Account Test

/\*

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\*/

package bankaccountapplication;

import java.util.Scanner;

/\*\*

\*

\* @author Arsla

\*/

public class AccountTest {

/\*\*

\* @param args the command line arguments

\*/

public static void main(String[] args)

{

// TODO code application logic here

Account[] array = new Account[5];

array[0] = new SavingsAccounts();

array[1] = new SavingsAccounts();

array[2] = new SavingsAccounts();

array[3] = new SavingsAccounts();

array[4] = new SavingsAccounts();

Account[] array2 = new Account[5];

array2[0] = new CurrentAccount();

array2[1] = new CurrentAccount();

array2[2] = new CurrentAccount();

array2[3] = new CurrentAccount();

array2[4] = new CurrentAccount();

Scanner input = new Scanner(System.in);

int choice=0;

do

{

System.out.println("1- Add Savings Account");

System.out.println("2- Add Current Account");

System.out.println("3- Deposit Money");

System.out.println("4- Withdraw Money");

System.out.println("5- Check Balance");

System.out.println("6- Exit");

choice = input.nextInt();

if (choice ==1)

{

for (Account saving: array)

{

saving.addAccount();

System.out.println("6- Exit");

}

}

else if (choice == 2)

{

for ( int i=5 ; i<10 ; i++)

{

array[i].addAccount();

}

}

else if (choice == 3)

{

for (Account : array)

account.depoistAccount();

}

else if (choice ==4)

{

for (Account : array)

account.withdraw();

}

else if (choice ==5)

{

break;

}

}while( true);

}

}

Account

/\*

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\*/

package bankaccountapplication;

import java.util.Scanner;

import java.util.regex.Pattern;

/\*\*

\*

\* @author Arsla

\*/

public class Account {

protected String CNIC;

protected long accountNumber;

protected String accountTitle;

protected double balance;

protected static int count=0;

public Account()

{

count++;

}

public void addAccount()

{

Scanner input = new Scanner(System.in);

Scanner inputst = new Scanner(System.in);

System.out.print("\nInput the Account Title: ");

do

{

this.accountTitle = inputst.nextLine();

if (Pattern.matches("[A-Z][a-z]+",accountTitle))

{

System.out.println("Yes, string contains letters only");

break;

}

else

{

System.out.println("Nope, Other characters detected");

}

}while(true);

System.out.print("\nInput the CINC: ");

do

{

this.CNIC = inputst.nextLine();

try

{

Double num = Double.parseDouble(CNIC);

break;

}

catch (NumberFormatException e)

{

System.out.println(CNIC + " only contain numbers");

}

} while (true);

System.out.print("\nInput the Balance: ");

do

{

this.balance = input.nextDouble();

if (balance> 0 )

break;

else

System.out.print("Balance should be greater than zero:");

}while(true);

}

public void withdraw()

{

Scanner input = new Scanner(System.in);

System.out.print("\nEnter the Amount to withdraw: ");

double withdraw = input.nextDouble();

withdraw = this.balance - withdraw;

if (withdraw<0)

throw new IllegalArgumentException("Transaction cannot be completed!");

else

this.balance = withdraw;

System.out.print("\nTotal Balance:"+this.balance );

}

public void depoistAccount()

{

Scanner input = new Scanner(System.in);

System.out.print("\nEnter the Amount to Deposit: ");

double deposit = input.nextDouble();

this.balance = this.balance - deposit;

System.out.print("\nTotal Balance:"+this.balance );

}

public int totalAccounts()

{

return count;

}

}

Current Account

/\*

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\*/

package bankaccountapplication;

import java.util.Scanner;

import java.util.regex.Pattern;

/\*\*

\*

\* @author Arsla

\*/

public class CurrentAccount extends Account

{

private float serviceFeeRate;

public CurrentAccount()

{

super();

}

@Override

public void addAccount()

{

Scanner input = new Scanner(System.in);

Scanner inputst = new Scanner(System.in);

System.out.println("Enter the Account Numbeer: ");

do

{

String title= inputst.nextLine();

if (Pattern.matches("[2][1-9]+", title))

{

this.accountNumber = Integer.parseInt(title);

break;

}

else

System.out.println("First digit should be 1");

}while(true);

System.out.println("Enter the Account Numbeer: ");

this.serviceFeeRate = input.nextFloat();

if (this.serviceFeeRate <0.0)

throw new IllegalArgumentException("Service Fee Cannot be less than Zero:");

