CIS 36B – 5th Class / Lab Assignment – **10 Points-**
Student Name KachiLau Student ID 10819338 Point Total

Section 1: Define / Answer

Parameter:

Parameters are the variables that are listed as part of a method declaration. Each parameter must have a unique name and a defined data type.

Argument:

Arguments is a list of Parameters that can be passed to your Java Programm at start up.

In Java, what is the difference between an object and a class?

A **class** is a blueprint which you use to create **objects**. An object is an **instance** of a class

Explain the difference between Procedural Programming and Object Orientated programming-

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Procedural programming is a programming paradigm, derived from structured programming, based upon the concept of the procedure call.

Object-oriented programming (OOP) is a programming language model organized around "objects" rather than "actions" and data rather than logic.

Pg. 577, Java Programming *A comprehensive Introduction*

http://www.oracle.com/technetwork/java/javase/documentation/index-137868.html#format(Detailed explanation of Java documentation)

http://www.tutorialspoint.com/java/java_documentation.htm

http://www.liferay.com/community/wiki/-/wiki/Main/Javadoc+Guidelines#section-Javadoc+Guidelines-Class+Comments

Javadoc tags (Examples)

Tag	Description	Syntax
@author	Adds the author of a class.	@author name-text

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{@code}	Displays text in code font without interpreting the text as HTML markup or nested javadoc tags.	{@code text}
{@docRoot}	Represents the relative path to the generated document's root directory from any generated page	{@docRoot}
@deprecated	Adds a comment indicating that this API should no longer be used.	@deprecated deprecated-text
@exception	Adds a **Throws** subheading to the generated documentation, with the class-name and description text.	@exception class-name description
{@inheritDoc}	Inherits a comment from the **nearest** inheritable class or implementable interface	Inherits a comment from the immediate surperclass.
{@link}	Inserts an in-line link with visible text label that points to the documentation for the specified package, class or member name of a referenced class. T	{@link package.class#member label}
{@linkplain}	Identical to {@link}, except the link's label is displayed in plain text than code font.	{@linkplain package.class#member label}
@param	Adds a parameter with the specified parameter-name followed by the specified description to the "Parameters" section.	@param parameter-name description
@return	Adds a "Returns" section with the description text.	@return description
@see	Adds a "See Also" heading with a link or text entry that points to reference.	@see reference
@serial	Used in the doc comment for a default serializable field.	@serial field-description | include | exclude
@serialData	Documents the data written by the writeObject( ) or writeExternal( ) methods	@serialData data-description
@serialField	Documents an ObjectStreamField component.	@serialField field-name field-type field-description
@since	Adds a "Since" heading with the specified since-text to the generated documentation.	@since release
@throws	The @throws and @exception tags are synonyms.	@throws class-name description

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{@value}	When {@value} is used in the doc comment of a static field, it displays the value of that constant:	{@value package.class#field}
@version	Adds a "Version" subheading with the specified version-text to the generated docs when the -version option is used.	@version version-text

Task 1- Start to construct complete programs and an introduction to Object Orientated programming. Think about the overall functioning of the program. Use Assignment #12 Task1 as the bases for this exercise.

Create a **do-while** loop / with **switch case** statements that operate the program.

You will a multi-level menu operation using **do-while** implementation.

Present the user with a menu and options. Based upon the options selected by the user the program should operate correctly.

Create a computer program that will calculate the range for 3 different vehicles.

Use object orientated programming design to solve the problem.

Set-up the program so the user can manually input the values for passengers, fuel capacity, mpg for the 3 created vehicles.

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Create a **void or return** method inside the “programmer created “ class to calculate vehicle range.

range = fuel capacity * miles per gallon.

Each Vehicle type should have unique values for number of passengers, fuel capacity, and miles per gallon.

Attach Snipping photos as the program operates, including menu prompts, outputs etc.

