**DECLARE** frameMain, frameDebitCard,frameWithdraw,frameCreditCard,frameCancelCreditCard,

frameCreditlimit as a JFrame

**DECLARE** panelDebitCard, panelWithdraw, panelCreditCard,panelCancelCreditCard, panelCreditlimit as JPanel

**DECLARE** panelcolor, textfieldcolor, lightBlue, Montecarlo, darkgreen, lightgreen, lightRed, DarkBlue as Color

**DECLARE** buttonDebitCard,buttonClearDebitCard,buttonDisplayDebitCard,buttonWithdraw

,buttonBackDebitCard,buttonBackWithdraw,buttonAddDebitCard,buttonWithdrawalAmount, buttonClearWithdraw,buttonAddCreditCard,buttonCreditCard,buttonClearCreditCard, buttonDisplayCreditCard,buttonBackCreditlimit,buttonBackCreditCard,buttonBackCancelCreditCard, buttonCancelCreditCard,buttonCancelCredit,buttonSetCreditLimit,buttonCreditLimit as JButton

**DECLARE** textfieldIssuerBank, textfieldClientName,textfieldBankAccount,textfieldBalanceAmount,

textfieldCardId, textfieldWithdrawCardId, textfieldWithdrawalAmount, textfieldIssuerBankCreditCard, textfieldClientNameCreditCard,textfieldBankAccountCreditCard,textfieldSetCreditlimit,textfieldGracePeriod,textfieldCardIdCreditCard,textfieldBalanceAmountCreditCard,textfieldCVCNumber,textfieldInterestRate,textfieldCancelCreditCardId,textfieldCreditlimitCardId,textfieldCreditlimit as JTextfield

**DECLARE** textfieldPIN , textfieldWithdrawPIN as JPasswordField

**DECLARE** instance variablebalanceAmount ,cardID, PINNumber, balanceAmountCreditCard, cardIDCreditCard, CVCNumber, cardIdWithdraw ,PINNumberWithdraw, withdrawAmount, PINNumberCreditCard, cardIdCancelCreditCard, cardIdSetCreditlimit, gracePeriod as int

