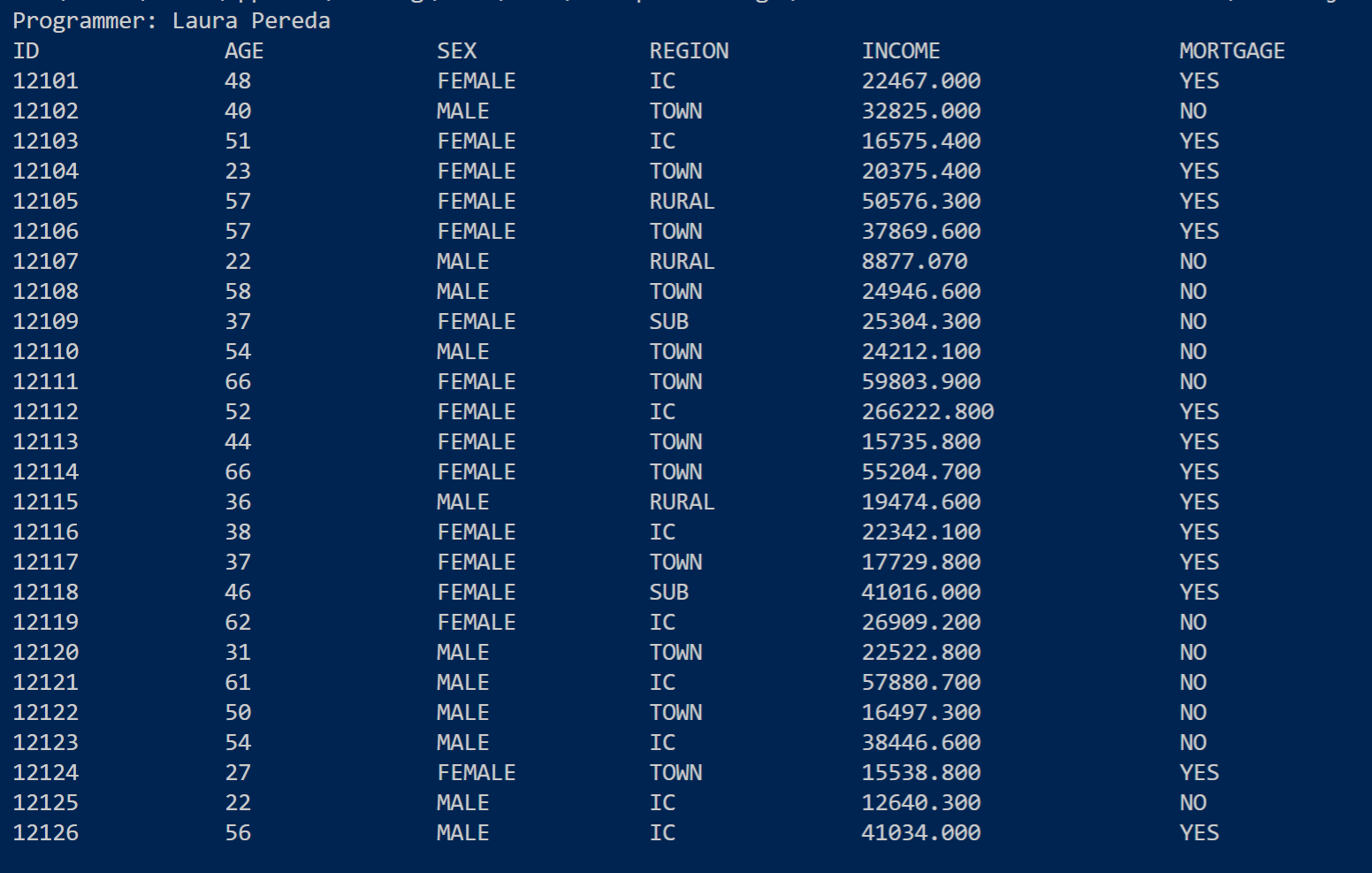
**Lab 2 – Bank Records Output**

By: Laura Pereda

Banks Records Output Photo of 25 Objects:



This is the result from printData(). In order to create neat columns, I had to modify the ID column by removing ‘id’ from each object. It was redundant and shifted the other columns. I also adjusted the income column to display up to three decimal points since it was also disrupting the neat column formatting.