Sample Output: // Create similar output for 3 Vehicle Types

On next page-

Change input values now that we are creating the same program multiple times.

```
*************************************
* Main Menu:                         *
*   Enter # to run program or Quit   *
*   1) Enter Fuel Capacity           *
*   2) Enter Miles Per Gallon        *
*   3) Calculate Range               *
*   4) Quit                          *
*************************************
1
You Selected Option 1:
```

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```
Enter fuel capacity in Integers Please

25

You entered: 25

2

You Selected Option 2:

Enter Miles Per Gallon Please

29

You entered: 29
```

```
************************************

* Main Menu:                        *

*    Enter # to run program or Quit  *

*    1) Enter Fuel Capacity          *

*    2) Enter Miles Per Gallon       *

*    3) Calculate Range              *

*    4) Quit                         *

************************************

1

You Selected Option 1:

Enter fuel capacity in Integers Please

15

You entered: 15
```

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```
************************************

* Main Menu:                    *

*    Enter # to run program or Quit  *

*    1) Enter Fuel Capacity          *

*    2) Enter Miles Per Gallon       *

*    3) Calculate Range              *

*    4) Quit                         *

************************************

2

You Selected Option 2:

Enter Miles Per Gallon Please

45

You entered: 45
```

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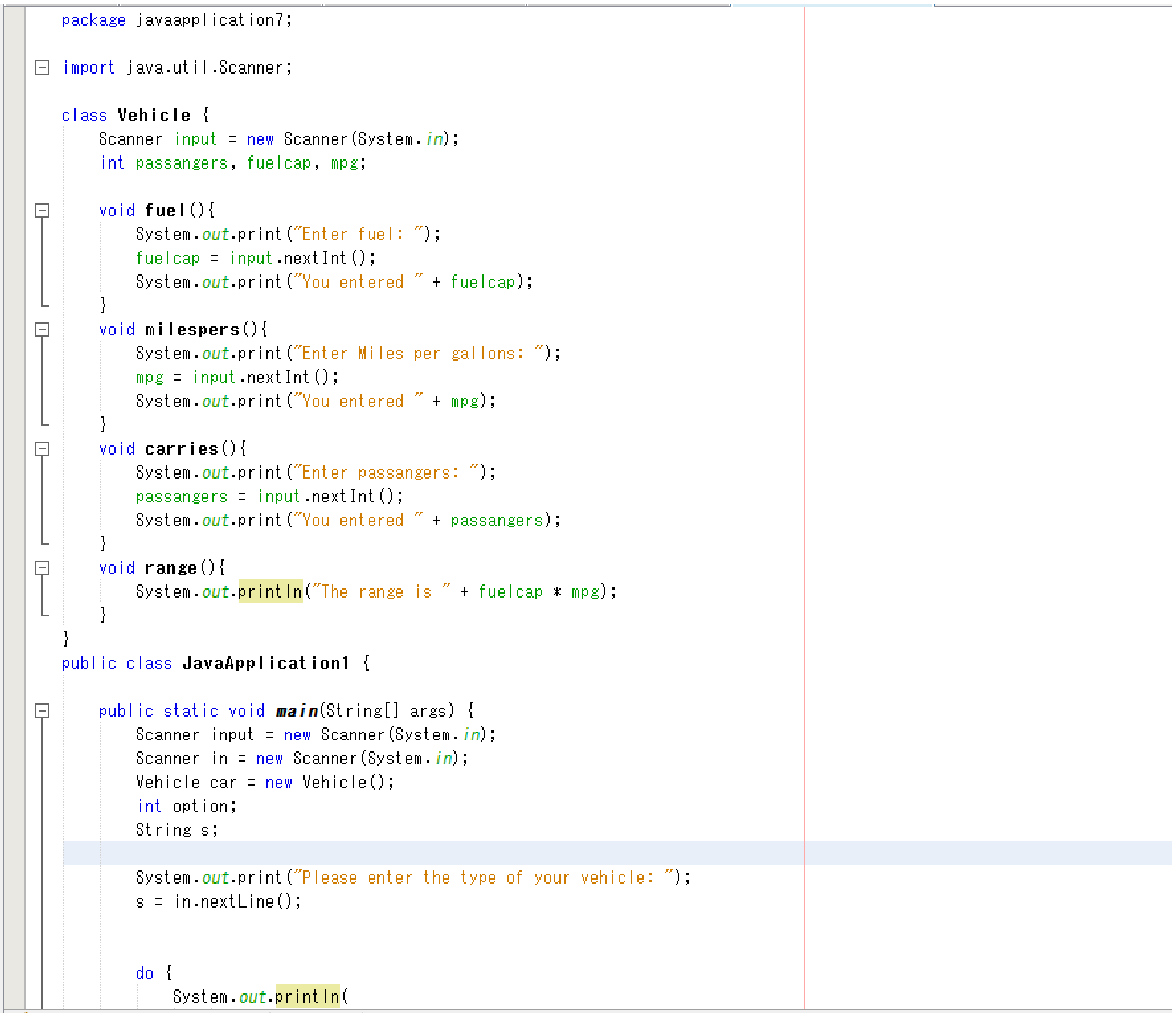

```
package javaapplication7;

import java.util.Scanner;

class Vehicle {
    Scanner input = new Scanner(System.in);
    int passangers, fuelcap, mpg;

    void fuel(){
        System.out.print("Enter fuel: ");
        fuelcap = input.nextInt();
        System.out.print("You entered " + fuelcap);
    }
    void milespers(){
        System.out.print("Enter Miles per gallons: ");
        mpg = input.nextInt();
        System.out.print("You entered " + mpg);
    }
    void carries(){
        System.out.print("Enter passangers: ");
        passangers = input.nextInt();
        System.out.print("You entered " + passangers);
    }
    void range(){
        System.out.println("The range is " + fuelcap * mpg);
    }
}
public class JavaApplication1 {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        Scanner in = new Scanner(System.in);
        Vehicle car = new Vehicle();
        int option;
        String s;

        System.out.print("Please enter the type of your vehicle: ");
        s = in.nextLine();


        do {
            System.out.println(
```

