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CECS277

Lab 5

1.

**import** javax.swing.JFrame;

**public** **class** Main {

**public** **static** **void** main(String[] args){

JFrame f = **new** BankAccountFrame();

f.setVisible(**true**);

}

}

**public** **class** BankAccount {

**private** **double** balance;

BankAccount(){

balance = 0.0;

}

BankAccount(**double** bl){

balance = bl;

}

**public** **void** setBalance(**double** bl){

balance = bl;

}

**public** **double** getBalance(){

**return** balance;

}

**public** **void** deposit(**double** amount){

balance += amount;

}

**public** **void** withdraw(**double** amount){

balance -= amount;

}

}

import java.awt.Dimension;

import java.awt.Toolkit;

import java.awt.Window;

import javax.swing.JFrame;

import javax.swing.JPanel;

public class BankAccountFrame extends JFrame {

public BankAccountFrame(){

setTitle("Title");

setSize(400, 100);

centerWindow(this);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

BankAccount b = new BankAccount(400.0);

JPanel c = new BankAccountPanel(b);

this.add(c);

}

private void centerWindow(Window w) {

Toolkit tk = Toolkit.getDefaultToolkit();

Dimension d = tk.getScreenSize();

setLocation((d.width - w.getWidth()) / 2, (d.height - w.getHeight()) / 2);

}

}

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import javax.swing.AbstractButton;

import javax.swing.JButton;

import javax.swing.JLabel;

import javax.swing.JPanel;

import javax.swing.JTextField;

public class BankAccountPanel extends JPanel implements ActionListener

{

private JButton wButton;

private JButton dButton;

private JLabel amountLabel;

private JLabel outputLabel;

private JTextField amountField;

private BankAccount ba;

BankAccountPanel(BankAccount a){

ba = a;

amountLabel = new JLabel("Amount");

this.add(amountLabel);

amountField = new JTextField(7);

this.add(amountField);

wButton = new JButton("Withdraw");

this.add(wButton);

dButton = new JButton("Deposit");

this.add(dButton);

outputLabel = new JLabel("Balane = " + ba.getBalance());

this.add(outputLabel);

wButton.addActionListener(this);

dButton.addActionListener(this);

}

@Override

public void actionPerformed(ActionEvent e) {

Object o = e.getSource();

if(o == dButton){

double amount = Double.parseDouble(amountField.getText());

ba.deposit(amount);

outputLabel.setText("Balance = $ " + ba.getBalance());

}

else if (o == wButton){

double amount = Double.parseDouble(amountField.getText());

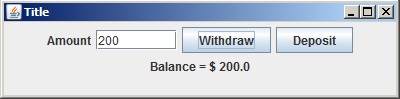
ba.withdraw(amount);

outputLabel.setText("Balance = $ " + ba.getBalance());

}

}

}



2.

**import** javax.swing.JFrame;

**public** **class** Main {

**public** **static** **void** main(String[] args)

{

JFrame f = **new** YearlyBalanceCalculatorFrame();

f.setVisible(**true**);

}

}

**public** **class** SavingAccount {

**private** **double** balance;

SavingAccount(){

balance = 0.00;

}

SavingAccount(**double** bl){

balance = bl;

}

**public** **void** setBalance(**double** bl){

balance = bl;

}

**public** **double** getBalance(){

**return** balance;

}

**public** **double** yearlyBalance(**double** initialBalance, **double** anualRate){

**double** interest = initialBalance \* anualRate / 100;

**double** result = initialBalance += interest;

**return** result;

}

}

**import** java.awt.Dimension;

**import** java.awt.Toolkit;

**import** java.awt.Window;

**import** javax.swing.JFrame;

**import** javax.swing.JPanel;

**public** **class** YearlyBalanceCalculatorFrame **extends** JFrame {

YearlyBalanceCalculatorFrame(){

setTitle("SavingsCalculator");

setSize(260, 400);

centerWindow(**this**);

setDefaultCloseOperation(JFrame.*EXIT\_ON\_CLOSE*);

SavingAccount sa = **new** SavingAccount();

JPanel c = **new** YearlyBalanceCalculatorPanel(sa);

**this**.add(c);

}

**private** **void** centerWindow(Window w) {

Toolkit tk = Toolkit.*getDefaultToolkit*();

Dimension d = tk.getScreenSize();

setLocation((d.width - w.getWidth()) / 2, (d.height - w.getHeight()) / 2);

}

}

import java.awt.BorderLayout;

import java.awt.FlowLayout;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.text.DecimalFormat;

import javax.swing.AbstractButton;

import javax.swing.BoxLayout;

import javax.swing.JButton;

import javax.swing.JLabel;

import javax.swing.JPanel;

import javax.swing.JScrollPane;

import javax.swing.JTextArea;

import javax.swing.JTextField;

import javax.swing.ScrollPaneConstants;

public class YearlyBalanceCalculatorPanel extends JPanel implements ActionListener{

private JLabel initBalanceLabel, anualRateLabel, numberYearsLabel;

private JTextField initBalanceField, anualRateField, numberYearsField;

private JButton calculateButton;

private SavingAccount sa;

private JTextArea balanceArea;

YearlyBalanceCalculatorPanel(SavingAccount s){

sa = s;

initBalanceLabel = new JLabel("Initial Balance");

this.add(initBalanceLabel, BorderLayout.WEST);

initBalanceField = new JTextField(9);

this.add(initBalanceField, BorderLayout.EAST);

anualRateLabel = new JLabel("Anual Rate");

this.add(anualRateLabel, BorderLayout.WEST);

anualRateField = new JTextField(9);

this.add(anualRateField, BorderLayout.EAST);

numberYearsLabel = new JLabel("Number of Years");

this.add(numberYearsLabel, BorderLayout.WEST);

numberYearsField = new JTextField(9);

this.add(numberYearsField, BorderLayout.EAST);

JPanel calcPanel = new JPanel();

calcPanel.setLayout(new FlowLayout(FlowLayout.CENTER));

calculateButton = new JButton("Calculate");

calcPanel.add(calculateButton);

calculateButton.addActionListener(this);

balanceArea = new JTextArea(10,8);

balanceArea.setLineWrap(true);

balanceArea.setWrapStyleWord(true);

JScrollPane balanceScroll = new JScrollPane(balanceArea,

ScrollPaneConstants.VERTICAL\_SCROLLBAR\_ALWAYS,

ScrollPaneConstants.HORIZONTAL\_SCROLLBAR\_NEVER);

calcPanel.add(balanceScroll);

this.setLayout(new FlowLayout(FlowLayout.CENTER));

this.add(calcPanel);

}

@Override

public void actionPerformed(ActionEvent e) {

Object o = e.getSource();

if (o == calculateButton){

double initBalance = Double.parseDouble(initBalanceField.getText());

double anualRate = Double.parseDouble(anualRateField.getText());

double numberYears = Double.parseDouble(numberYearsField.getText());

for (int year = 1; year < numberYears; year++){

double balance = sa.yearlyBalance(initBalance, anualRate);

DecimalFormat df = new DecimalFormat("#,###,###,##0.00");

String bal = df.format(balance);

balanceArea.append("$" + bal + "\n");

initBalance = balance;

}

}

}

}

