Android ATM simulator

package com.example.androidatmapplication;

import androidx.annotation.Nullable;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.icu.text.NumberFormat;

import android.icu.util.Currency;

import android.os.Bundle;

import android.os.Handler;

import android.widget.TextView;

import android.widget.Toast;

import com.example.androidatmapplication.models.ATM;

import com.example.androidatmapplication.models.Bank;

import com.example.androidatmapplication.models.Customer;

public class Balance extends AppCompatActivity {

ATM atm = ATM.getInstance();

Bank bank = Bank.getInstance();

@Override

protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent data) {

super.onActivityResult(requestCode, resultCode, data);

if (resultCode == RESULT\_OK){

ATM.passwordTries--;

showBalance();

} else {finish();}}

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_balance);

showBalance(); }

void showBalance(){ if (bank.checkPin()){

Customer customer = Customer.getInstance();

TextView balanceTextView = findViewById(R.id.balance\_amount\_textview);

NumberFormat formatter = NumberFormat.getCurrencyInstance();

formatter.setCurrency(Currency.getInstance("NGN"));

balanceTextView.setText(formatter.format(customer.getAccountBalance()));

} else {

final Toast invalidPinToast = Toast.makeText(getApplicationContext(), getString(R.string.incorrect\_pin), Toast.LENGTH\_LONG);

invalidPinToast.show();

Intent pfragment = new Intent(Balance.this, PasswordFragment.class);

if (ATM.passwordTries > 0){

startActivityForResult(pfragment, 0);

} else {

Toast.makeText(getApplicationContext(), "Incorrect Pin. Card would be retained. Contact your bank for assistance.", Toast.LENGTH\_LONG).show();

Intent loginIntent = new Intent(Balance.this, MainActivity.class);

Customer.clearInstance();

startActivity(loginIntent);

finish(); }}}}

**Mainactivity.java**

package com.example.androidatmapplication;

import androidx.annotation.NonNull;

import androidx.annotation.Nullable;

import androidx.appcompat.app.AppCompatActivity;

import androidx.fragment.app.DialogFragment;

import android.app.AlertDialog;

import android.app.Dialog;

import android.content.DialogInterface;

import android.content.Intent;

import android.os.Bundle;

import android.util.Log;

import android.view.LayoutInflater;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import com.example.androidatmapplication.models.ATM;

import com.example.androidatmapplication.models.Customer;

import java.util.ArrayList;

import java.util.Random;

public class MainActivity extends AppCompatActivity {

static ArrayList<Customer> customers = new ArrayList<>();

static Customer customer;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

customers.add(Customer.init("Angela Franklin", generateAmount(), "1893829301", "9903"));

customers.add(Customer.init("Ayo Emmanuel", generateAmount(), "3872819203", "3285"));

Button insertButton = findViewById(R.id.insert\_card\_button);

insertButton.setOnClickListener(new View.OnClickListener() {

.setItems(getResources().getStringArray(R.array.cardnumbers), new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) {

String selectedNum = getResources().getStringArray(R.array.cardnumbers)[i];

Log.v("MainActivity", "Selected number " + selectedNum);

for (int a = 0; a < customers.size(); a++){

switch (selectedNum){

case "1893829301":

customer = Customer.init("Angela Franklin", generateAmount(), "1893829301", "9903");

break;

case "3872819203":

customer = Customer.init("Ayo Emmanuel", generateAmount(), "3872819203", "3285"); }}

if (customer != null){

Log.v("MainActivity", "Customer name: " + customer.getName());

passwordDialogFragment passwordFragment = new passwordDialogFragment(); passwordFragment.show(getActivity().getSupportFragmentManager(), "password"); }}});

return builder.create();}

public static class passwordDialogFragment extends DialogFragment{

@NonNull

@Override

public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) {

AlertDialog.Builder builder = new AlertDialog.Builder(getActivity());

LayoutInflater layoutInflater = requireActivity().getLayoutInflater();

builder.setView(layoutInflater.inflate(R.layout.password\_dialog, null))

.setPositiveButton(R.string.enter, new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) {

final EditText password = getDialog().findViewById(R.id.password\_edittext);

ATM atm = ATM.init();

atm.setPin(password.getText().toString());

final Intent transactionsIntent = new Intent(getActivity().getApplicationContext(), Transactions.class);

startActivity(transactionsIntent); }})