**Note:** In this lab, I had found it unnecessary to have three separate functions to accomplish this task. I ended up combining the functions readData() and processData(). I have spoken to the professor regarding this change and was told he would verify with you. Aside from that, everything else is the same.

**Code Utilized**

Client.java:

package app;

public abstract class Client {

    //First method: readData()

    public abstract void readData();

    //Second method: processData()

    public abstract void processData();

    //Third method: printData();

    public abstract void printData();

}

BankRecords.java:

package app;

import java.io.BufferedReader;

import java.io.FileNotFoundException;

import java.io.FileReader;

import java.io.IOException;

import java.util.ArrayList;

public class BankRecords extends Client{

    private String id;

    private int age;

    private String sex;

    private String region;

    private double income;

    private String martialStatus;

    private int totalChildren;

    private String hasCar;

    private String save\_act;

    private String current\_act;

    private String mortgage;

    private String pep;

    //ArrayList to manage data

    private static ArrayList<BankRecords> bArrayList;

    /\*

    \*   Constructor with no parameters

    \*/

    public BankRecords(){

    }

    /\*

    \*   Constructor with parameters

    \*/

    public BankRecords(String id, int age, String sex, String region, int income, String martialStatus,

            int totalChildren, String hasCar, String save\_act, String current\_act, String mortgage, String pep) {

        this.id = id;

        this.age = age;

        this.sex = sex;

        this.region = region;

        this.income = income;

        this.martialStatus = martialStatus;

        this.totalChildren = totalChildren;

        this.hasCar = hasCar;

        this.save\_act = save\_act;

        this.current\_act = current\_act;

        this.mortgage = mortgage;

        this.pep = pep;

    }

    public String getId() {

        return id;

    }

    public void setId(String id) {

        this.id = id;

    }

    public int getAge() {

        return age;

    }

    public void setAge(int age) {

        this.age = age;

    }

    public String getSex() {

        return sex;

    }

    public void setSex(String sex) {

        this.sex = sex;

    }

    public String getRegion() {

        return region;

    }

    public void setRegion(String region) {

        this.region = region;

    }

    public double getIncome() {

        return income;

    }

    public void setIncome(double income) {

        this.income = income;

    }

    public String getMartialStatus() {

        return martialStatus;

    }

    public void setMartialStatus(String martialStatus) {

        this.martialStatus = martialStatus;

    }

    public int getTotalChildren() {

        return totalChildren;

    }

    public void setTotalChildren(int totalChildren) {

        this.totalChildren = totalChildren;

    }

    public String getHasCar() {

        return hasCar;

    }

    public void setHasCar(String hasCar) {

        this.hasCar = hasCar;

    }

    public String getSave\_act() {

        return save\_act;

    }

    public void setSave\_act(String save\_act) {

        this.save\_act = save\_act;

    }

    public String getCurrent\_act() {

        return current\_act;

    }

    public void setCurrent\_act(String current\_act) {

        this.current\_act = current\_act;

    }

    public String getMortgage() {

        return mortgage;

    }

    public void setMortgage(String mortgage) {

        this.mortgage = mortgage;

    }

    public String getPep() {

        return pep;

    }

    public void setPep(String pep) {

        this.pep = pep;

    }

    /\*

    \*   This methods will read from the CSV file and place data into an ArrayList

    \*/

    @Override

    public void readData() {

        BufferedReader br = null;

        String line = "";

        bArrayList = new ArrayList<>();

        try{

            //Create and initialize a new reader object to read from the CSV file

            String workingDir = System.getProperty("user.dir");

            System.out.println(workingDir);

            FileReader fr = new FileReader(workingDir+"\\Lab 2\\bank-Detail.csv");

            br = new BufferedReader(fr);

            while((line = br.readLine()) != null){

                String[] data = line.split(",");