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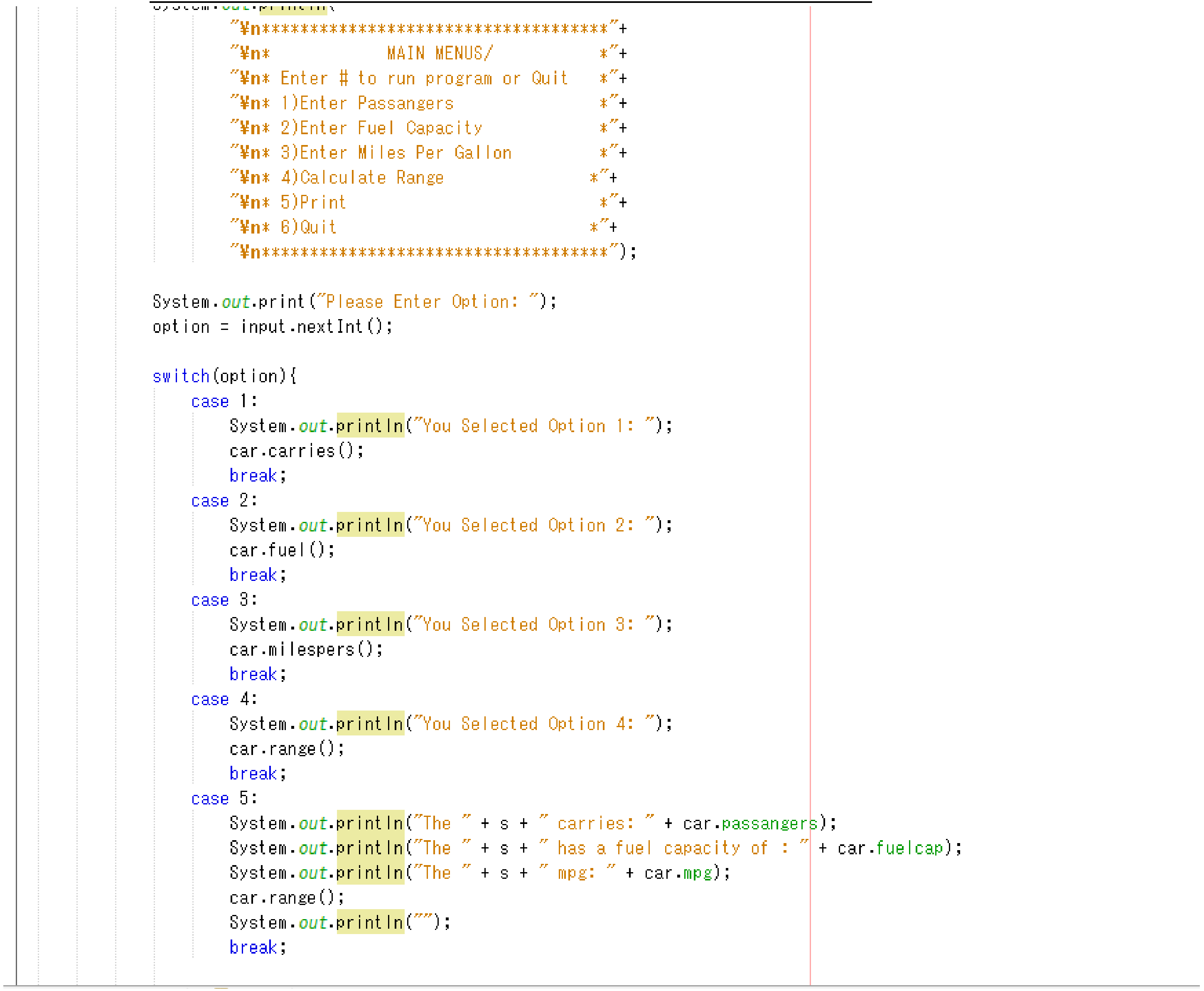

```
System.out.println(
        "¥n***********************************"+
        "¥n*            MAIN MENUS/          *"+
        "¥n* Enter # to run program or Quit  *"+
        "¥n* 1)Enter Passangers              *"+
        "¥n* 2)Enter Fuel Capacity           *"+
        "¥n* 3)Enter Miles Per Gallon        *"+
        "¥n* 4)Calculate Range              *"+
        "¥n* 5)Print                         *"+
        "¥n* 6)Quit                         *"+
        "¥n***********************************");

System.out.print("Please Enter Option: ");
option = input.nextInt();

switch(option){
    case 1:
        System.out.println("You Selected Option 1: ");
        car.carries();
        break;
    case 2:
        System.out.println("You Selected Option 2: ");
        car.fuel();
        break;
    case 3:
        System.out.println("You Selected Option 3: ");
        car.milespers();
        break;
    case 4:
        System.out.println("You Selected Option 4: ");
        car.range();
        break;
    case 5:
        System.out.println("The " + s + " carries: " + car.passangers);
        System.out.println("The " + s + " has a fuel capacity of : " + car.fuelcap);
        System.out.println("The " + s + " mpg: " + car.mpg);
        car.range();
        System.out.println("");
        break;
```

