**Luke Miller**

This contains the simulation code for the Park-A-Lot system. Each of these files was authored, tested and integrated by Luke Miller. Each of the classes is described in detail through the UML Class diagram and the README file within the root directory.

The simulation can be run by importing the compressed project into Eclipse. This file contains all of the appropriate files and libraries to run the simulation. The main class is within the Simulation.java file.

The purpose of the simulation is to provide means with which to demonstrate capabilities of an automated parking garage without access to a real garage. When the simulation begins, users are dynamically generated based upon a list of possible names. Each user is assigned unique personal information, given one vehicle and payment method. This information is also dynamically generated from a list of possible car makes, models and years.

An example output from this portion of the simulation:

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This information is stored as objects contained within the overall Garage object. Users will be different every time the simulation is run. Once each user is created as objects, the simulation uses the custom class “AccessWebsite.java” to automate the Park-A-Lot and create each user’s website account, and thus adding them to the databse. This same process is executed to add payment information and vehicles to the user’s website account and this the database.

After user initialization is complete, the simulation begins to generate random reservations for each of the users associated with the garage. For demonstration purposes the reservations were constrained to a 3 minute period. The late arrival grace period was set to 30 seconds and customers were randomly selected to arrive/leave late for a dynamically chosen period of time. All of these parameter can be adjust, creating a truly dynamic system that behaves differently each time it is run.

Based upon these parameters, users will pseudo-randomly arrive and leave the garage in real time, demonstrating interactions between every component of the Park-A-Lot system. The simulation was additionally designed in order to test the integration of all system components.