CSCI 1101 LAB NO.1
SOLUTIONS (Note: Solution outlines for only relevant exercises are given here).

```
//BMI class
public class BMI
{
        //attributes
        private String name;
        private int age;
        private double weight;
        private double height;

        public BMI(String n, int a, double w, double h)
        {
                name = n;
                age = a;
                weight = w;
                height = h;
        }
        public void setName(String n)
        {
                name = n;
        }
        public void setAge(int a)
        {
                age = a;
        }
        public void setWeight(double w)
        {
                weight = w;
        }
        public void setHeight(double h)
        {
                height = h;
        }
        public String getName()
        {
                return name;
        }
        public int getAge()
        {
                return age;
        }
        public double getWeight()
        {
                return weight;
        }
        public double getHeight()
        {
```

```
                return height;
        }
        public double calcBMI()
        {
                return 703*weight/(height*height);
        }
}



import java.util.Scanner;
public class BMIDemo
{
        public static void main(String[] args)
        {
                Scanner keyboard = new Scanner(System.in);
      System.out.print("Enter the name: ");
      String n = keyboard.nextLine();
      System.out.print("Enter the age: ");
      int a = keyboard.nextInt();
      System.out.print("Enter the weight (in pounds): ");
      double w = keyboard.nextDouble();
      System.out.print("Enter the height (in inches): ");
      double h = keyboard.nextDouble();

                BMI person = new BMI(n,a,w,h);
                if (a < 20)
                        System.out.println("The minimum age should be
20 in order to calculate the BMI");
                else
                {
                        double bmi = person.calcBMI();
                        System.out.println("The BMI of " + n + " is "
+ bmi);
                        if (bmi<18.5)
                                System.out.println("The BMI status is
Underweight");
                        else if (bmi<25.0)
                                System.out.println("The BMI status is
Normal");
                        else if (bmi<30.0)
                                System.out.println("The BMI status is
Overweight");
                        else
                                System.out.println("The BMI status is
Obese");
                }
        }
}
```

```
public class Car
{
	private double capacity;
	private double gasAmount;
	private double fuelCons;

	public Car(double c, double f)
	{
		capacity = c;
		gasAmount = 0.0;
		fuelCons = f;
	}
	public void setCapacity(double c)
	{
		capacity = c;
	}
	public void setGasAmount(double g)
	{
		gasAmount = g;
	}
	public void setFuelCons(double f)
	{
		fuelCons = f;
	}
	public double getCapacity()
	{
		return capacity;
	}
	public double getFuelCons()
	{
		return fuelCons;
	}
	public double getGasAmount()
	{
		return gasAmount;
	}
	public void fill(double g)
	{
		if (gasAmount+g<=capacity)
			gasAmount+=g;
		else
			System.out.println("Cannot fill. Exceeds
capacity");
	}
	public void drive(double d)
	{
```

```
                double gasRequired = d*fuelCons;
                if (gasRequired<=gasAmount)
                        gasAmount-=gasRequired;
                else
                        System.out.println("Cannot drive. Not enough
gas");
        }
}



import java.util.Scanner;
public class CarTester
{
        public static void main(String[] args)
        {
                Scanner keyboard = new Scanner(System.in);
                System.out.print("Enter the capacity (in liters): ");
                double c = keyboard.nextDouble();
                System.out.print("Enter the fuel consumption rate (in
lt/km): ");
                double f = keyboard.nextDouble();
                Car myCar = new Car(c,f);
                System.out.print("Enter the amount of gas to fill: ");
                double g = keyboard.nextDouble();
                System.out.print("Enter the distance to drive: ");
                double d = keyboard.nextDouble();
                myCar.fill(g);
                myCar.drive(d);
                System.out.println("\nGas remaining in tank: " +
myCar.getGasAmount());
        }
}
```