Mini Project Team Members
Project Title : Minipay – Mini Banking System Generation

S.no	Reg.No	Name
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Develop a mini-project for any application using Java

Title:

Minipay – Mini Banking System Generation

Abstract:

The provided JavaFX application, named "Minipay," is a simple implementation of a mini banking system. It consists of two scenes: an introductory scene with an image and a login scene with fields for username and password. After a brief delay, the application automatically transitions to the login scene. Upon entering valid credentials, the user is directed to a banking scene where they can deposit and withdraw funds. The balance is displayed and updated dynamically as transactions occur. While this application provides a basic framework for a banking system, it is important to consider security and additional features for a real-world application.

SourceCode:

```
import javafx.animation.KeyFrame;

import javafx.animation.Timeline;

import javafx.application.Application;

import javafx.geometry.Insets;

import javafx.scene.Scene;
import javafx.scene.control.*;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.layout.GridPane;
import javafx.scene.layout.StackPane;
import javafx.stage.Stage;
import javafx.util.Duration;
public class Minipay extends Application {
  private double balance = 0.0;
   private Label balanceLabel;

   public void start(Stage primaryStage) {
       primaryStage.setTitle("Mini Banking App");



       Image introImage = new Image("intro.PNG");
       ImageView introImageView = new ImageView(introImage);
       StackPane introPane = new StackPane();
       introPane.getChildren().add(introImageView);
       Scene introScene = new Scene(introPane, 750, 600);
       GridPane loginGrid = new GridPane();
       loginGrid.setPadding(new Insets(10));
```