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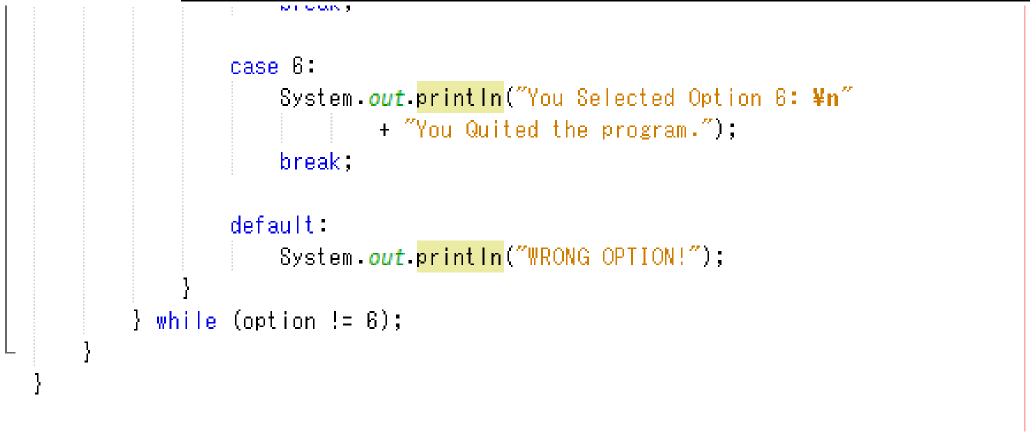

```
                    break;

                case 6:
                    System.out.println("You Selected Option 6: ¥n"
                            + "You Quited the program.");
                    break;

                default:
                    System.out.println("WRONG OPTION!");
            }
        } while (option != 6);
    }
}
```

