |
| Name | *Find distance* |  |
| **Summary** | *The application shall be able to find the distance between two locations* |  |
| **Priority** | *3* |  |
| **Preconditions** | *Locations must exist on map* |  |
| **Postconditions** | *Shortest distance is displayed to user* |  |
| **Primary Actor(s)** | *User, Google Earth* |  |
| **Secondary Actor(s)** | *Map locations* |  |
| **Trigger** | *User selects “find distance” option from GUI* |  |
| **Main Scenario** | **Step** | **Action** |
|  | *Step #1* | *User selects a starting location* |
|  | *Step #2* | User selects a destination location |
|  | *Step #3* | *Distance between locations are displayed* |
| **Extensions** | **Step** | **Branching Action** |
|  | *Step #1* | *N/A* |
| **Open Issues** | *Issue #1* | *N/A* |

3. **Non-Functional Requirements**

*Decide on a standard format for the non-functional requirements (NFRs). Include a unique number for each NFR, a priority (1 = lowest, 5 = highest), and a clear, concise description. It is possible that your system has no NFRs. If this is the case, briefly state so.*

**3.1** Customer Constraints

*3.1.1* – P5 – All user interactions with the system shall be performed through a graphical user interface (GUI)

It is expected from the customer that the system will present users with an intuitive GUI in order to minimize the technical knowledge needed to execute any external function of the software.

**3.2** External Interfaces

*3.2.1* – P5 – The system shall communicate with Google Earth to display the calculated path.

It is required that upon computation of the shortest route between al waypoints that this route is drawn on an instance of Google Earth. This instance shall be summoned from within the delivered software. As such, KML output is required from the software in order to complete this communication.

**3.3** Other

No other NFRs are currently evident.

4. **Deliverables**

***(Spreadsheet ongoing on git)***

5. **Open Issues**

***(Spreadsheet ongoing on git)***

## *Appendix A - Team sign off, Customer acceptance*

Sign off Agreement Between Customer and Contractor

The customer’s signature below indicates that all content herein is of acceptable quality. If any changes are made to this document, the customer must review the content. The revision number of the signature below must match the version number of the document.

**Customer Signature Date Notes**

Piyush Godbole

Team Review Sign-off

Signing below indicates that each member has read, contributed to and agrees to the content above and the format of this document.

**Name Signature Date Notes**

Stephen Moore

Keith Cheng

Mariama Barr-Dallas

Michael Tang

Christopher Pagan

Justin Tavares

https://github.com/smoore-ms9/UMBC-CMSC\_345\_TWIX/blob/master/Documents/Technical Reports/TWIX\_SRS.docx