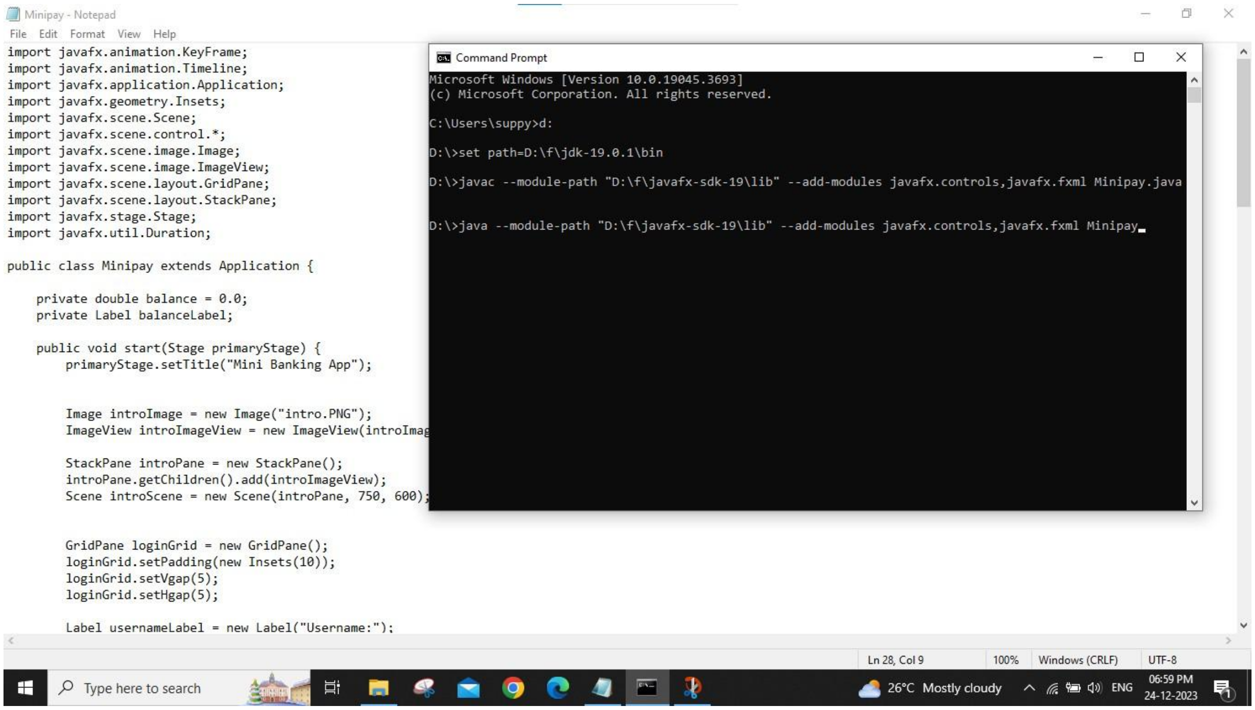
```
        loginGrid.setVgap(5);
        loginGrid.setHgap(5);

        Label usernameLabel = new Label("Username:");
        GridPane.setConstraints(usernameLabel, 0, 0);
        TextField usernameField = new TextField();
        GridPane.setConstraints(usernameField, 1, 0);

        Label passwordLabel = new Label("Password:");
        GridPane.setConstraints(passwordLabel, 0, 1);
        PasswordField passwordField = new PasswordField();
        GridPane.setConstraints(passwordField, 1, 1);

        Button loginButton = new Button("Login");
        GridPane.setConstraints(loginButton, 1, 2);

        Label errorLabel = new Label();
        GridPane.setConstraints(errorLabel, 1, 3);

        loginGrid.getChildren().addAll(usernameLabel, usernameField,
passwordLabel, passwordField, loginButton, errorLabel);
        Scene loginScene = new Scene(loginGrid, 750, 600);
```

```
    primaryStage.setScene(introScene);
    primaryStage.show();


    Timeline timeline = new Timeline(new KeyFrame(Duration.seconds(2), e -> {
        primaryStage.setScene(loginScene);
    }));
    timeline.play();
    loginButton.setOnAction(e -> {
        String username = usernameField.getText();
        String password = passwordField.getText();
        if (isValidUser(username, password)) {
            switchToBankingScene(primaryStage);
        } else {
            errorLabel.setText("Invalid username or password");
        }
    });
}
private boolean isValidUser(String username, String password) {
    return username.equals("admin") && password.equals("password");
}
private void switchToBankingScene(Stage primaryStage) {
    GridPane bankingGrid = new GridPane();
```

```
        bankingGrid.setPadding(new Insets(10));
        bankingGrid.setVgap(5);
        bankingGrid.setHgap(5);
        balanceLabel = new Label("Balance: ₹" + balance);
        GridPane.setConstraints(balanceLabel, 0, 0);

        TextField depositField = new TextField();
        depositField.setPromptText("Enter deposit amount");
        GridPane.setConstraints(depositField, 0, 1);
        Button depositButton = new Button("Deposit");
        depositButton.setOnAction(e -> 
deposit(Double.parseDouble(depositField.getText())));
        GridPane.setConstraints(depositButton, 1, 1);
        TextField withdrawalField = new TextField();
        withdrawalField.setPromptText("Enter withdrawal amount");
        GridPane.setConstraints(withdrawalField, 0, 2);
        Button withdrawalButton = new Button("Withdraw");
        withdrawalButton.setOnAction(e -> 
withdraw(Double.parseDouble(withdrawalField.getText())));

        GridPane.setConstraints(withdrawalButton, 1, 2);
        bankingGrid.getChildren().addAll(balanceLabel, depositField, depositButton, 
withdrawalField, withdrawalButton);
```

```
        Scene bankingScene = new Scene(bankingGrid, 750, 600);

        primaryStage.setScene(bankingScene);

    }

    private void deposit(double amount) {

        balance += amount;

        updateBalanceLabel();

    }

    private void withdraw(double amount) {

        if (amount <= balance) {

            balance -= amount;

            updateBalanceLabel();

        } else {

            System.out.println("Insufficient funds");

        }

    }

    private void updateBalanceLabel() {

        balanceLabel.setText("Balance: ₹" + balance);

    }

    public static void main(String[] args) {

        launch(args);

    }

}
```