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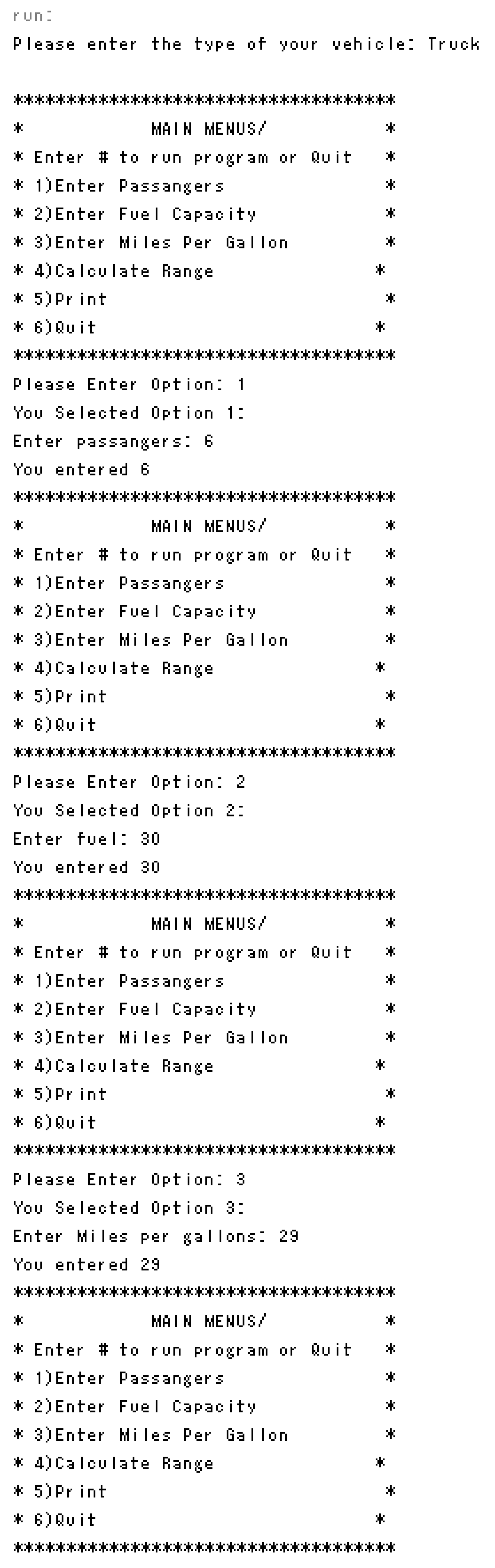

```
run:
Please enter the type of your vehicle: Truck

************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 1
You Selected Option 1:
Enter passangers: 6
You entered 6
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 2
You Selected Option 2:
Enter fuel: 30
You entered 30
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 3
You Selected Option 3:
Enter Miles per gallons: 29
You entered 29
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
```