**DECLARE** instance variable InterestRate, creditlimit as double

**CREATE** a constructor of BankingGUI

**DO**

**DECLARE** frameMain as JFrame object

**SET** background color of frameMain to gray color

**DECLARE** labelheading1 as JLabel ("sajin bank") object

**SET** the size and position of labelheading1

**SET** the font style, font size and font family of a label heading1 to Century Gothic, bold, size 60

**SET** font color of labelheading1 to Black

**ADD** labelheading1 to frameMain

**DECLARE** label heading as JLabel ("Our Services") object

**SET** the size and position of a labelheading

**SET** the font style, font size and font family of a labelheading to Century Gothic, bold, size 30

**SET** font color of labelheading as black

**ADD** label heading to frameMain

**DECLARE** buttonDebitCard as a JButton(“Debit Card”) object

**SET** size and position of buttonDebitCard

**SET** font style, font size, and font family of buttonDebitCard to Century Gothic, bold, size 19

**SET** font color of buttonDebitCard to black

**SET** background color of buttonDebitCard

**ADD** actionlistener to buttonDebitCard

**ADD** buttonDebitCard to frameMain

**DECLARE** buttonCreditCard as a JButton object

**SET** size and position of buttonCreditCard

**SET** font style, font size, and font family of buttonCreditCard to Century Gothic, bold, size 19

**SET** font color of buttonCreditCard to black

**SET** background color of buttonCreditCard

**ADD** actionlistener to buttonCreditCard

**ADD** buttonCreditCard to frameMain

**SET** position and size of frameMain

**SET** layout of frameMain to null

**SET** visibility of a frameMain to true

**SET** default close operation to frameMain

**END DO**

**CREATE** method actionPerformed with no return type

**DO**

**IF** source of the ActionEvent is equal to buttonDebitCard **OR** buttonBackWithdraw

**CALL** debutCardGUI() method

**SET** Visibility of frameMain to false

**SET** Visibility of frameDebitCard to true

**SET** Visibility of frameWithdraw to false

**END IF**

**ELSE IF** source of ActionEvent is equal to buttonBackDebitCard OR buttonBackCreditlimit

**SET** visibility of frameMain to true

**SET** visibility of frameDebitCard to false

**SET** visibility of frameCreditCard to false

**END ELSE IF**

**ELSE IF** source of ActionEvent equal to buttonBackCancelCreditCard

**OR** buttonBackCancelCreditCard

**SET** visibility of frameCreditCard to true

**SET** visibility of frameCancelCreditCard to fase

**SET** visibility of frameCreditlimit to false

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonWithdraw

**CALL** withdrawGUI() method

**SET** visibility of frame main to false

**SET** visibility of frameDebitCard to false

**SET** visibility of frameWithdraw to true

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonClearDebitCard

**CALL** ClearDebitCard() method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonClearCreditCard

**CALL** ClearCreditCard() method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonSetCreditLimit

**CALL** setCreditLimitGUI() method

**SET** visibility of frameCreditlimit to true

**SET** visibility of frameMain to false

**SET** visibility of frameCreditCard to false

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonClearWithdraw

**SET** value of textfieldWithdrawCardId to empty

**SET** value of textfieldWithdrawalAmount to empty

**SET** value of textfieldWithdrawPIN to empty

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonCreditCard

**CALL** creditcardGUI () method

**SET** visibility of frameMain to false

**SET** visibility of frameCreditCard to true

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonAddDebitCard

**CALL** UserInputDebitCard() method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonCancelCredit

**CALL** cancelcreditcardGUI() method

**SET** visibility of frameMain to false

**SET** visibility of frameCreditCard to false

**SET** visibility of frameCancelCreditCard to true

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonDisplayDebitCard

**CALL** displayDebitCard() method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonAddCreditCard

**CALL** userInputCreditCard () method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonDisplayCreditCard

**CALL** displayCreditCard()method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonWithdrawalAmount

**CALL** userInputWithdrawAmount() method

**END ELSE IF**

**ELSE IF** source of ActionEvent is equal to buttonCancelCreditCard

**CALL** userInputSetCreditLimit() method

**END ELSE IF**

**END DO**

**CREATE** debitCardGUI() method with no return type

**DO**

**DECLARE** frameDebitCard as object of JFrame

**SET** background color of rameDebitCard to gray

**DECLARE** panelDebitCard as object of JPanel

**SET** size and position of panelDebitCard

**SET** panelcolor as object of Color

**SET** layout of panelDebitCard to null

**DECLARE** labelheading as a new object of JLabel ("Sajin Bank")

**SET** size and position of labelheading

**SET** font style of label headingCentury Gothic, Bold, size 60

**SET** color of labelheading to Black

**ADD** labelheading to frameDebitCard

**DECLARE** labelheading1 as a new object of JLabel(“Debit Card”)

**SET** size and position of labelheading1

**SET** font of label heading1 Century Gothic, Bold, size 30

**SET** color of labelheading1 to Black

**ADD** labelheading1 to frameDebitCard

**DECLARE** labelClientName as a new object of JLabel(“Client Name”)

**SET** size and position of a labelClientName

**SET** font of labelClientName Century Gothic, Bold, size 17

**SET** font color of labelClientNameto Black

**ADD** labelClientName to panelDebitCard

**DECLARE** labelBankAccount as a new object of JLabel(“Bank Account”)

**SET** size and position of a labelBankAccount

**SET** font of labelBankAccount to Century Gothic, Bold, size 17

**SET** font color of labelBankAccount to Black

**ADD** labelBankAccount to panelDebitCard

**DECLARE** labelBalanceAmount as a new object of JLabel(“Balance Amount”)

**SET** size and position of a labelBalanceAmount

**SET** font labelBalanceAmount to Century Gothic, Bold, size 17

**SET** font color of labelBalanceAmount to Black

**ADD** labelBalanceAmount to panelDebitCard

**DECLARE** labelIssuerBankas a new object of JLabel(“Issuer Bank”)

**SET** size and position of a labelIssuerBank

**SET** font of labelIssuerBank to Century Gothic, Bold, size 17

**SET** font color of labelIssuerBank to Black

**ADD** labelIssuerBank to panelDebitCard

**DECLARE** labelCardId as a new object of JLabel(“Card ID ”)

**SET** size and position of a labelCardId

**SET** font of labelCardId to Century Gothic, Bold, size 17

**SET** font color of labelCardId to Black

**ADD** labelCardId to panelDebitCard

**DECLARE** labelPIN as a new object of JLabel(“PIN Number ”)

**SET** size and position of a labelPIN

**SET** font of labelPIN to Century Gothic, Bold, size 17

**SET** font color of labelPIN to Black

**ADD** labelPIN to panelDebitCard

**DECLARE** textfieldcolor as new object of Color

**DECLARE** textfieldClientName as new object of JTextField()

**SET** size and position of a textfieldClientName

**SET** background color of textfieldClientName

**SET** font of textfieldClientName to Century Gothic, Bold, size 14

**ADD** textfieldClientName to panelDebitCard

**DECLARE** textfieldIssuerBank as new object of JTextField()

**SET** size and position of a textfieldIssuerBank

**SET** background color of textfieldIssuerBank

**SET** font of textfieldIssuerBank to Century Gothic, Bold, size 14

**ADD** textfieldIssuerBank to panelDebitCard

**DECLARE** textfieldBankAccount as new object of JTextField()

**SET** size and position of a textfieldBankAccount

**SET** background color of textfieldBankAccount

**SET** font of textfieldBankAccount to Century Gothic, Bold, size 14

**ADD** textfieldBankAccount to panelDebitCard

**DECLARE** textfieldBalanceAmount as new object of JTextField()

**SET** size and position of a textfieldBalanceAmount

**SET** background color of textfieldBalanceAmount

**SET** font of textfieldBalanceAmount to Century Gothic, Bold, size 14

**ADD** textfieldBalanceAmountto panelDebitCard

**DECLARE** textfieldCardId as new object of JTextField()

**SET** size and position of a textfieldCardId

**SET** background color of textfieldCardId

**SET** font of textfieldCardId to Century Gothic, Bold, size 14

**ADD** textfieldCardId to panelDebitCard

**DECLARE** textfieldPIN as new object of JPasswordField()

**SET** size and position of a textfieldPIN

**SET** background color of textfieldPIN

**SET** font of textfieldPIN to Century Gothic, Bold, size 14

**ADD** textfieldPIN to panelDebitCard

**DECLARE** lightBlue as a new object of Color

**DECLARE** buttonAddDebitCard as a new object of JButton(“Add Debit Card”)

**SET** size and position of buttonAddDebitCard

**SET** font of buttonAddDebitCard to Century Gothic, Bold, size 17

**SET** font color of buttonAddDebitCard to black

**SET** background color of buttonAddDebitCard to lightblue

**ADD** ActionListener