2021

JD 521 Formative Assessment 3

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CONTENTS

QUESTIONS:

QUESTION 1:

Design a program using Java NetBeans (Console application). With the following enum class:

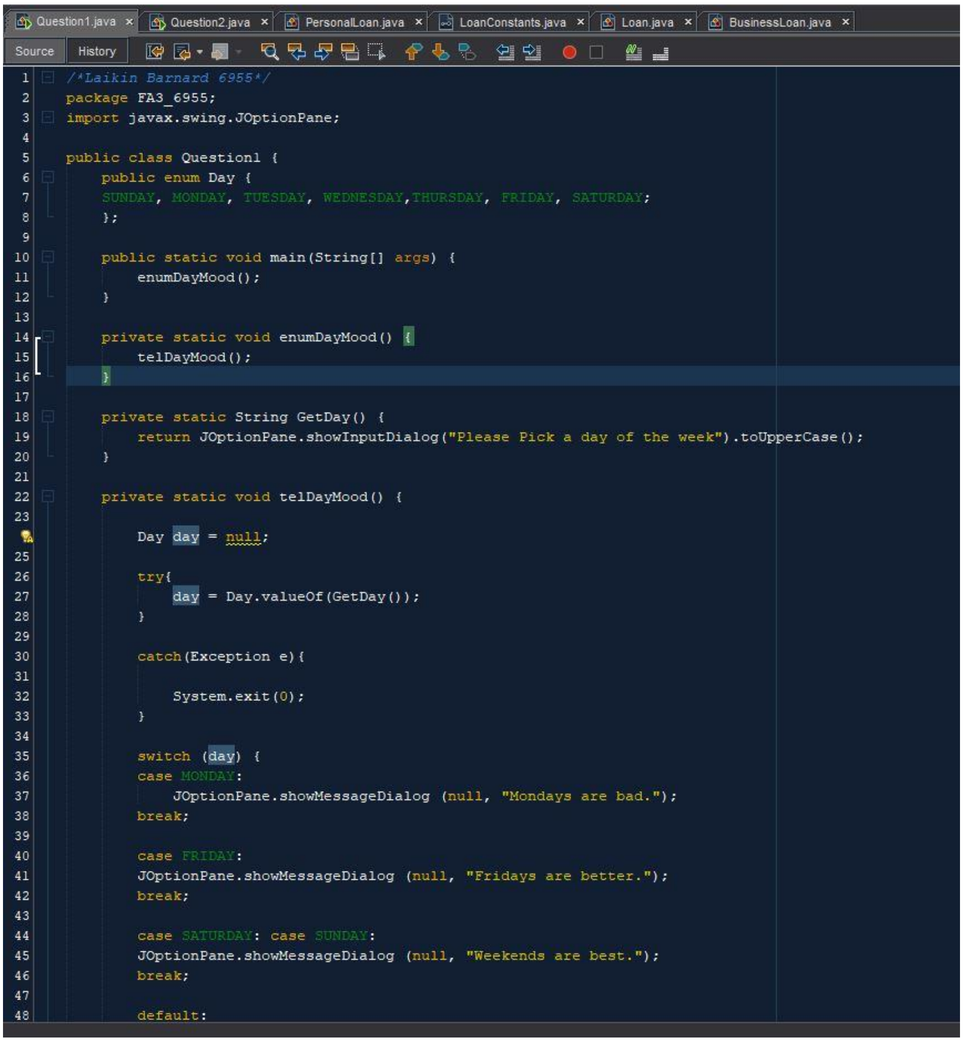
```
public enum Day {
SUNDAY, MONDAY, TUESDAY, WEDNESDAY,
THURSDAY, FRIDAY, SATURDAY
}
```

Create a second class called enumDayMood with a void method call telDayMood ().
This method contain a switch case as follows:

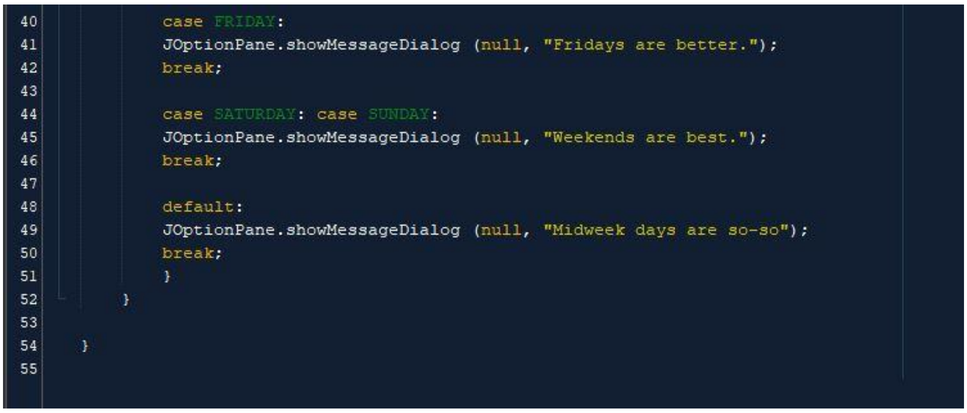
```
switch (day) {
case MONDAY:
JOptionPane.showMessageDialog (frame, "Mondays are bad.");
break;
case FRIDAY:
JOptionPane.showMessageDialog (frame, "Fridays are better.");
break;
case SATURDAY: case SUNDAY:
JOptionPane.showMessageDialog (frame, "Weekends are best.");
break;
default:
JOptionPane.showMessageDialog (frame, “Midweek days are so-so.");
break;
}
```

Create a method that will ask the user to enter a day of a week and the program should tell the mood of the day. If the user enter a wrong value the program should exit with 0.

QUESTION 1 CODE:



```java
/*Laikin Barnard 6955*/
package FA3_6955;
import javax.swing.JOptionPane;

public class Question1 {
    public enum Day {
    SUNDAY, MONDAY, TUESDAY, WEDNESDAY,THURSDAY, FRIDAY, SATURDAY;
    };

    public static void main(String[] args) {
        enumDayMood();
    }

    private static void enumDayMood() {
        telDayMood();
    }

    private static String GetDay() {
        return JOptionPane.showInputDialog("Please Pick a day of the week").toUpperCase();
    }

    private static void telDayMood() {

        Day day = null;

        try{
            day = Day.valueOf(GetDay());
        }

        catch(Exception e){

            System.exit(0);
        }

        switch (day) {
        case MONDAY:
            JOptionPane.showMessageDialog (null, "Mondays are bad.");
        break;

        case FRIDAY:
        JOptionPane.showMessageDialog (null, "Fridays are better.");
        break;

        case SATURDAY: case SUNDAY:
        JOptionPane.showMessageDialog (null, "Weekends are best.");
        break;

        default:
```



```java
        case FRIDAY:
        JOptionPane.showMessageDialog (null, "Fridays are better.");
        break;

        case SATURDAY: case SUNDAY:
        JOptionPane.showMessageDialog (null, "Weekends are best.");
        break;

        default:
        JOptionPane.showMessageDialog (null, "Midweek days are so-so");
        break;
        }
    }

}

```

QUESTION 2:

Sanchez Construction Loan Co. makes loans of up to R100,000 for construction projects. There are two categories of Loans—those to businesses and those to individual applicants. Write an application that tracks all new construction loans. The application also must calculate the total amount owed at the due date (original loan amount + loan fee). The application should include the following classes:

•• Loan—A public abstract class that implements the LoanConstants interface. A Loan includes a loan number, customer last name, amount of loan, interest rate, and term. The constructor requires data for each of the fields except interest rate. Do not allow loan amounts greater than R100,000. Force any loan term that is not one of the three defined in the LoanConstants class to a short-term, 1-year loan. Create a toString() method that displays all the loan data.

•• LoanConstants—A public interface class. LoanConstants includes constant values for short term (1 year), medium-term (3 years), and long-term (5 years) loans. It also contains constants for the company name and the maximum loan amount.

