

**Question 1)**

Create a Java project called Lab5-Q1. Inside this project create a class named "Q1" with a main function. Also create a class named "Person". The "Person" class should have the following instance variables:

```
public String name;  
public double kilograms;  
public double heightMeters;  
public double BMI;
```

The "Person" class should have the following methods:

```
public void Greeting() - Prints to the standard output "Hello my name is 'name'"
```

```
public void calculateBMI() - Calculates BMI and prints to the standard output the person's BMI category.
```

BMI is calculated by:  $\text{kilograms} / (\text{heightMeters} * \text{heightMeters})$ ;

A BMI under 18.5 is under weight, a BMI under 25 is normal weight, a BMI under 30 is overweight, and a BMI equal to or over 30 is obese.

In the class "Q1" that has the main function, create 3 separate instances of the person class and assign each person a name, kilograms, and heightMeters. Then call the *Greeting()* and *calculateBMI()* method on each person.

**Ex)**

Standard output: Hello my name is Aubrey Graham  
Standard output: Aubrey Graham's BMI is 24.80  
Standard output: Aubrey Graham's risk category is Normal weight.

Standard output: Hello my name is CJ Johnson  
Standard output: CJ Johnson's BMI is 36.05  
Standard output: CJ Johnson's risk category is Obese.

Standard output: Hello my name is Rachel Green  
Standard output: Rachel Green's BMI is 15.25  
Standard output: Rachel Green's risk category is Underweight.

**Question 2)**

Create a Java project called Lab5-Q2. Inside this project create a class named "Q2" with a main function. Also create a class named "Student". The "Student" class should have the following instance variables:

```
public String name;  
public String zNumber;  
public String major;  
public double gpa;  
public int birthYear;  
public int credits;
```

The "Student" class should have the following methods:

*public void initialize(String studentName, String studentZNumber, String studentMajor, double studentGPA, int studentBirthYear, int studentCredits)* - This method assigns all the arguments to each instance variable.

*public void studentAge()* - Calculates the students age and prints it to the standard output.

*public void studentProfile()* - Prints to the standard output the students info.

*public void studentYear()* - Calculates and prints to the standard output if the student is a freshmen, sophomore, junior, or senior. A freshmen has under 30 credits, a sophomore has under 60 credits, a junior has under 90 credits, and a senior has 90 or more credits.

In the class "Q2" create two instances of the student class and call the *initialize()* method to fill in the students information. Then call the *studentAge()*, *studentProfile()*, and *studentYear()* methods on a student.

**Ex)**

Standard output: Corey is 22

Standard output: Name - Corey  
Standard output: Z Number - 42342342  
Standard output: Major - Computer Science  
Standard output: GPA - 4.0

Standard output: Corey is a junior

Standard output: Rachel is 26

Standard output: Name - Rachel  
Standard output: Z Number - 42532982  
Standard output: Major - History  
Standard output: GPA - 3.8

Standard output: Rachel is a senior

**Question 3)**

Create a Java project called Lab5-Q3. Inside this project create a class named "Q3" with a main function. Also create a class named "BankAccount". The "BankAccount" class should have the following instance variable:

```
public double accountBalance = 0;
```

The "BankAccount" class should have the following methods:

```
public void deposit() - Make a deposit from the account balance.
```

```
public void withdraw() - Withdraw an amount from the account balance.
```

```
public void viewBalance() - Prints to the standard output the account balance.
```

In the class "Q3" create an instance of the bank account class. Then have a "do while" loop that inside it has a switch statement with the following options.

- 1 - Deposit
- 2 - Withdrawal
- 3 - Check Account Balance
- 4 - Logout

The program should keep running until the user selects to logout.

**Ex)**

Standard output:

Please select an option

- 1 - Deposit
- 2 - Withdrawal
- 3 - Check Account Balance
- 4 - Logout

Standard input: 1

Standard output: How much would you like to deposit?

Standard input: 100

Standard output: The balance in the account is now \$100.0

Standard output:

Please select an option

- 1 - Deposit
- 2 - Withdrawal
- 3 - Check Account Balance
- 4 - Logout

Standard input: 2

Standard output: How much would you like to withdraw?

Standard input: 50

Standard output: The balance in the account is now \$50.0

Standard output:

Please select an option

1 - Deposit

2 - Withdrawal

3 - Check Account Balance

4 - Logout

Standard input: 3

Standard output: The current account balance is \$50.0

Standard output:

Please select an option

1 - Deposit

2 - Withdrawal

3 - Check Account Balance

4 - Logout

Standard input: 4

Standard output: Thank you! Goodbye