Output Screenshot:



```java
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import javafx.animation.Timeline;
import javafx.application.Application;
import javafx.geometry.Insets;
import javafx.scene.Scene;
import javafx.scene.control.*;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.layout.GridPane;
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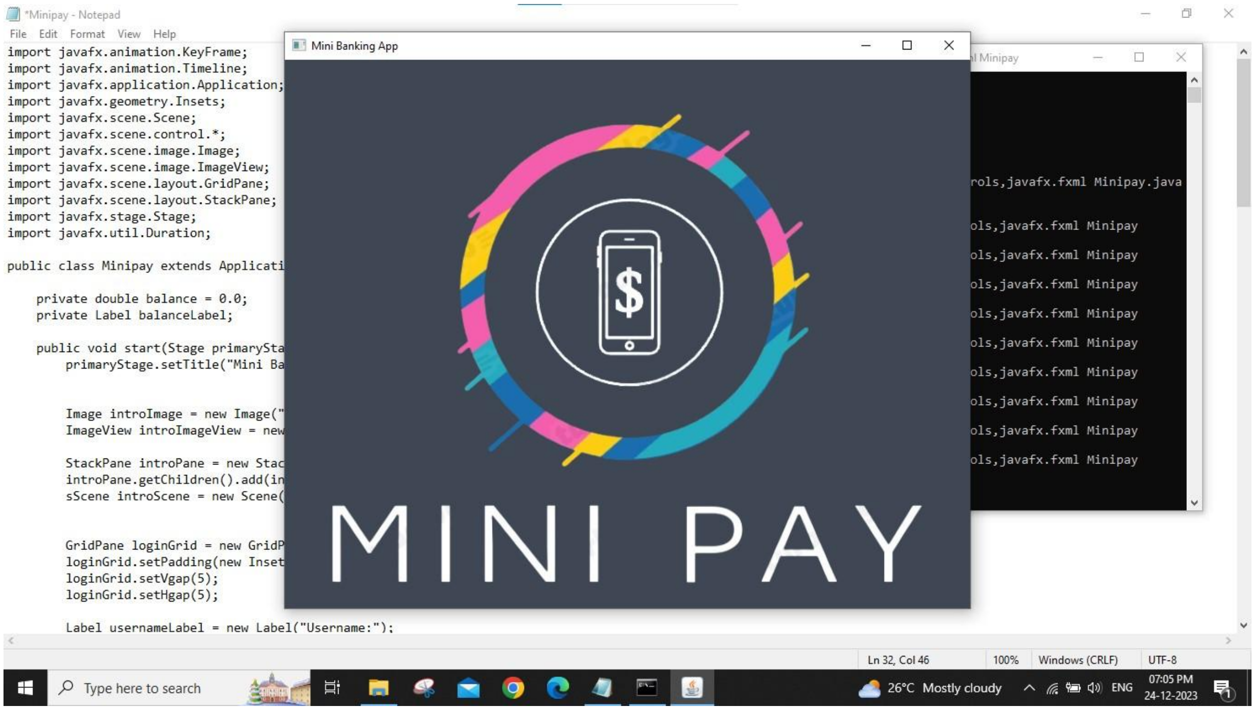
```
Microsoft Windows [Version 10.0.19045.3693]
(c) Microsoft Corporation. All rights reserved.

C:\Users\suppy>d:

D:\>set path=D:\f\jdk-19.0.1\bin

D:\>javac --module-path "D:\f\javafx-sdk-19\lib" --add-modules javafx.controls,javafx.fxml Minipay.java


