TASK1:-

Number GAME

import java.util.Scanner;

public class NumberGuessingGame {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

int maxAttempts = 5;

int score = 0;

while (true) {

int randomNum = (int) (Math.random() \* 100) + 1;

int attempts = 0;

System.out.println("Let's play a number guessing game! I'm thinking of a number between 1 and 100.");

while (attempts < maxAttempts) {

System.out.print("Enter your guess: ");

int guess = scanner.nextInt();

attempts++;

if (guess == randomNum) {

System.out.println("Congratulations! You guessed the number in " + attempts + " attempts.");

score++;

break;

} else if (guess < randomNum) {

System.out.println("Your guess is too low.");

} else {

System.out.println("Your guess is too high.");

}

}

if (attempts == maxAttempts) {

System.out.println("Sorry, you ran out of attempts. The number was " + randomNum);

}

System.out.print("Do you want to play again? (yes/no): ");

String playAgain = scanner.next();

if (!playAgain.equalsIgnoreCase("yes")) {

break;

}

}

System.out.println("Your final score is: " + score);

scanner.close();

}

}

Output:-

1] Let's play a number guessing game! I'm thinking of a number between 1 and 100.

Enter your guess: 6

Your guess is too low.

Enter your guess: 67

Your guess is too low.

Enter your guess: 88

Your guess is too high.

Enter your guess: 77

Your guess is too high.

Enter your guess: 67

Your guess is too low.

Sorry, you ran out of attempts. The number was 70

Do you want to play again? (yes/no): 6

2] Let's play a number guessing game! I'm thinking of a number between 1 and 100.

Enter your guess: 70

Your guess is too high.

Enter your guess: 60

Your guess is too high.

Enter your guess: 50

Your guess is too high.

Enter your guess: 40

Your guess is too low.

Enter your guess: 45

Congratulations! You guessed the number in 5 attempts.

Sorry, you ran out of attempts. The number was 45

Do you want to play again? (yes/no):

TASK 2:-STUDENT GRADE CALCULATOT:-

import java.util.Scanner;

public class GradeCalculator {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the number of subjects: ");

int numSubjects = scanner.nextInt();

int[] marks = new int[numSubjects];

for (int i = 0; i < numSubjects; i++) {

System.out.print("Enter marks for subject " + (i + 1) + ": ");

marks[i] = scanner.nextInt();

}

int totalMarks = 0;

for (int mark : marks) {

totalMarks += mark;

}

double averagePercentage = (double) totalMarks / numSubjects;

char grade;

if (averagePercentage >= 90) {

grade = 'A';

} else if (averagePercentage >= 80) {

grade = 'B';

} else if (averagePercentage >= 70) {

grade = 'C';

} else if (averagePercentage >= 60) {

grade = 'D';

} else {

grade = 'F';

}

System.out.println("Total Marks: " + totalMarks);

System.out.println("Average Percentage: " + averagePercentage + "%");

System.out.println("Grade: " + grade);

scanner.close();

}

}

OUTPUT:-

Enter the number of subjects: 6

Enter marks for subject 1: 54

Enter marks for subject 2: 87

Enter marks for subject 3: 98

Enter marks for subject 4: 65

Enter marks for subject 5: 78

Enter marks for subject 6: 86

Total Marks: 468

Average Percentage: 78.0%

Grade: C

TASK NO:-3 ATM INTERFACE:-

import java.util.Scanner;

class ATM {

private BankAccount account;

public ATM(BankAccount account) {

this.account = account;

}

public void displayMenu() {

System.out.println("ATM Menu");

System.out.println("1. Withdraw");

System.out.println("2. Deposit");

System.out.println("3. Check Balance");

System.out.println("4. Exit");

}

public void withdraw(double amount) {

if (account.withdraw(amount)) {

System.out.println("Withdrawal successful.");

} else {

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

}

}

public void deposit(double amount) {

account.deposit(amount);

System.out.println("Deposit successful.");

}

public void checkBalance() {

System.out.println("Your current balance is: " + account.getBalance());

}

}

class BankAccount {

private double balance;

public BankAccount(double initialBalance) {

this.balance = initialBalance;

}

public double getBalance() {

return balance;

}

public boolean withdraw(double amount) {

if (amount <= balance) {

balance -= amount;

return true;

} else {

return false;

}

}

public void deposit(double amount) {

balance += amount;

}

}

public class ATMMain {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

BankAccount userAccount = new BankAccount(1000.0); // Initial balance

ATM atm = new ATM(userAccount);

int choice;

do {

atm.displayMenu();

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

switch (choice) {

case 1:

System.out.print("Enter withdrawal amount: ");

double withdrawalAmount = scanner.nextDouble();

atm.withdraw(withdrawalAmount);

break;

case 2:

System.out.print("Enter deposit amount: ");

double depositAmount = scanner.nextDouble();

atm.deposit(depositAmount);

break;

case 3:

atm.checkBalance();

break;

case 4:

System.out.println("Thank you for using the ATM.");

break;

default:

System.out.println("Invalid choice.");

}

} while (choice != 4);

scanner.close();

}

}

OUTPUT:-

ATM Menu

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 3

Your current balance is: 1000.0

ATM Menu

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 1

Enter withdrawal amount: 700

Withdrawal successful.