.setNegativeButton(R.string.cancel, new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) {

dialogInterface.cancel(); }});

return builder.create(); }}}}

**PasswordFragment.java**

package com.example.androidatmapplication;

import androidx.annotation.NonNull;

import android.view.LayoutInflater;

import android.widget.EditText;

import com.example.androidatmapplication.models.ATM;

public class PasswordFragment extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_password\_fragment);

passwordDialogFragment passwordDialogFragment = new passwordDialogFragment();

passwordDialogFragment.show(getSupportFragmentManager(), "password");}

public static class passwordDialogFragment extends DialogFragment

@NonNull

@Override

public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) {

AlertDialog.Builder builder = new AlertDialog.Builder(getActivity());

@Override

public void onClick(DialogInterface dialogInterface, int i) {

final EditText password = getDialog().findViewById(R.id.password\_edittext);

ATM atm = ATM.getInstance();

atm.setPin(password.getText().toString());

getActivity().setResult(RESULT\_OK);

getActivity().finish(); }})

.setNegativeButton(R.string.cancel, new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) {

getActivity().setResult(RESULT\_CANCELED);

dialogInterface.cancel(); }});

return builder.create(); }

@Override

public void onStop() {

super.onStop(); }}}

**Receipt.java**

package com.example.androidatmapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

import com.example.androidatmapplication.models.ATM;

import com.example.androidatmapplication.models.Transaction;

public class Receipt extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_receipt);

Intent thisIntent = getIntent();

Transaction transaction = (Transaction) thisIntent.getSerializableExtra("transaction");

TextView dateTextView = findViewById(R.id.date\_textview);

TextView timeTextView = findViewById(R.id.time\_textview);

TextView locationTextView = findViewById(R.id.location\_textview);

TextView transactionTypeTextView = findViewById(R.id.transaction\_type\_textview);

TextView accountTextView = findViewById(R.id.account\_textview);

TextView amountTextView = findViewById(R.id.amount\_textview);

TextView balanceTextView = findViewById(R.id.available\_balance\_textview);

dateTextView.setText(transaction.getDate());

timeTextView.setText(transaction.getTime());

locationTextView.setText(transaction.getLocation());

transactionTypeTextView.setText(transaction.getTransactionType());

accountTextView.setText(transaction.getAccount());

amountTextView.setText(transaction.getAmount());

balanceTextView.setText(transaction.getAvailableBalance());

Button homeButton = findViewById(R.id.home\_button);

homeButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent transactionHome = new Intent(Receipt.this, Transactions.class);

startActivity(transactionHome); }});

ATM atm = ATM.getInstance();

atm.withdrawAmount = 0; }}

**Transactions.java**

package com.example.androidatmapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.app.ProgressDialog;

import android.content.Intent;

import android.os.Bundle;

import android.os.Handler;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

import com.example.androidatmapplication.models.ATM;

import com.example.androidatmapplication.models.Bank;

import com.example.androidatmapplication.models.Customer;

public class Transactions extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_transactions);

final ProgressDialog progressDialog = new ProgressDialog(this);

progressDialog.setMessage("Please Wait...");

progressDialog.show();

final Handler handler = new Handler();

handler.postDelayed(new Runnable() {

@Override

public void run() {

progressDialog.show();

progressDialog.dismiss(); }},1200);

withdrawButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent withdrawIntent = new Intent(Transactions.this, Withdraw.class);

startActivity(withdrawIntent); }});

checkBalanceButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent balanceIntent = new Intent(Transactions.this, Balance.class);

startActivity(balanceIntent); }});

removeCardButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent loginIntent = new Intent(Transactions.this, MainActivity.class);

Customer.clearInstance();

ATM.clearInstance();

startActivity(loginIntent);

finish(); }}); }}

**Withdraw.java**

package com.example.androidatmapplication;

import androidx.annotation.NonNull;

import androidx.annotation.Nullable;

import androidx.appcompat.app.AppCompatActivity;

import androidx.fragment.app.DialogFragment;

import android.os.PowerManager;

import android.view.LayoutInflater;

import android.view.View;

import android.widget.EditText;

import android.widget.Toast;

import com.example.androidatmapplication.fragments.OtherAmountDialogFragment;

import com.example.androidatmapplication.models.ATM;

import com.example.androidatmapplication.models.Bank;

import com.example.androidatmapplication.models.Customer;

import com.example.androidatmapplication.models.Transaction;

import java.io.Serializable;

import java.text.SimpleDateFormat;

import java.util.Date;

public class Withdraw extends AppCompatActivity implements OtherAmountDialogFragment.OtherAmountListener {

