#### IT-161 Java 1

#### Test 3 Practical

**Due Date: See BlackBoard**

# Demonstrate that you understand how to use object-oriented programming concepts, display data from a table in a database, obtain input from the user, validate user input, calculate totals, and display output.

This project is worth 300 points. You will be graded as follows:

Database creation and connectivity - 50 points

OOP programming with classes and subclasses – 50 points

User input validation – 50 points

Program logic for calculating the rental output – 50 points

Proper JavaDoc comments above all class and method signatures – 20 points

JavaDoc creation in your project folder – 30 points

Screen captures of your test results (be sure to test all 3 vehicles) – 50 points

Create a java project VehicleRentalTest3## (where ## is your initials) for a vehicle rental calculator.

Create a database with table TVehicles to store the inventory fleet. Be sure to include your sql script in the Database folder of your project. Create vehicle records in your table (6 total – 2 of each vehicle type). Display your inventory at the start of your program. (50 points) **You only need to display the records from the table.**

Force the customer to enter name, phone (allow 2 formats), email address, vehicle pickup date, # of rental days, and allow the user to rent up to 3 vehicles at once. After the customer selects the vehicles to rent, output the details for each vehicle, price per vehicle \* number of days, and total rental price. (50 points)

Be sure to create IsValidPhoneNumber method to validate the phone number and IsValidEmailAddress to validate the email address (must begin with a character, have the @ sign, and have an extension of 2 to 6 characters). (50 points)

Create a vehicle class parent class. Then, create child classes for each vehicle type. Your program must have all the attributes and methods shown in the diagram in this document. (50 points)

You must include JavaDoc comments above all your method and class signatures. (20 points)

Create a JavaDoc for this project. (50 points)

Be sure to include a print screen of your test results. (50 points)

Be sure to submit your zip your entire project folder along with your test print screens.

Here are the requirements for this project:

**INPUTS**

The application must be able to collect the following “required” information for each vehicle rental calculator:

1. Customer Name
2. Phone Number (validate using regular expressions – create method IsValidPhoneNumber)
3. Email Address (validate using regular expressions – create method IsValidEmailAddress)
4. Number of Rental Days
5. Number of Vehicles to Rent
6. Select the type of Vehicle to Rent

**OUTPUTS**

1. For each transaction display the following:
   1. Customer Name
   2. Phone Number
   3. Email Address
   4. Type of Vehicle to Rent
   5. Information about the Vehicle such as how the vehicle drives, number of MPGs, etc.
   6. Total Rental based on Price \* Number of Days
   7. Total Rental Amount

**OOP OVERVIEW**