D:\>java --module-path "D:\f\javafx-sdk-19\lib" --add-modules javafx.controls,javafx.fxml Minipay
```



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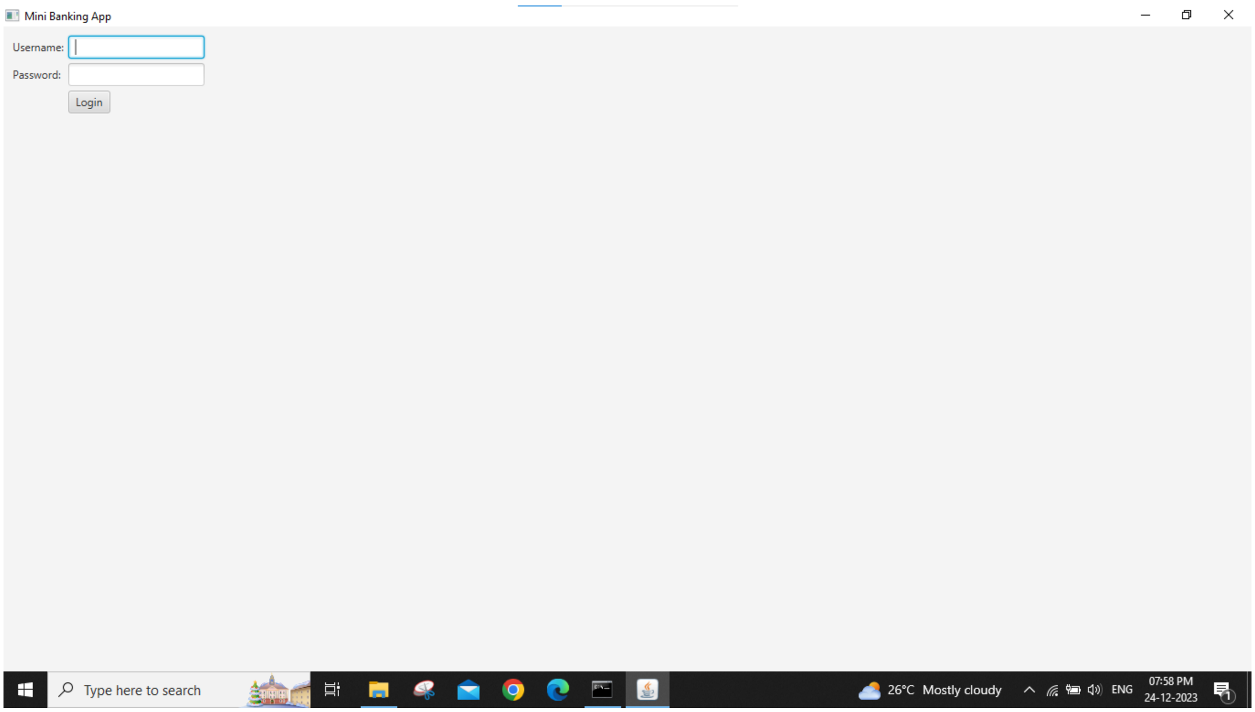
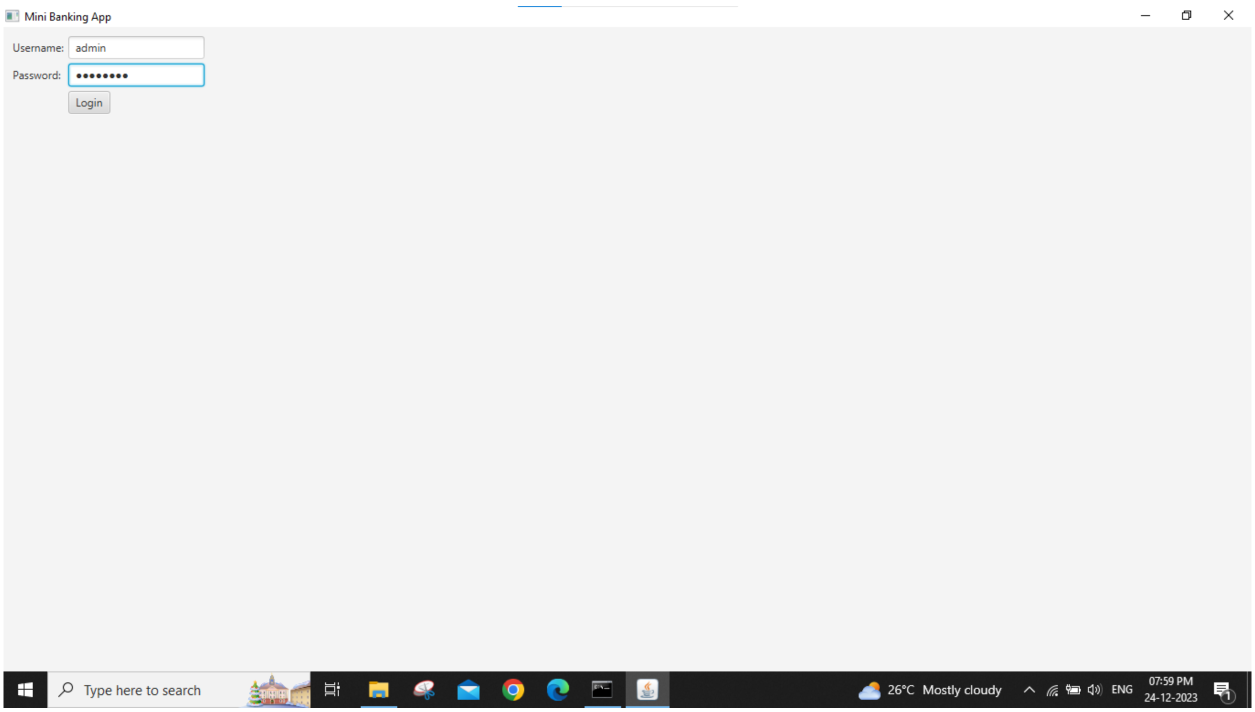


Mini Banking App

Username:

Password:

Login

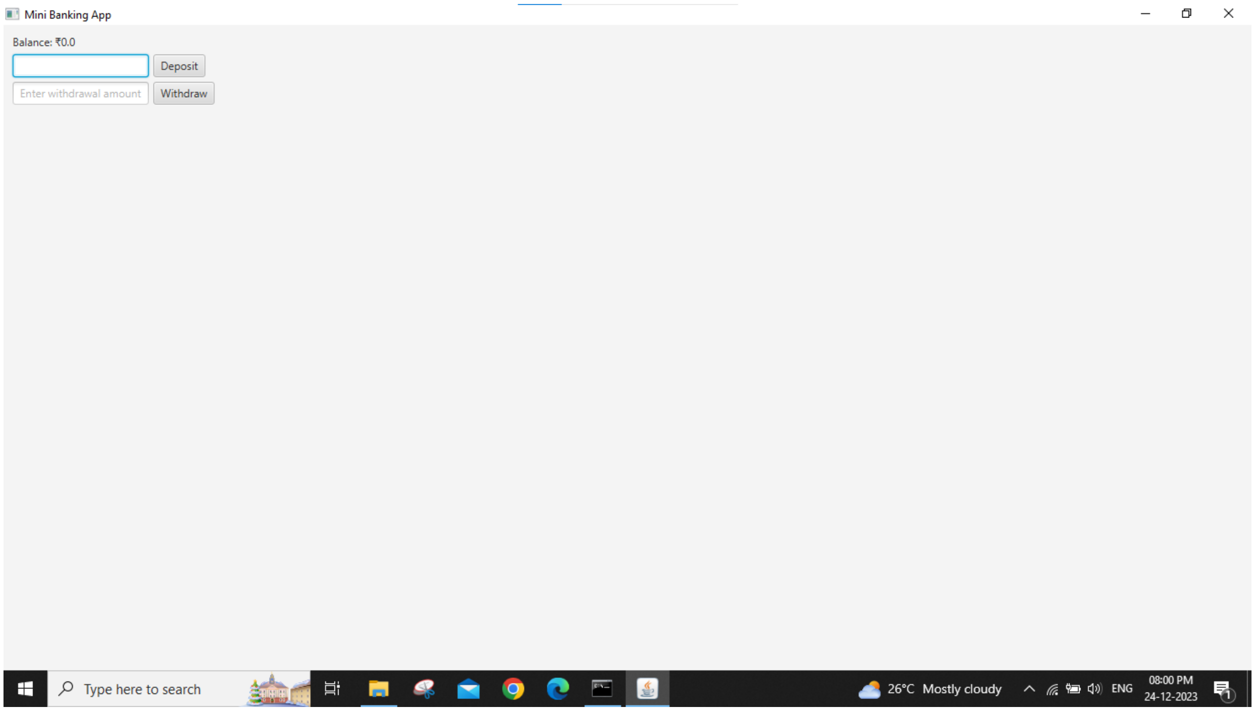


Mini Banking App

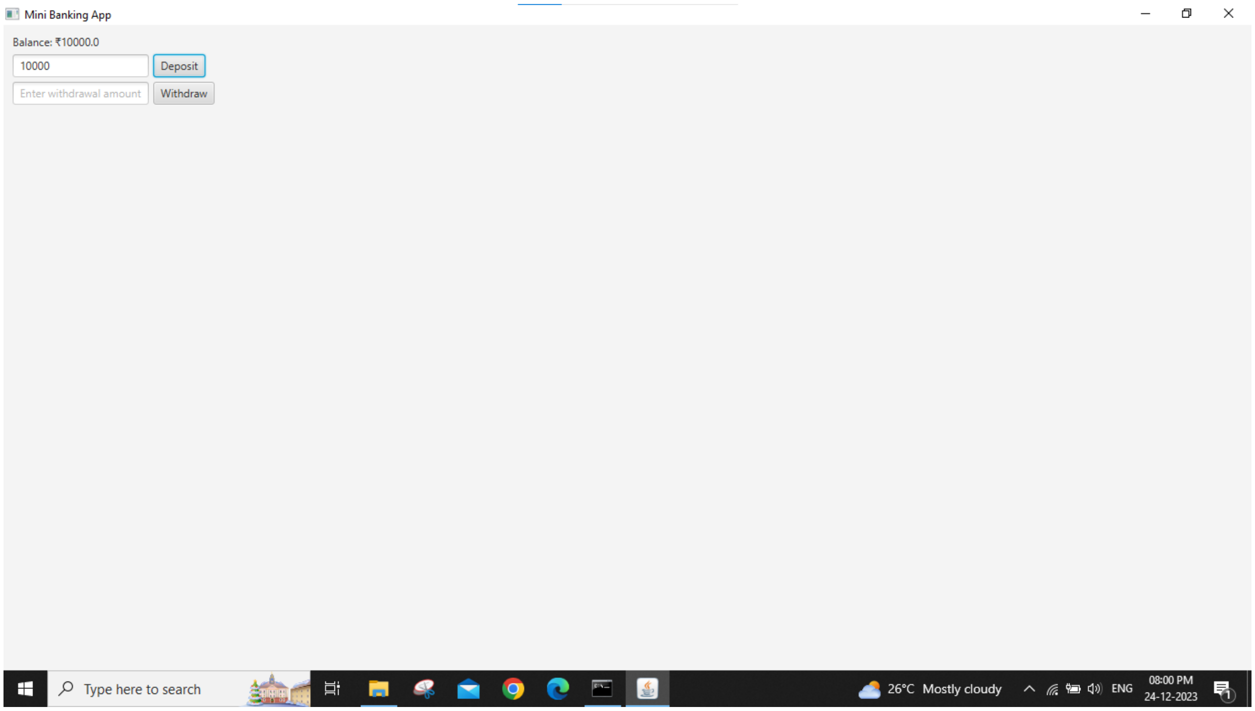
Username: admin