to buttonAddDebitCard

**SET** Focus ability of buttonAddDebitCard to false

**ADD** buttonAddDebitCard to panelDebitCard

**DECLARE** darkgreen as a new object of Color

**DECLARE** buttonClearDebitCard as a new object of JButton(“Clear”)

**SET** size and position of buttonClearDebitCard

**SET** font of buttonClearDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonClearDebitCard to black

**SET** background color of buttonClearDebitCard to darkgreen

**ADD** ActionListener to buttonClearDebitCard

**SET** Focus ability of buttonClearDebitCard to false

**ADD** buttonClearDebitCard to panelDebitCard

**DECLARE** lightgreen as a new object of Color

**DECLARE** buttonDisplayDebitCard as a new object of JButton(“Display”)

**SET** size and position of buttonDisplayDebitCard

**SET** font of buttonDisplayDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonDisplayDebitCard to black

**SET** background color of buttonDisplayDebitCardto lightgreen

**ADD** ActionListener to buttonDisplayDebitCard

**SET** Focus ability buttonDisplayDebitCard to false

**ADD** buttonDisplayDebitCard to panelDebitCard

**DECLARE** Montecarlo as a new object of Color

**DECLARE** buttonWithdraw as a new object of JButton(“Withdraw Amount”)

**SET** size and position of buttonWithdraw

**SET** font of buttonWithdraw to Century Gothic, Bold, size 17

**SET** font color of buttonWithdraw to black

**SET** background color of buttonWithdraw to Montecarlo

**ADD** ActionListener to buttonWithdraw

**SET** Focus ability buttonWithdraw to false

**ADD** buttonWithdraw to panelDebitCard

**DECLARE** lightRed as a new object of Color

**DECLARE** buttonBackDebitCard as a new object of JButton(“Back”)

**SET** size and position of buttonBackDebitCard

**SET** font of buttonBackDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonBackDebitCard to black

**SET** background color of buttonBackDebitCard to lightRed

**ADD** ActionListener to buttonBackDebitCard

**SET** Focus ability buttonBackDebitCard to false

**ADD** buttonBackDebitCard to panelDebitCard

**ADD** panelDebitCard to frameDebitCard

**SET** size and position of frameDebitCard

**SET** layout of frameDebitCard to null

**SET** visibility of frameDebitCard to false

**SET** default close operation to frameDebitCard

**CREATE** ClearCreditCard() method with not return type

**DO**

**SET** text of textfieldClientNameCreditCard to empty

**SET** text of textfieldIssuerBankCreditCard to empty

**SET** text of textfieldBankAccountCreditCard to empty

**SET** text of textfieldCVCNumber to empty

**SET** text of textfieldCardIdCreditCard to empty

**SET** text of textfieldInterestRate to empty

**SET** text of textfieldBalanceAmountCreditCard to empty

**END DO**

**CREATE** ClearDebitCard() method with not return type

**DO**

**SET** text of textfieldClientName to empty

**SET** text of textfieldIssuerBank to empty

**SET** text of textfieldBankAccount to empty

**SET** text of textfieldBalanceAmount to empty

**SET** text of textfieldCardId to empty

**SET** text of textfieldPIN to empty

**END DO**

**CREATE** UserInputDebitCard() method with no return type

**DO**

**DECLARE** issuerBank as String type and **GET** text from textfieldIssuerBank

**DECLARE** clientName as String type and **GET** text from textfieldClientName

**DECLARE** bankAccount as String type and **GET** text from textfieldBankAccount

**IF** textfieldBalanceAmount .getText() is empty **OR** textfieldPIN .getText() is empty **OR** textfieldCardId .getText() is empty **OR** issuerBank is empty **OR** clientName is empty **OR** bankAccount is empty

**DISPLAY** please enter all the information on dialogbox

**END IF**

**ELSE**

**TRY**

**GET** text from textfieldBalanceAmount and convert it to integer and **ASSIGN** it to balanceAmount variable of type int

**GET** text from textfieldPIN and convert it to integer and **ASSIGN** it to PINNumber variable of type int

**GET** text from textfieldCardId and convert it to integer and **ASSIGN** it to cardID variable of type int

**CATCH** NumberFormatException

**DISPLAY** Incorrect Format in dialogbox

**END ELSE**

**FOR EACH** object Bankcard card in Bankcard Arraylist

**DO**

**IF** card is instance of Debitcard object **THEN**

**IF** cardID is equal to card\_Id of Debitcard object

**DISPLAY** ERROR, Card ID already exist in dialog box

**END IF**

**END IF**

**END DO**

**END FOR EACH**

**ADD** new Debitcard object with a parameter balanceAmount, cardID, bankAccount, IssuerBank, clientName, PINNumber to BankcardArraylist

