Question

Assessment 1A

Mellon share owner services maintain the details of the share holders.

a) Maintain the personal details of the share holder.

b) Manipulate the users to buy and sell the shares.

c) Maintain the account balances after sell and buying the shares.

d) Issue the dividends yearly once. Dividends means a bonus. E.g. 30% bonus means balance = balance + (balance * 0.3)

Write a Java program to implement the problem stated above using classes and objects in Java

Expected output:

.Tran Id	Share holder name	Bank Acc No	Date	Share Sell Value	Shares buy Value	Dividend	Acc Bal

Melon Class

```java
package com.company;

public class MellonServices {
    int trans_id;
    String name;
    String date;          // Date date
    String account_number;
    int balance_share;  // To maintain balance shares after adding/deleting the share
    int balance_amount; // To maintain balance amount after adding/deleting the share
    int divident;

    MellonServices(int id,String name,String date,String acc_number,int b_share,int b_amount,int b_divident) {
        this.trans_id = id;
        this.name = name;
        this.date = date;
        this.account_number = acc_number;
        this.balance_share = b_share;
        this.balance_amount = b_amount;
        this.divident = b_divident;
    }

    /* Consider the Price of 1 share --> Rs 20*/
    public void Buy_share(int share) {
        if (balance_amount >= (share * 10)) {
            this.trans_id +=1;
            this.balance_share = this.balance_share + share;   /* balance share increases */
            this.balance_amount = this.balance_amount - (share * 20);   /* balance amount decreases */
        }
    }

    /* Consider the Price of 1 share --> Rs 10*/
    public void Sell_share(int share) {
        if (balance_share >= share) {
            this.trans_id +=1;
            this.balance_share = this.balance_share - share;   /* balance share decreases */
            this.balance_amount = this.balance_amount + (share * 10);   /* balance amount increases */
        }
    }

    public void Dividend() {
        this.trans_id +=1;
        this.balance_amount = this.balance_amount + (this.balance_amount * (this.divident/100));
    }

    public void Display(){
        System.out.println("\nTransaction_ID       "
                        +"Name         "
                        +"Bank_acc       "
                        +"Date       "
                        +"Share_buy_value      "
                        +"Share_sell_value     "
                        +"Dividend       "
                        +"Account_balance      "
            );

        System.out.println("-----------------------------------------------------------" +
                "-----------------------------------------------------------");

        System.out.println(this.trans_id + "                      "
                    + this.name + "       "
                    + this.account_number + "        "
                    + this.date + "         "
                    + "20" + "              "
                    + "10" + "                "
                    + this.divident + "              "
                    + this.balance_amount) ;
    }
}
```

Main method

```java
package com.company;

public class Main {

    public static void main(String[] args) {
        MellonServices obj1 = new MellonServices( id: 1, name: "Prashanth", date: "2020-02-08", acc_number: "2ABC123", b_share: 25, b_am
        MellonServices obj2 = new MellonServices( id: 2, name: "William", date: "2020-11-23", acc_number: "9PQR456", b_share: 30, b_amou
        MellonServices obj3 = new MellonServices( id: 3, name: "Monica", date: "2019-04-29", acc_number: "8XYZ789", b_share: 40, b_amount

        System.out.println("     ##################        Before transactions        ##################");
        obj1.Display();
        obj2.Display();
        obj3.Display();

        obj1.Buy_share(30);  // Prashanth wants to buy 10 shares
        obj1.Buy_share(20);  // William wants to buy 30 shares
        obj1.Buy_share(10);  // Monica wants to buy 40 shares

        obj1.Sell_share(5);  // Prashanth wants to sell 5 shares
        obj2.Sell_share(10); // William wants to sell 10 shares
        obj3.Sell_share(15); // Monica wants to sell 15 shares

        obj1.Dividend();        // Prashanth wants to give divident as  5%
        obj1.Dividend();        // William wants to give divident as  10%
        obj1.Dividend();        // Monica wants to give divident as  15%

        System.out.println();
        System.out.println("     ##################        After transactions        ##################");
        obj1.Display();
        obj2.Display();
        obj3.Display();
    }
}
```

Output

```
"C:\Program Files\Amazon Corretto\jdk15.0.2_7\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edit
     ##################        Before transactions        ##################

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
1                  Prashanth 2ABC123      2020-02-08       20                 10                 5            1000

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
2                  William   9PQR456      2020-11-23       20                 10                 10           1500

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
3                  Monica    8XYZ789      2019-04-29       20                 10                 15           2000

     ##################        After transactions        ##################

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
7                  Prashanth 2ABC123      2020-02-08       20                 10                 5            50

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
3                  William   9PQR456      2020-11-23       20                 10                 10           1600

Transaction_ID     Name      Bank_acc     Date        Share_buy_value    Share_sell_value    Dividend      Account_
-------------------------------------------------------------------------------------------------------------------
4                  Monica    8XYZ789      2019-04-29       20                 10                 15           2150

Process finished with exit code 0
```