Customer customer = Customer.getInstance();

ATM atm = ATM.getInstance();

Bank bank = Bank.getInstance();

ProgressDialog progressDialog;

TransactionDialogFragment transactionDialogFragment = new TransactionDialogFragment();

static boolean transactionCancelled = false;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_withdraw);

progressDialog = new ProgressDialog(this); }

public void buttonClick(View view) {

int id = view.getId();

transactionCancelled = false;

if (id == R.id.button\_500) {

atm.withdrawAmount = 500;

} else if (id == R.id.button\_1000) {

atm.withdrawAmount = 1000;

} else if (id == R.id.button\_5000) {

atm.withdrawAmount = 5000;

} else if (id == R.id.button\_10000) {

atm.withdrawAmount = 10000;

} else if (id == R.id.button\_20000) {

atm.withdrawAmount = 20000;

} else if (id == R.id.button\_others){

OtherAmountDialogFragment otherAmountDialogFragment = new OtherAmountDialogFragment();

otherAmountDialogFragment.show(getSupportFragmentManager(), "others");

}

progressDialog.setMessage("Please Wait...");

progressDialog.setCancelable(false);

if (atm.withdrawAmount != 0){

performTransaction(); }}

@Override

protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent data) {

super.onActivityResult(requestCode, resultCode, data);

if (resultCode == RESULT\_OK) {

ATM.passwordTries--;

performTransaction();

} else {

transactionDialogFragment.dismiss(); }}

public void performTransaction() {

transactionDialogFragment.show(getSupportFragmentManager(), "transaction dialog");

final Handler handler = new Handler();

handler.postDelayed(new Runnable() {

@Override

public void run() {

if (!transactionCancelled) {

if (bank.checkPin()) {

String message = atm.performTransaction(atm.withdrawAmount);

Toast.makeText(getApplicationContext(), message + ".", Toast.LENGTH\_LONG).show();

if (message.toLowerCase().contains("successful")) {

String datePattern = "dd MMMM yyyy";

SimpleDateFormat dateFormat = new SimpleDateFormat(datePattern);

String date = dateFormat.format(new Date());

String timePattern = "hh:mm a";

SimpleDateFormat timeFormat = new SimpleDateFormat(timePattern);

String time = timeFormat.format(new Date());

String location = "Wuse Zone 4";

String transactionType = "Withdraw";

String account = "Savings";

NumberFormat formatter = NumberFormat.getCurrencyInstance();

formatter.setCurrency(Currency.getInstance("NGN"));

String amount = formatter.format(atm.withdrawAmount);

String availableBalance = formatter.format(customer.getAccountBalance());

Transaction transaction = new Transaction(customer, date, time, location,

handler.postDelayed(new Runnable() {

@Override

public void run() {

invalidPinToast.show();

transactionDialogFragment.dismiss();

Intent pfragment = new Intent(Withdraw.this, PasswordFragment.class);

if (ATM.passwordTries > 0) {

startActivityForResult(pfragment, 0);

} else {

Toast.makeText(getApplicationContext(), "Incorrect Pin. Card would be retained. Contact your bank for assistance.", Toast.LENGTH\_LONG).show();

Intent loginIntent = new Intent(Withdraw.this, MainActivity.class);

Customer.clearInstance();

startActivity(loginIntent);

finish(); }}},500); }}}},2500); }

@Override

public void OnOtherAmountSubmit(Double amount) {

atm.withdrawAmount = amount;

if (atm.canWithdrawOtherAmount()){

performTransaction();

} else {

Toast.makeText(getApplicationContext(), R.string.multiples\_error, Toast.LENGTH\_LONG).show();

atm.withdrawAmount = 0; }}

public static class TransactionDialogFragment extends DialogFragment {

@NonNull

@Override

public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) {

AlertDialog.Builder builder = new AlertDialog.Builder(getActivity());

LayoutInflater layoutInflater = requireActivity().getLayoutInflater();

builder.setView(layoutInflater.inflate(R.layout.transaction\_dialog, null))

.setNegativeButton(R.string.cancel, new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) {

dialogInterface.cancel();

transactionCancelled = true; }});

return builder.create(); }}}