**DISPLAY** Debitcard added successfully in dialog box

**END DO**

**CREATE** displayDebitCard() method with no return type

**DO**

**FOR EACH object Bankcard card in BankcardArraylist**

**DO**

**CREATE** Debitcard object variable debit by casting Bankcard object variable card

**DISPLAY** DebitCardDetail in dialogbox

**CALL** display() method of debit object

**END DO**

**CREATE** withdrawGUI() method with no return type

**DO**

**DECLARE** frameWithdraw as object of JFrame(“Withdraw Amount”)

**SET** background color of frameWithdraw to gray

**DECLARE** panelWithdraw as object of JPanel

**SET** size and position of panelWithdraw

**SET** background color of panelWithdraw to panelcolor

**SET** layout of panelWithdraw to null

**DECLARE** labelheading as a new object of JLabel ("Withdraw Amount ")

**SET** size and position of labelheading

**SET** font style of label heading to Century Gothic, Bold, size 30

**SET** color of labelheading to Black

**ADD** labelheading to frameWithdraw

**DECLARE** labelWithdrawCardId as a new object of JLabel(“Card ID ”)

**SET** size and position of a labelWithdrawCardId

**SET** font of labelWithdrawCardId Century Gothic, Bold, size 17

**SET** font color of labelWithdrawCardIdto Black

**ADD** labelWithdrawCardId to panelWithdraw

**DECLARE** labelWithdrawPIN as a new object of JLabel(“PIN Number ”)

**SET** size and position of a labelWithdrawPIN

**SET** font of labelWithdrawPIN to Century Gothic, Bold, size 17

**SET** font color of labelWithdrawPIN to Black

**ADD** labelWithdrawPIN to panelWithdraw

**DECLARE** labelWithdrawalAmount as a new object of JLabel(“Withdrawal Amount ”)

**SET** size and position of a labelWithdrawalAmount

**SET** font labelWithdrawalAmount to Century Gothic, Bold, size 17

**SET** font color of labelWithdrawalAmount to Black

**ADD** labelWithdrawalAmount to panelWithdraw

**DECLARE** labelDateOfWithdrawal as a new object of JLabel(“Issuer Bank”)

**SET** size and position of a labelDateOfWithdrawal

**SET** font of labelDateOfWithdrawal to Century Gothic, Bold, size 17

**SET** font color of labelDateOfWithdrawal to Black

**ADD** labelDateOfWithdrawal to panelWithdraw

**DECLARE** textfieldcolor as new object of Color

**DECLARE** textfieldClientName as new object of JTextField()

**SET** size and position of a textfieldClientName

**SET** background color of textfieldClientName

**SET** font of textfieldClientName to Century Gothic, Bold, size 14

**ADD** textfieldClientName to panelDebitCard

**DECLARE** textfieldIssuerBank as new object of JTextField()

**SET** size and position of a textfieldIssuerBank

**SET** background color of textfieldIssuerBank

**SET** font of textfieldIssuerBank to Century Gothic, Bold, size 14

**ADD** textfieldIssuerBank to panelDebitCard

**DECLARE** textfieldBankAccount as new object of JTextField()

**SET** size and position of a textfieldBankAccount

**SET** background color of textfieldBankAccount

**SET** font of textfieldBankAccount to Century Gothic, Bold, size 14

**ADD** textfieldBankAccount to panelDebitCard

**DECLARE** textfieldBalanceAmount as new object of JTextField()

**SET** size and position of a textfieldBalanceAmount

**SET** background color of textfieldBalanceAmount

**SET** font of textfieldBalanceAmount to Century Gothic, Bold, size 14

**ADD** textfieldBalanceAmountto panelDebitCard

**DECLARE** textfieldCardId as new object of JTextField()

**SET** size and position of a textfieldCardId

**SET** background color of textfieldCardId

**SET** font of textfieldCardId to Century Gothic, Bold, size 14

**ADD** textfieldCardId to panelDebitCard

**DECLARE** textfieldPIN as new object of JPasswordField()

**SET** size and position of a textfieldPIN

**SET** background color of textfieldPIN

**SET** font of textfieldPIN to Century Gothic, Bold, size 14

**ADD** textfieldPIN to panelDebitCard

**DECLARE** lightBlue as a new object of Color

**DECLARE** buttonAddDebitCard as a new object of JButton(“Add Debit Card”)

**SET** size and position of buttonAddDebitCard

**SET** font of buttonAddDebitCard to Century Gothic, Bold, size 17

**SET** font color of buttonAddDebitCard to black

**SET** background color of buttonAddDebitCard to lightblue

**ADD** ActionListener to buttonAddDebitCard

**SET** Focus ability of buttonAddDebitCard to false

**ADD** buttonAddDebitCard to panelDebitCard

**DECLARE** darkgreen as a new object of Color

**DECLARE** buttonClearDebitCard as a new object of JButton(“Clear”)

**SET** size and position of buttonClearDebitCard

**SET** font of buttonClearDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonClearDebitCard to black

**SET** background color of buttonClearDebitCard to darkgreen

**ADD** ActionListener to buttonClearDebitCard

**SET** Focus ability of buttonClearDebitCard to false

**ADD** buttonClearDebitCard to panelDebitCard

**DECLARE** lightgreen as a new object of Color

**DECLARE** buttonDisplayDebitCard as a new object of JButton(“Display”)

**SET** size and position of buttonDisplayDebitCard

**SET** font of buttonDisplayDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonDisplayDebitCard to black

**SET** background color of buttonDisplayDebitCardto lightgreen

**ADD** ActionListener to buttonDisplayDebitCard

**SET** Focus ability buttonDisplayDebitCard to false

**ADD** buttonDisplayDebitCard to panelDebitCard

**DECLARE** Montecarlo as a new object of Color

**DECLARE** buttonWithdraw as a new object of JButton(“Withdraw Amount”)

**SET** size and position of buttonWithdraw

**SET** font of buttonWithdraw to Century Gothic, Bold, size 17

**SET** font color of buttonWithdraw to black

**SET** background color of buttonWithdraw to Montecarlo

**ADD** ActionListener to buttonWithdraw

**SET** Focus ability buttonWithdraw to false

**ADD** buttonWithdraw to panelDebitCard

**DECLARE** lightRed as a new object of Color

**DECLARE** buttonBackDebitCard as a new object of JButton(“Back”)

**SET** size and position of buttonBackDebitCard

**SET** font of buttonBackDebitCard to Century Gothic, Bold, size 15

**SET** font color of buttonBackDebitCard to black

**SET** background color of buttonBackDebitCard to lightRed

**ADD** ActionListener to buttonBackDebitCard

**SET** Focus ability buttonBackDebitCard to false

**ADD** buttonBackDebitCard to panelDebitCard

**ADD** panelDebitCard to frameDebitCard

**SET** size and position of frameDebitCard

**SET** layout of frameDebitCard to null

**SET** visibility of frameDebitCard to false

**SET** default close operation to frameDebitCard