                //Create an empty BankRecord object & set the data

                BankRecords bankRecords = new BankRecords();

                bankRecords.setId(data[0]);                                         //data[0] : String id

                bankRecords.setAge(Integer.parseInt(data[1]));                      //data[1] : int age

                bankRecords.setSex(data[2]);                                        //data[2] : String sex

                bankRecords.setRegion(data[3]);                                     //data[3] : String region

                bankRecords.setIncome(Double.parseDouble(data[4]));                   //data[4] : int income

                bankRecords.setMartialStatus(data[5]);                              //data[5] : String region

                bankRecords.setTotalChildren(Integer.parseInt(data[6]));             //data[6] : int children

                bankRecords.setHasCar(data[7]);                                     //data[7] : String car

                bankRecords.setSave\_act(data[8]);                                   //data[8] : String sav\_act

                bankRecords.setCurrent\_act(data[9]);                                //data[9] : String curr\_act

                bankRecords.setMortgage(data[10]);                                  //data[10]: String mortgage

                bankRecords.setPep(data[11]);                                       //data[11]: String pep

                //Add object to empty bArrayList

                bArrayList.add(bankRecords);

            }

            //Call printData()

            processData();

        } catch (FileNotFoundException e){

            e.printStackTrace();

        } catch (IOException e){

            e.printStackTrace();

        } finally {

            if (br != null){

                try{

                    br.close();

                } catch (IOException e){

                    e.printStackTrace();

                }

            }

        }

    }

    /\*

    \*   This methods will process data in ArrayList and add all data into each of the instance fields via setters.

    \*   An array of objects will be used to store data for each instance field

    \*/

    @Override

    public void processData() {

        // TODO Auto-generated method stub

        printData();

    }

    /\*

    \*   This methods will print the first 25 records for various fields via getters.

    \*   The following records will be printed: ID, AGE, SEX, REGION, INCOME, and MORTGAGE

    \*/

    @Override

    public void printData() {

        System.out.println("Programmer: Laura Pereda");

        //Header to print information

        System.out.println("ID\t\tAGE\t\tSEX\t\tREGION\t\tINCOME\t\t\tMORTGAGE");

        //Created a for loop to only print out the first 25 objects with information

        for(int i = 0; i <= 25; i++){

            String id = bArrayList.get(i).getId();

            String removeID = id.replace("id", "");

            int age = bArrayList.get(i).getAge();

            String sex = bArrayList.get(i).getSex();

            String region = bArrayList.get(i).getRegion();

            Double income = bArrayList.get(i).getIncome();

            String mortgage = bArrayList.get(i).getMortgage();

            /\*  Because of formatting issues, I decided to abbreiviate REGION

            \*   INNER\_CITY = IC

            \*   SUBURBAN = SUB

            \*   Note: I removed the string "id" from the ID of each object since it is redundant to maintain

            \*/

            String abbriviatedRegion = "";

            String printOut = "";

            if(region.equals("INNER\_CITY")){

                abbriviatedRegion = "IC";

                printOut = String.format("%s\t\t%d\t\t%s\t\t%s\t\t%.3f\t\t%s", removeID, age, sex, abbriviatedRegion, income, mortgage);

            } else if(region.equals("SUBURBAN")) {

                abbriviatedRegion = "SUB";

                printOut = String.format("%s\t\t%d\t\t%s\t\t%s\t\t%.3f\t\t%s", removeID, age, sex, abbriviatedRegion, income, mortgage);

            } else {

                printOut = String.format("%s\t\t%d\t\t%s\t\t%s\t\t%.3f\t\t%s", removeID, age, sex, region, income, mortgage);

            }

            System.out.println(printOut);

            //System.out.println(id + "\t\t" + age + "\t\t" + sex + "\t\t" + region + "\t\t" + income + "\t\t" + mortgage);

        }

    }

    public static void main(String[] args) {

        //Call readData to begin reading and parsing data, which will lead to printing

        BankRecords br = new BankRecords();

        br.readData();

    }

}