Password: ••••••••

Login

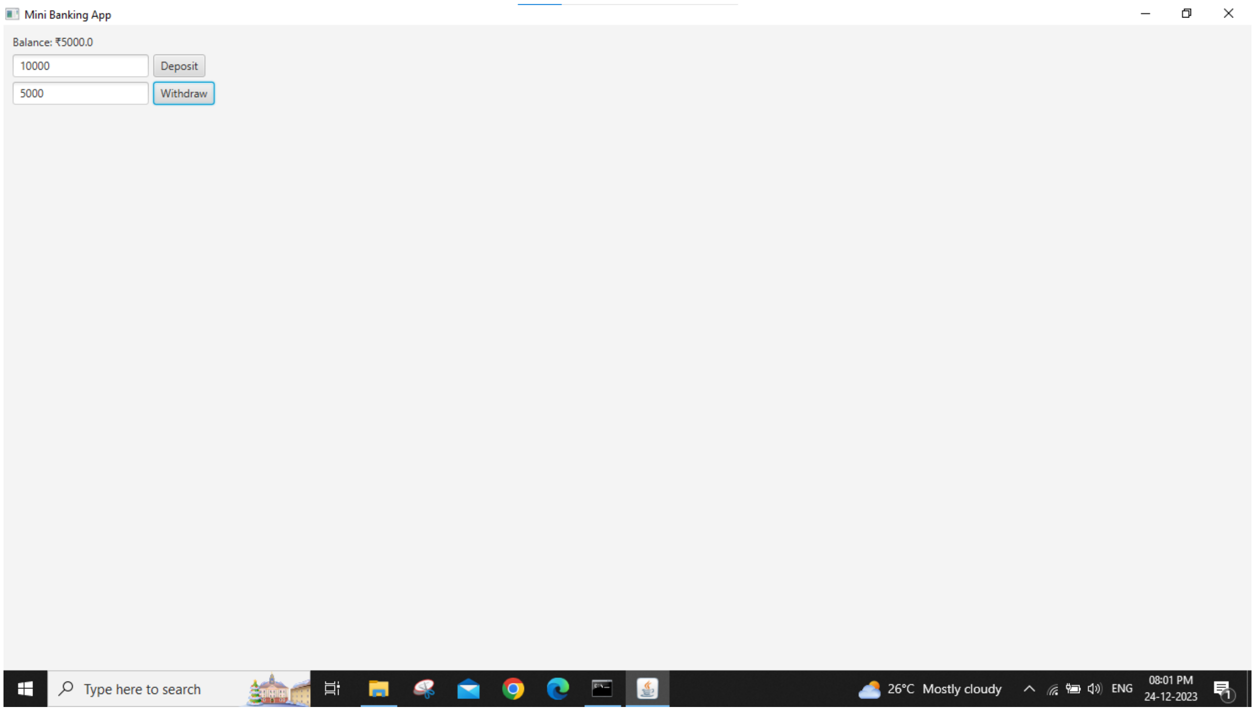


Balance: ₹0.0



Balance: ₹10000.0

10000



Mini Banking App

Balance: ₹5000.0

10000

5000

Conclusion:

The "Mini Banking App" is a JavaFX application that provides basic banking functionalities. It starts with an introductory image and then transitions to a login screen where users can enter their credentials. If the login is successful, the app switches to a banking screen displaying the current balance. Users can deposit or withdraw funds, with appropriate error handling for insufficient funds. While this app serves as a basic prototype, further enhancements could include improved user interface design, better error handling, and the addition of security features for a more robust and user-friendly experience.