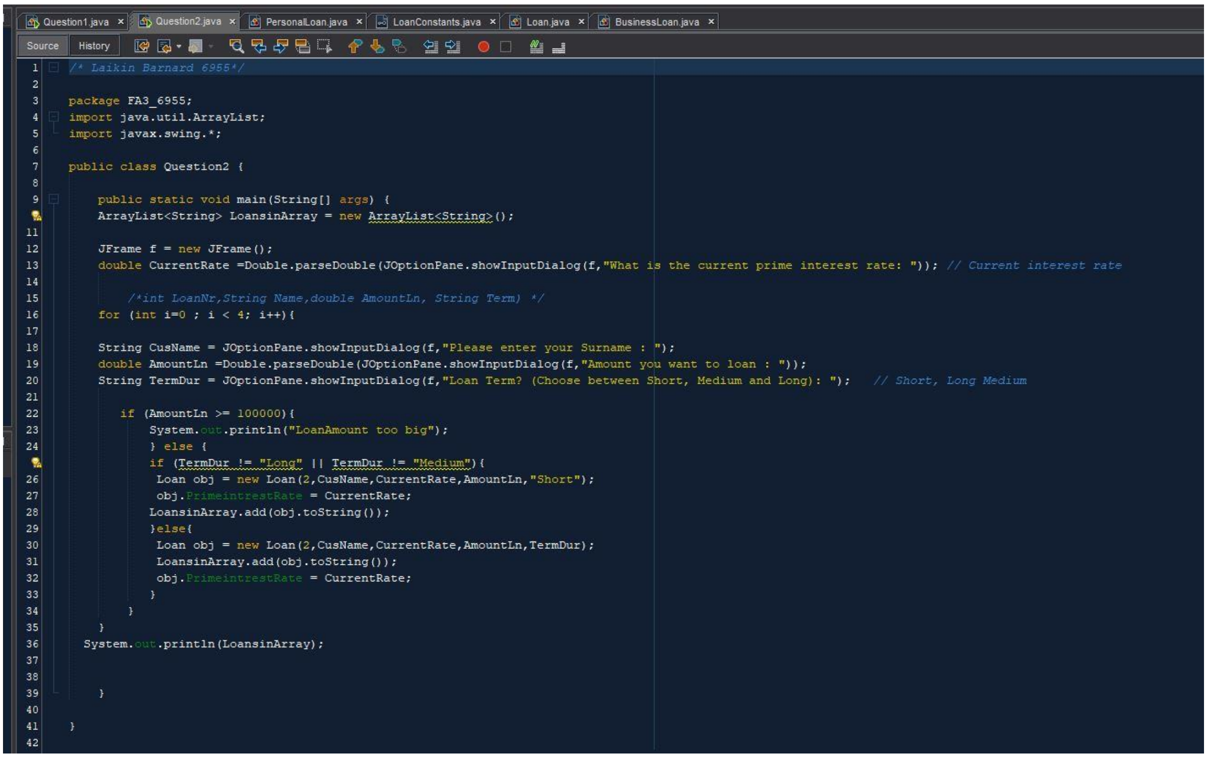
•• BusinessLoan—A public class that extends Loan. The BusinessLoan constructor sets the interest rate to 1% more than the current prime interest rate.

•• PersonalLoan—A public class that extends Loan. The PersonalLoan constructor sets the interest rate to 2% more than the current prime interest rate.

