**Week 5**

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**Q5**. Develop a Java program to create a class Bank that maintains two kinds of account for its customers,

one called savings account and the other current account. The savings account provides compound

interest and withdrawal facilities but no cheque book facility. The current account provides cheque

book facility but no interest. Current account holders should also maintain a minimum balance and if

the balance falls below this level, a service charge is imposed.

Create a class Account that stores customer name, account number and type of account. From this

derive the classes Cur-acct and Sav-acct to make them more specific to their requirements. Include the

necessary methods in order to achieve the following tasks.

a) Accept deposit from customer and update the balance.

b) Display the balance.

c) Compute and deposit interest.

d) Permit withdrawal and update the balance.

Check for the minimum balance, impose penalty if necessary and update the balance

**Code :**

import java.util.Scanner;

class account {

String name;

int account\_num;

String acc\_type;

}

class sav\_acct extends account {

double balance;

sav\_acct(String n, int ac, String actype, Double bl) {

name = n;

account\_num = ac;

actype = acc\_type;

balance = bl;

}

Scanner sc = new Scanner(System.in);

void deposit(int val) {

balance += val;

}

void display\_bal() {

System.out.println("Balance is: " + balance);

}

void deposit\_interest() {

double int\_rate = 0.05;

double time = 0;

System.out.println("enter the time period");

time = sc.nextDouble();

double amount;

amount = balance \* Math.pow((1 + int\_rate), time);

balance = amount;

}

void withdraw(int val) {

if (val > balance) {

System.out.println("out of funds, withdraw lesser");

} else {

balance -= val;

System.out.println("withdrawal successful");

System.out.println("new balance: " + balance);

}

}

void check\_min() {

Double min\_bal = 1000.00;

Double penalty = 100.00;

if (balance < min\_bal) {

System.out.println("balance lesser than minimum balance, penalty imposed");

balance -= penalty;

}

else{

System.out.println("balance higher than minimum balance");

}

}

}

class cur\_acct extends account {

double balance;

cur\_acct(String n, int ac, String actype, Double bl) {

name = n;

account\_num = ac;

actype = acc\_type;

balance = bl;

}

void deposit(int val) {

balance += val;

}

void display\_bal() {

System.out.println("Balance is: " + balance);

}

void deposit\_interest() {

System.out.println("Current account doesnt provide any interest");

}

void withdraw(int val) {

System.out.println("Current account doesnt provide withdrawal facility");

}

void check\_min() {

double min\_bal = 1000.00;

double penalty = 100.00;

if (balance < min\_bal) {

System.out.println("balance lesser than minimum balance, penalty imposed");

balance -= penalty;

}

else{

System.out.println("balance higher than minimum balance");

}

}

void cheque\_withdrawal(int val) {

this.check\_min();

balance -= val;

System.out.println("withdrawal successful");

System.out.println("new balance: " + balance);

}

}

class bank {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

System.out.println("enter your name, account number, aacount type(savings/current), balance");

String name = sc.nextLine();

int account\_num = sc.nextInt();

String acc\_type = sc.next();

double balance = sc.nextDouble();

if (acc\_type.equals("savings")) {

sav\_acct a1 = new sav\_acct(name, account\_num, acc\_type, balance);

int choice = 0;

while (choice != 6) {

System.out.println(

"1.deposit\n2.display balance\n3.compute and deposit interest\n4.withdraw\n5.check for minimum balance\n6.exit");

choice = sc.nextInt();

switch (choice) {

case (1):

System.out.println("enter the value to deposit");

int val = sc.nextInt();

a1.deposit(val);

break;

case (2):

a1.display\_bal();

break;

case (3):

a1.deposit\_interest();

break;

case (4):

System.out.println("enter the value to withdraw");

int withd = sc.nextInt();

a1.withdraw(withd);

break;

case (5):

a1.check\_min();

break;

case (6):

System.out.println("exited");

break;

default:

System.out.println("enter a valid choice");

break;

}

}

} else {

cur\_acct a1 = new cur\_acct(name, account\_num, acc\_type, balance);

int choice = 0;

while (choice != 6) {

System.out.println(

"1.deposit\n2.display balance\n3.compute and deposit interest\n4.withdraw using cheque\n5.check for minimum balance\n6.exit");

choice = sc.nextInt();

switch (choice) {

case (1):

System.out.println("enter the value to deposit");

int val = sc.nextInt();

a1.deposit(val);

break;

case (2):

a1.display\_bal();

break;

case (3):

a1.deposit\_interest();

break;

case (4):

System.out.println("enter the value to withdraw");

int withd = sc.nextInt();

a1.cheque\_withdrawal(withd);

break;

case (5):

a1.check\_min();

break;

case (6):

System.out.println("exited");

break;

default:

System.out.println("enter a valid choice");

break;

}

}

}

}

}

**Sample Output :**