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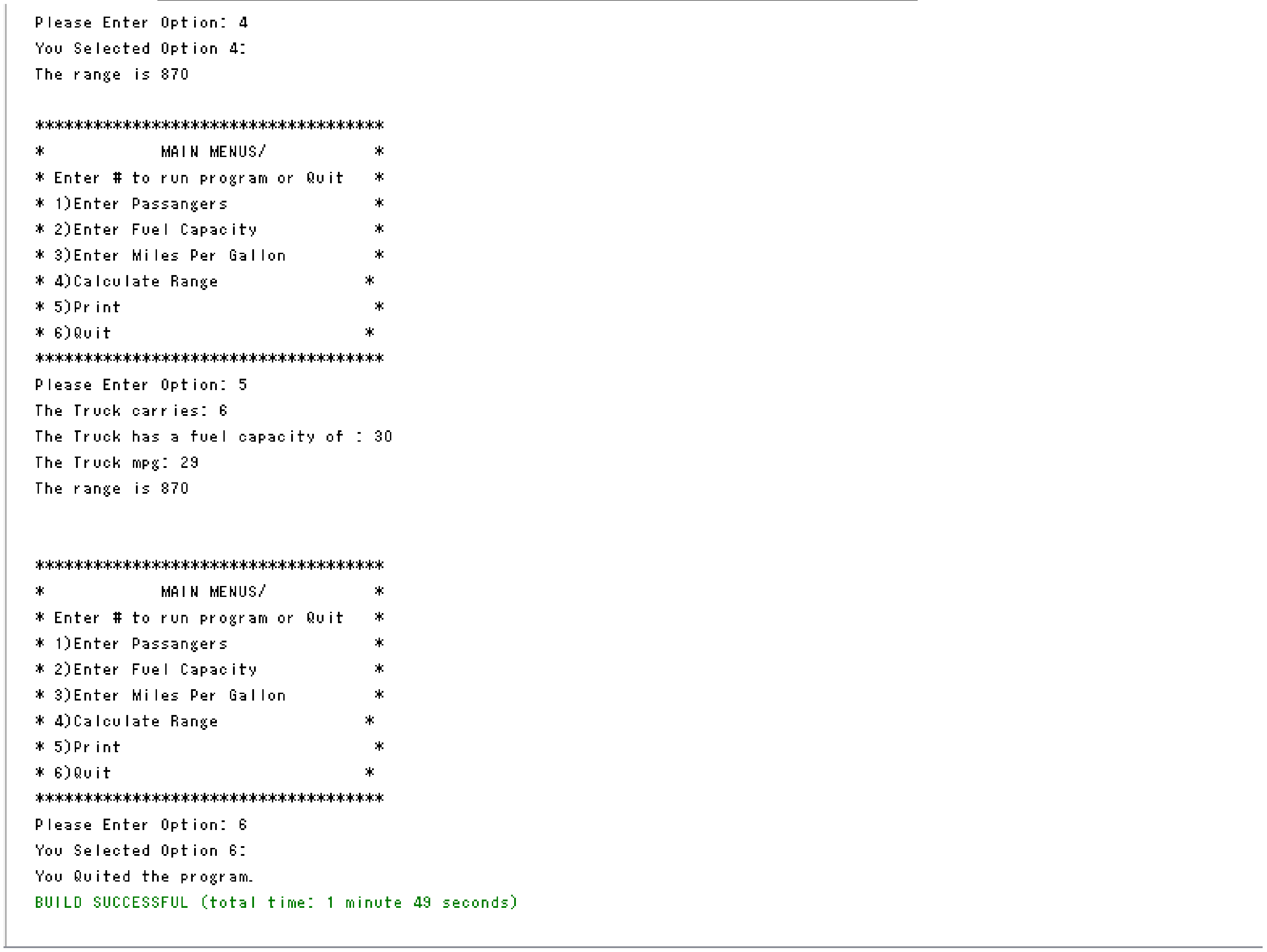

```
Please Enter Option: 4
You Selected Option 4:
The range is 870

************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 5
The Truck carries: 6
The Truck has a fuel capacity of : 30
The Truck mpg: 29
The range is 870


************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 6
You Selected Option 6:
You Quited the program.
BUILD SUCCESSFUL (total time: 1 minute 49 seconds)
```

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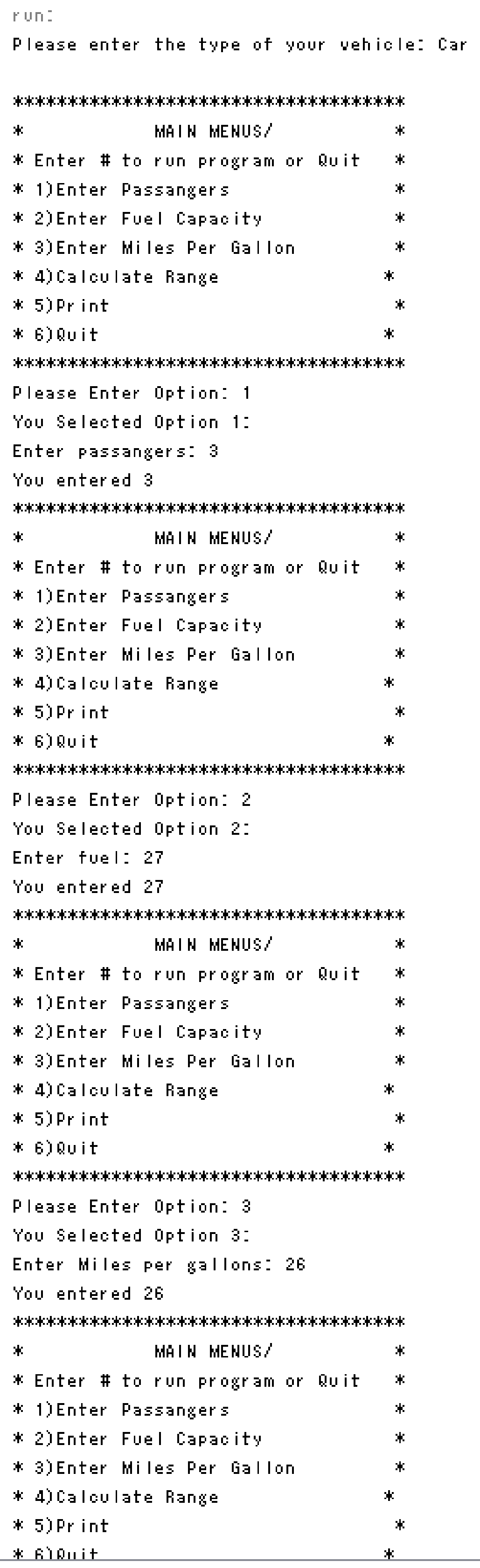

```
run:
Please enter the type of your vehicle: Car

************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 1
You Selected Option 1:
Enter passangers: 3
You entered 3
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 2
You Selected Option 2:
Enter fuel: 27
You entered 27
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 3
You Selected Option 3:
Enter Miles per gallons: 26
You entered 26
************************************
*            MAIN MENUS/           *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
```