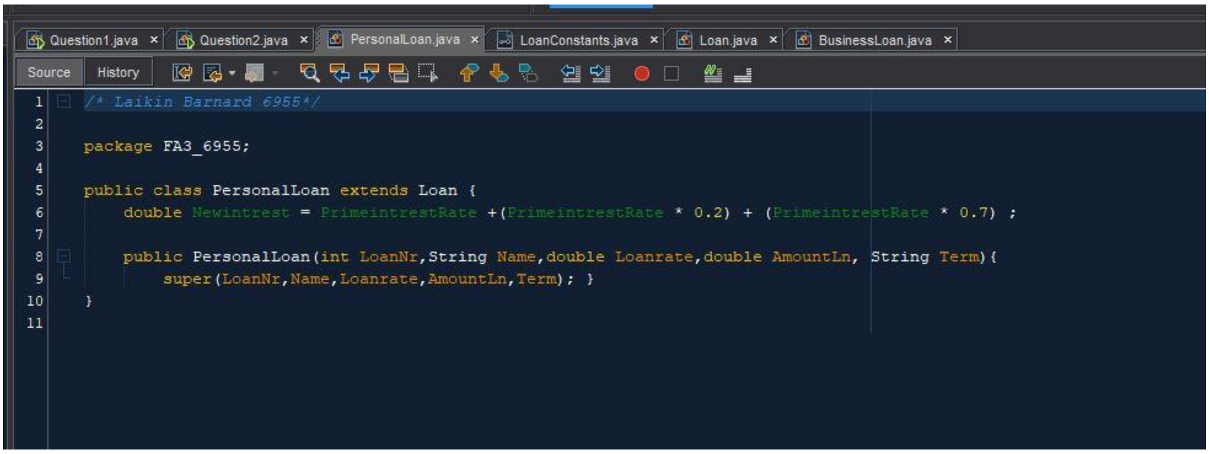
•• CreateLoans—An application that creates an array of five Loans. Prompt the user for the current prime interest rate. Then, in a loop, prompt the user for a loan type and all relevant information for that loan. Store the created Loan objects in the array. When data entry is complete, display all the loans.

Save the files as Loan.java, LoanConstants.java, BusinessLoan.java, PersonalLoan.java, and CreateLoans.java.

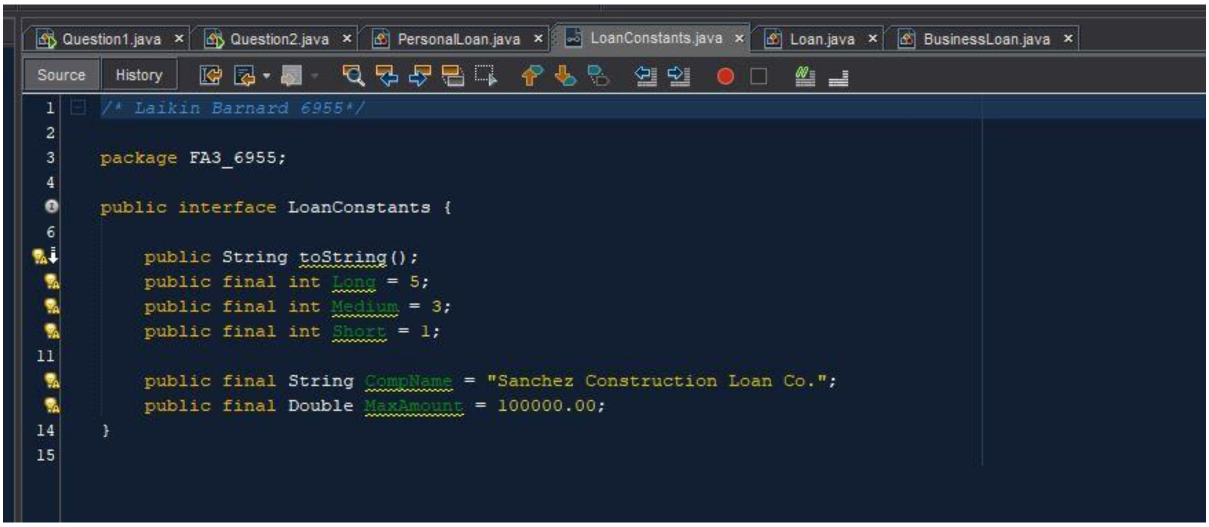
QUESTION 2 CODE:



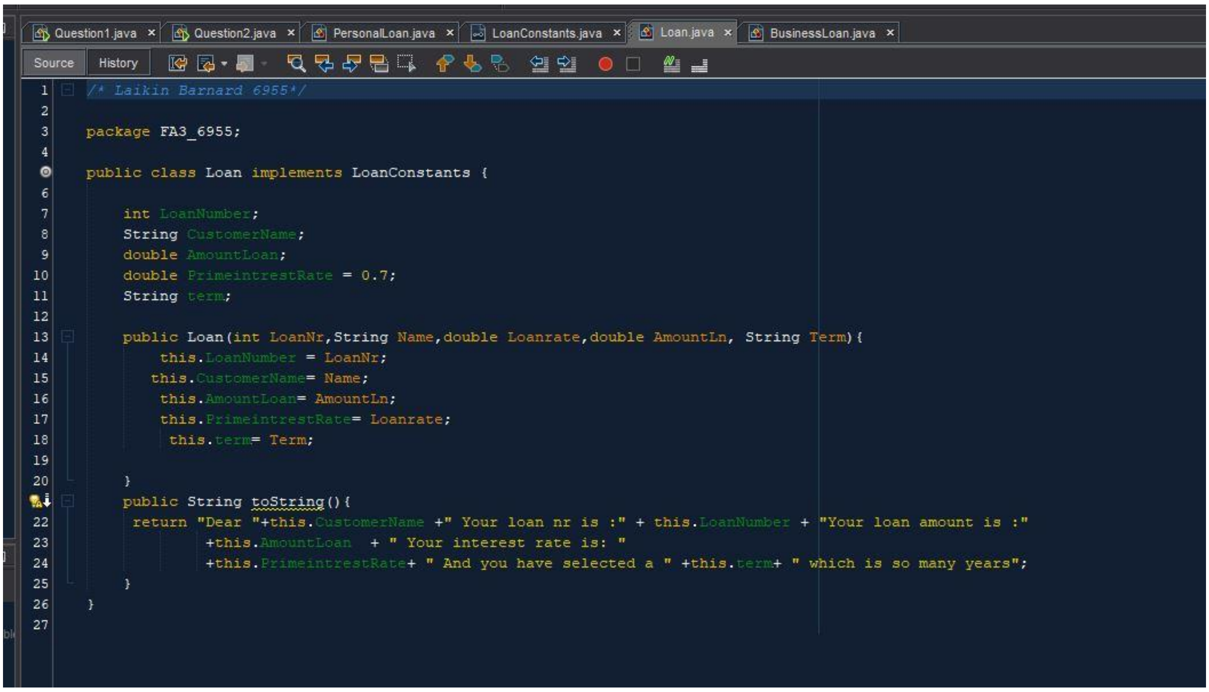
```java
/* Laikin Barnard 6955*/

package FA3_6955;
import java.util.ArrayList;
import javax.swing.*;

public class Question2 {

    public static void main(String[] args) {
    ArrayList<String> LoansinArray = new ArrayList<String>();

    JFrame f = new JFrame();
    double CurrentRate =Double.parseDouble(JOptionPane.showInputDialog(f,"What is the current prime interest rate: ")); // Current interest rate

        /*int LoanNr,String Name,double AmountLn, String Term) */
    for (int i=0 ; i < 4; i++){

    String CusName = JOptionPane.showInputDialog(f,"Please enter your Surname : ");
    double AmountLn =Double.parseDouble(JOptionPane.showInputDialog(f,"Amount you want to loan : "));
    String TermDur = JOptionPane.showInputDialog(f,"Loan Term? (Choose between Short, Medium and Long): ");   // Short, Long Medium

       if (AmountLn >= 100000){
           System.out.println("LoanAmount too big");
           } else {
           if (TermDur != "Long" || TermDur != "Medium"){
            Loan obj = new Loan(2,CusName,CurrentRate,AmountLn,"Short");
            obj.PrimeintrestRate = CurrentRate;
           LoansinArray.add(obj.toString());
           }else{
            Loan obj = new Loan(2,CusName,CurrentRate,AmountLn,TermDur);
            LoansinArray.add(obj.toString());
            obj.PrimeintrestRate = CurrentRate;
           }
       }
    }
  System.out.println(LoansinArray);


    }

}
```