}

public void setServiceFee()

{

Scanner input = new Scanner(System.in);

System.out.print("Enter the Service Fee: ");

this.serviceFeeRate = input.nextFloat();

}

public void checkBalance()

{

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

}

@Override

public int totalAccounts()

{

return SavingsAccounts.count;

}

}

Saving Account

/\*

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\*/

package bankaccountapplication;

import java.util.Scanner;

import java.util.regex.Pattern;

/\*\*

\*

\* @author Arsla

\*/

public class SavingsAccounts extends Account

{

private float monthlyInterestRate;

public SavingsAccounts()

{

super();

}

@Override

public void addAccount()

{

Scanner input = new Scanner(System.in);

Scanner inputst = new Scanner(System.in);

System.out.println("Enter the Account Numbeer: ");

do

{

String title= inputst.nextLine();

if (Pattern.matches("[1][1-9]+", title))

{

this.accountNumber = Integer.parseInt(title);

break;

}

else

System.out.println("First digit should be 1");

}while(true);

System.out.println("Enter the Monthly Interest Rate: ");

do

{

this.monthlyInterestRate = input.nextFloat();

if (this.monthlyInterestRate > 0.0)

break;

else

System.out.println("Hourly Rate must be greater than zero");

}while (true);

}

public void setInterestRate()

{

Scanner input = new Scanner(System.in);

System.out.println("Enter the Interest Rate: ");

this.monthlyInterestRate = input.nextFloat();

}

public void calculateInterestRate()

{

Scanner input = new Scanner(System.in);

System.out.println("Enter the Number of Years: ");

int noYears = input.nextInt();

this.balance = this.balance \* this.monthlyInterestRate \* noYears;

System.out.print("Interst Rate :"+this.balance );

}

@Override

public int totalAccounts()

{

return SavingsAccounts.count;

}

public void checkBalance()

{

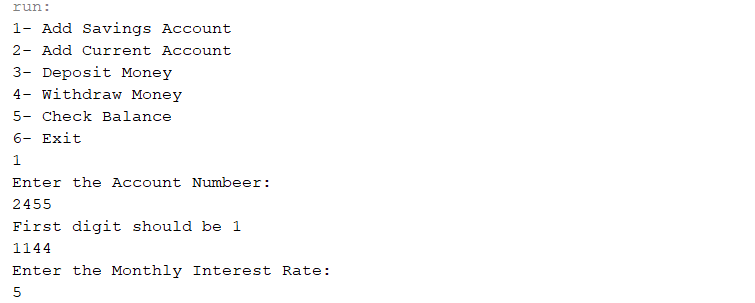
System.out.println(this.balance);

}

}

Output

It instantiate the instance variable of Account class in the addAccount method of Account class to tried to call the overridden method (addAcount) of supclass and super class as the same time. This could not happen because Polymorphism does not allow us to do this.



Calculator

import java.util.Scanner;

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\*

\* @author Arsla

\*/

public class Calculator {

/\*\*

\* @param value

\*/

public static double performOperation(double value, String str) throws UnknownOperatorException

{

System.out.println("Calculator is on.");

char operator = str.charAt(0);

if(!operator=="+" && !operator=="-" && !operator=="\*" && !operator=="/" && !operator=="R" && !operator=="r")

throw new UnknownOperatorException(operator);

if(operator.equals("R") || operator.equals("r"))

return value;

double number = Double.parseDouble(str.substring(1, str.length()));

System.out.print("result " + operator + " " + number + " = ");

switch (operator) {

case "+":

return value += number;

case "-":

return value -= number;

case "\*":

return value \*= number;

default:

return value /= number;

}

}

public static void main(String args[])

{

Scanner input = new Scanner(System.in);

System.out.println("Calculator is on.");

char choice = 'y';

do

{

double result = 0.0;

System.out.println("result = " + result);

String operator = new String();

while(!operator.equals("R") && !operator.equals("r"))

{

}

}while(choice == 'y'|| choice == 'Y');

}

}

}

UnknownOperatorException

/\*

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/\*\*

\*

\* @author Arsla

\*/

public class UnknownOperatorException extends Exception

{

public UnknownOperatorException(String operator)

{

super(operator);

System.out.println(operator+ " operator is unknow " );

}

}

Due to poor time management is could not able to complete this question 😢