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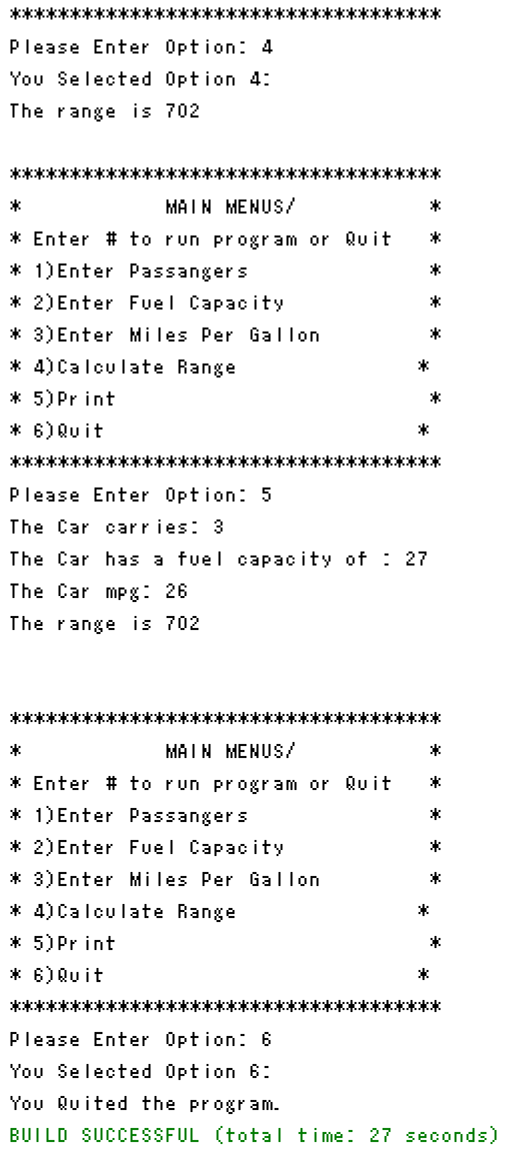

```
************************************
Please Enter Option: 4
You Selected Option 4:
The range is 702

************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 5
The Car carries: 3
The Car has a fuel capacity of : 27
The Car mpg: 26
The range is 702


************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 6
You Selected Option 6:
You Quited the program.
BUILD SUCCESSFUL (total time: 27 seconds)
```