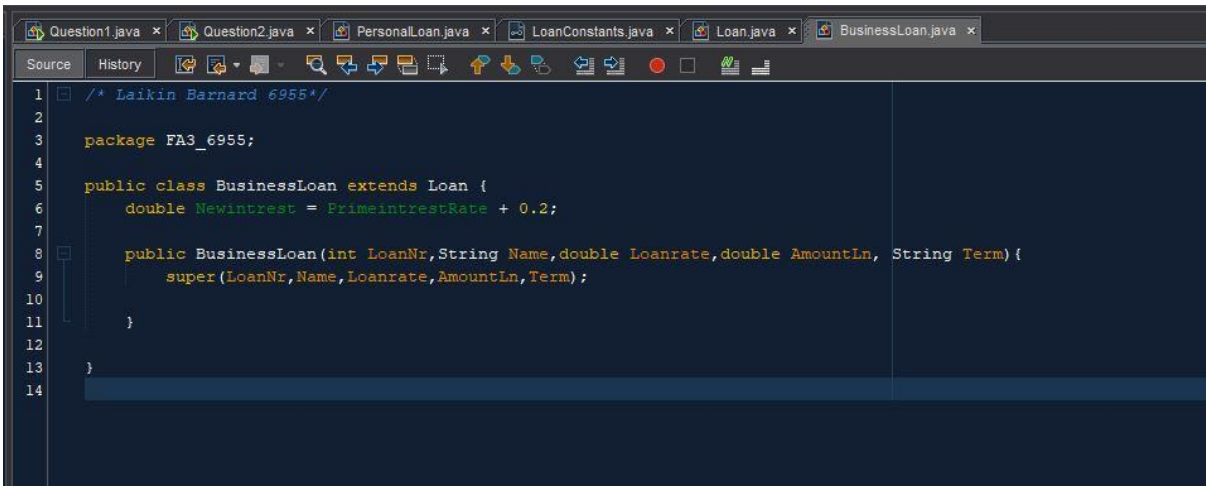
```java
/* Laikin Barnard 6955*/

package FA3_6955;

public class PersonalLoan extends Loan {
    double Newintrest = PrimeintrestRate +(PrimeintrestRate * 0.2) + (PrimeintrestRate * 0.7) ;

    public PersonalLoan(int LoanNr,String Name,double Loanrate,double AmountLn, String Term){
        super(LoanNr,Name,Loanrate,AmountLn,Term); }
}
```



```java
/* Laikin Barnard 6955*/

package FA3_6955;

public interface LoanConstants {

    public String toString();
    public final int Long = 5;
    public final int Medium = 3;
    public final int Short = 1;

    public final String CompName = "Sanchez Construction Loan Co.";
    public final Double MaxAmount = 100000.00;
}
```



```java
/* Laikin Barnard 6955*/

package FA3_6955;

public class Loan implements LoanConstants {

    int LoanNumber;
    String CustomerName;
    double AmountLoan;
    double PrimeintrestRate = 0.7;
    String term;

    public Loan(int LoanNr,String Name,double Loanrate,double AmountLn, String Term){
        this.LoanNumber = LoanNr;
       this.CustomerName= Name;
        this.AmountLoan= AmountLn;
        this.PrimeintrestRate= Loanrate;
         this.term= Term;

    }
    public String toString(){
     return "Dear "+this.CustomerName +" Your loan nr is :" + this.LoanNumber + "Your loan amount is :"
            +this.AmountLoan  + " Your interest rate is: "
            +this.PrimeintrestRate+ " And you have selected a " +this.term+ " which is so many years";
    }
}
```



```java
/* Laikin Barnard 6955*/

package FA3_6955;

public class BusinessLoan extends Loan {
    double Newintrest = PrimeintrestRate + 0.2;

    public BusinessLoan(int LoanNr,String Name,double Loanrate,double AmountLn, String Term){
        super(LoanNr,Name,Loanrate,AmountLn,Term);

    }

}
```