PRCS252 – Travel Management System Software:

Initial Planning Document

Overview:

This document is intended to provide a brief description of the travel management system that is to be created for the integrating project. The system will be for buses which will factor in a database to communicate information between mobile, website and desktop clients through an API.

Team Information:

1. **William Butler** – Team member, database developer and C# programmer
2. **Andrew Bellas** – Team member, cyber security, web developer, HCI and C#/Java programmer
3. **Goel Biju** – Team member, database developer and C#/Java programmer
4. **Vincent Castellani** – Team member, database developer and HCI

**•** All team members will contribute to various aspects of the project.

Technologies and Tools:

* **Oracle SQL Developer**; used to develop the database and all associated database objects: triggers, views, constraints.
* **.NET API**; will be used to transfer data to and from the database and clients, this middleware will be hosted on an Xserve server.
* **Java** (NetBeans); for development of the desktop application for staff.
* Android (Java); development of mobile application for customers.
* **HTML/CSS/JavaScript**; used to develop website for admin to manage the system.
* **GitHub**; repository for version control and project management through the Kanban project board.

Functional requirements

Customer (mobile) application:

* Customer will be able to register an account through the mobile application:
* Create booking (minimum age of the passenger must be 15 in order to make an independent booking):
* Pay for a booking through integrated payment system - PayPal
* View timetables for routes
* View information regarding a service or route.
* View history of prior journeys
* Customer can login to the mobile application to book new journeys/manage account.
* Customer can book a new journey from a prior journey
* Customer can view booked journeys which has booking information e.g. booking reference code.
* Customer can request account termination
* Customer can update account details.
* Customer’s mobile application should update based on new information from the system.

Driver (desktop) application:

* Notify bus service delays which will be updated on customer/admin timetables.
* Start a service for a valid route
* Complete a service for a valid route
* View current stock (buses)
* View route
* Log into the system – log in details are stored until the driver signs out; a session is created upon logging in.
* Accept booking reference number/ticket number in order to validate passenger’s right of travel (from a list of all bookings made for that journey).
* View bus service information: bus capacity, remaining seats, bookings made for the journey, locations to pick up booked passenger from.
* Bus drivers maybe operating on behalf of various companies which are all aggregated onto one system?
* Update journey information at the end of a journey, for the system to calculate appropriate information e.g. new average time for the bus route.

Admin application:

* Create records of what buses are in the depot and their status
* Update records of what buses are in the depot and their status
* Retrieve records of what buses are in the depot and their status
* Delete/archive what buses are in the depot and their status
* Create records of the journeys of the buses
* Update records of the journeys of buses
* Retrieve records of the journeys of the buses
* Delete/archive records of the journeys of the buses
* Create records of the starting and ending points of the bus journeys
* Update records of the starting and ending points of the bus journeys
* Retrieve records of the starting and ending points of the bus journeys
* Delete/archive records of the starting and ending points of the bus journeys
* Create records of the timetables of buses
* Update records of the timetables of buses
* Retrieve records of the timetables of the buses
* Delete/archive records of the timetables of the buses
* Deploy replacement services in the event of a bus breakdown and therefore assist passengers.

Application attributes:

* Mobile application (customer):
  + User information:
    - First name
    - Surname
    - Title
    - E-mail
    - Age – minimum age to create an account?
    - Password
    - Phone Number?
    - Address for location-based suggestions
  + Create booking:
    - Adding multiple users to a single booking?
    - Select a valid route by stating travelling from and travelling to
    - Starting stop
    - Ending stop
    - Day and time
    - Estimated journey time