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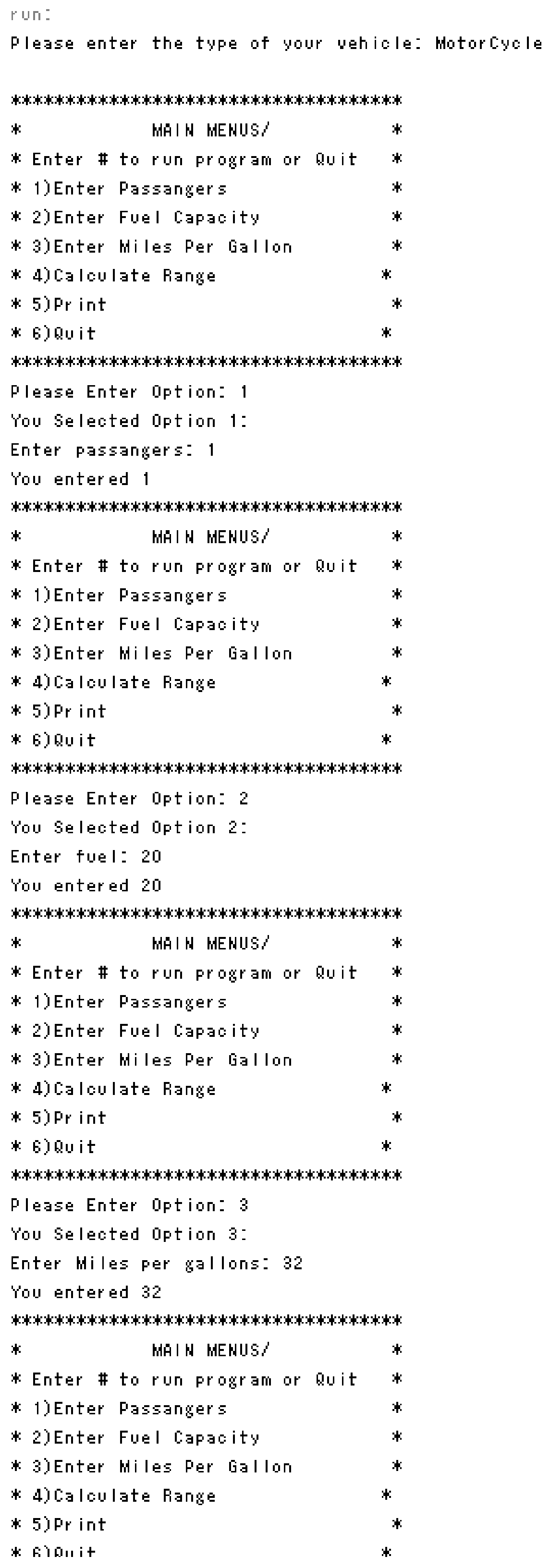

```
run:
Please enter the type of your vehicle: MotorCycle

************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 1
You Selected Option 1:
Enter passangers: 1
You entered 1
************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 2
You Selected Option 2:
Enter fuel: 20
You entered 20
************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
************************************
Please Enter Option: 3
You Selected Option 3:
Enter Miles per gallons: 32
You entered 32
************************************
*           MAIN MENUS/            *
* Enter # to run program or Quit   *
* 1)Enter Passangers               *
* 2)Enter Fuel Capacity            *
* 3)Enter Miles Per Gallon         *
* 4)Calculate Range               *
* 5)Print                          *
* 6)Quit                          *
```

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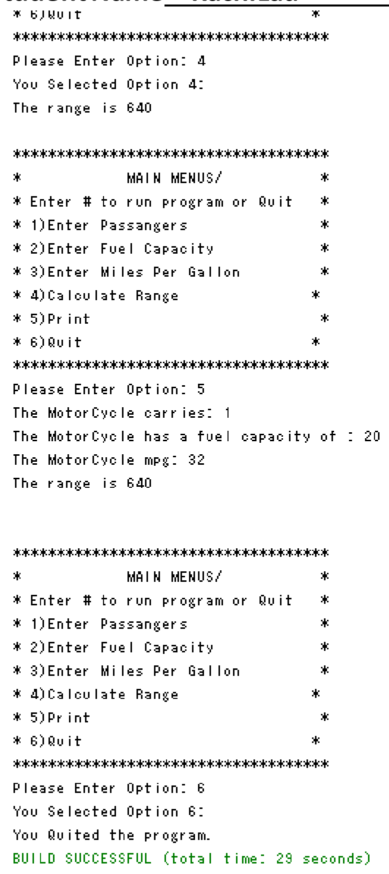

```
* 6)Quit                          *
************************************
Please Enter Option: 4
You Selected Option 4:
The range is 640

************************************
*             MAIN MENUS/           *
* Enter # to run program or Quit    *
* 1)Enter Passangers                *
* 2)Enter Fuel Capacity             *
* 3)Enter Miles Per Gallon          *
* 4)Calculate Range                *
* 5)Print                           *
* 6)Quit                           *
************************************
Please Enter Option: 5
The MotorCycle carries: 1
The MotorCycle has a fuel capacity of : 20
The MotorCycle mpg: 32
The range is 640


************************************
*             MAIN MENUS/           *
* Enter # to run program or Quit    *
* 1)Enter Passangers                *
* 2)Enter Fuel Capacity             *
* 3)Enter Miles Per Gallon          *
* 4)Calculate Range                *
* 5)Print                           *
* 6)Quit                           *
************************************
Please Enter Option: 6
You Selected Option 6:
You Quited the program.
BUILD SUCCESSFUL (total time: 29 seconds)
```