Melon Class

```java
package com.company;

public class MellonServices {
    int trans_id;
    String name;
    String date;                // Date date
    String account_number;
    int balance_share;  // To maintain balance shares after
adding/deleting the share
    int balance_amount; // To maintain balance amount after
adding/deleting the share
    int divident;

    MellonServices(int id,String name,String date,String
acc_number,int b_share,int b_amount,int b_divident) {
        this.trans_id = id;
        this.name = name;
        this.date = date;
        this.account_number = acc_number;
        this.balance_share = b_share;
        this.balance_amount = b_amount;
        this.divident = b_divident;
    }

    /* Consider the Price of 1 share --> Rs 20*/
    public void Buy_share(int share) {
        if (balance_amount >= (share * 10)) {
            this.trans_id +=1;
            this.balance_share = this.balance_share + share;
/* balance share increases */
            this.balance_amount = this.balance_amount - (share
* 20);    /* balance amount decreases */
        }
    }

    /* Consider the Price of 1 share --> Rs 10*/
    public void Sell_share(int share) {
        if (balance_share >= share) {
            this.trans_id +=1;
            this.balance_share = this.balance_share - share;
/* balance share decreases */
            this.balance_amount = this.balance_amount + (share
* 10);    /* balance amount increases */
        }
    }

    public void Dividend() {
        this.trans_id +=1;
        this.balance_amount = this.balance_amount +
```

```java
                (this.balance_amount * (this.divident/100));
        }

    public void Display(){
        System.out.println("\nTransaction_ID      "
                        +"Name         "
                        +"Bank_acc        "
                        +"Date        "
                        +"Share_buy_value        "
                        +"Share_sell_value       "
                        +"Dividend        "
                        +"Account_balance       "
                );

        System.out.println("--------------------------------
------------------------" +
                "----------------------------------------
----------------------------");

        System.out.println(this.trans_id + "
"
                    + this.name + "     "
                    + this.account_number + "       "
                    + this.date + "        "
                    + "20" + "             "
                    + "10" + "                 "
                    + this.divident + "          "
                    + this.balance_amount) ;
    }
}
```

Main method

```java
package com.company;

public class Main {

    public static void main(String[] args) {
        MellonServices obj1 = new
MellonServices(1,"Prashanth", "2020-02-08", "2ABC123", 25,
1000,5);
        MellonServices obj2 = new MellonServices(2,"William",
"2020-11-23", "9PQR456", 30, 1500,10);
        MellonServices obj3 = new MellonServices(3,"Monica",
"2019-04-29", "8XYZ789", 40, 2000,15);

        System.out.println("      #################
Before transactions          ##################");
        obj1.Display();
        obj2.Display();
        obj3.Display();
```

```java
        obj1.Buy_share(30);   // Prashanth wants to buy 10
shares
        obj1.Buy_share(20);   // William wants to buy 30 shares
        obj1.Buy_share(10);   // Monica wants to buy 40 shares

        obj1.Sell_share(5);   // Prashanth wants to sell 5
shares
        obj2.Sell_share(10); // William wants to sell 10
shares
        obj3.Sell_share(15); // Monica wants to sell 15 shares

        obj1.Dividend();        // Prashanth wants to give
divident as  5%
        obj1.Dividend();        // William wants to give
divident as  10%
        obj1.Dividend();        // Monica wants to give
divident as  15%

        System.out.println();
        System.out.println("     #################
After transactions          ##################");
        obj1.Display();
        obj2.Display();
        obj3.Display();
    }
}
```

Output

```
"C:\Program Files\Amazon Corretto\jdk15.0.2_7\bin\java.exe" "-
javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community
Edition 2020.3.2\lib\idea_rt.jar=50717:C:\Program
Files\JetBrains\IntelliJ IDEA Community Edition 2020.3.2\bin"
-Dfile.encoding=UTF-8 -classpath "C:\WinterSemester-
2021\CSI2008 Programming in JAVA\JAVA lab
practice\Assignment_1A\out\production\Assignment_1A"
com.company.Main
     #################          Before transactions
##################

Transaction_ID          Name       Bank_acc       Date
Share_buy_value      Share_sell_value       Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
1                       Prashanth   2ABC123       2020-02-08
20              10                      5               1000
```

```
Transaction_ID          Name        Bank_acc        Date
Share_buy_value         Share_sell_value        Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
2                       William     9PQR456         2020-11-23
20              10                      10                      1500

Transaction_ID          Name        Bank_acc        Date
Share_buy_value         Share_sell_value        Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
3                       Monica      8XYZ789         2019-04-29
20              10                      15                      2000

    ##################        After transactions
####################

Transaction_ID          Name        Bank_acc        Date
Share_buy_value         Share_sell_value        Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
7                       Prashanth   2ABC123         2020-02-08
20              10                      5                       50

Transaction_ID          Name        Bank_acc        Date
Share_buy_value         Share_sell_value        Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
3                       William     9PQR456         2020-11-23
20              10                      10                      1600

Transaction_ID          Name        Bank_acc        Date
Share_buy_value         Share_sell_value        Dividend
Account_balance
----------------------------------------------------------------
----------------------------------------------------------------
---------
4                       Monica      8XYZ789         2019-04-29
20              10                      15                      2150

Process finished with exit code 0
```

Github : **https://github.com/PrashanthSingaravelan/WinterSemester-2021/tree/main/CSI2008%20Programming%20in%20JAVA/JAVA%20lab%20practice/Assignment_1A_1B**