ATM Menu

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 1

Enter withdrawal amount: 400

Insufficient funds.

ATM Menu

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 2

Enter deposit amount: 3000

Deposit successful.

ATM Menu

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 4

Thank you for using the ATM.

TASK NO:-4 CURRENCY CONVERTER

import java.util.Scanner;

public class Main {

private static Scanner scanner = new Scanner(System.in);

public static void main(String[] args) {

int choice;

do {

displayCurrency();

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

switch (choice) {

case 1:

case 2:

case 3:

case 4:

double amount = getCurrency();

calculateCurrency(choice, amount);

break;

case 5:

System.out.println("\nExiting Currency Converter. Thank you!");

break;

default:

System.out.println("Invalid input please try again");

break;

}

} while (choice != 5);

scanner.close();

}

private static void displayCurrency() {

System.out.println("\nCurrency Converter");

System.out.println("1. US Dollar to Indian Rupees");

System.out.println("2. Indian Rupees to US Dollar");

System.out.println("3. European Euro to Indian Rupees");

System.out.println("4. Japanese Yen to Indian Rupees");

System.out.println("5. Exit");

}

private static double getCurrency() {

System.out.print("\nEnter amount to convert: ");

double amount = scanner.nextDouble();

return amount;

}

private static void calculateCurrency(int choice, double amount) {

switch (choice) {

case 1:

amount = amount \* 83.5; // Convert Dollar to Rupees

break;

case 2:

amount = amount \* 0.012; // Convert Rupees to Dollar

break;

case 3:

amount = amount \* 91.12; // Convert Euro to Rupees

break;

case 4:

amount = amount \* 0.58; // Convert Yen to Rupees

break;

}

System.out.println("Converted Amount : " + amount);

} }

OUTPUT:-

Currency Converter

1. US Dollar to Indian Rupees

2. Indian Rupees to US Dollar

3. European Euro to Indian Rupees

4. Japanese Yen to Indian Rupees

5. Exit

Enter your choice: 1

Enter amount to convert: 100

Converted Amount : 8350.0

TASK 5:-STUDENT MANAGEMENT SYSTEM:-

import java.util.ArrayList;

import java.util.Scanner;

class Student {

private String name;

private int rollNumber;

private char grade;

public Student(String name, int rollNumber, char grade) {

this.name = name;

this.rollNumber = rollNumber;

this.grade = grade;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public int getRollNumber() {

return rollNumber;

}

public void setRollNumber(int rollNumber) {

this.rollNumber = rollNumber;

}

public char getGrade() {

return grade;

}

public void setGrade(char grade) {

this.grade = grade;

}

@Override

public String toString() {

return "Name: " + name + ", Roll Number: " + rollNumber + ", Grade: " + grade;

}

}

class StudentManagementSystem {

private ArrayList<Student> students;

public StudentManagementSystem() {

students = new ArrayList<>();

}

public void addStudent(Student student) {

students.add(student);

}

public void removeStudent(int rollNumber) {

students.removeIf(student -> student.getRollNumber() == rollNumber);

}

public Student searchStudent(int rollNumber) {

for (Student student : students) {

if (student.getRollNumber() == rollNumber) {

return student;

}

}

return null;

}

public void displayAllStudents() {

for (Student student : students) {

System.out.println(student);

}

}

}

public class StudentManagementSystemUI {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

StudentManagementSystem sms = new StudentManagementSystem();

int choice;

do {

System.out.println("Student Management System");

System.out.println("1. Add Student");

System.out.println("2. Remove Student");

System.out.println("3. Search Student");

System.out.println("4. Display All Students");

System.out.println("5. Exit");

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

switch (choice) {

case 1:

System.out.print("Enter name: ");

String name = scanner.nextLine();

System.out.print("Enter roll number: ");

int rollNumber = scanner.nextInt();

System.out.print("Enter grade: ");

char grade = scanner.next().charAt(0);

sms.addStudent(new Student(name, rollNumber, grade));

break;

case 2:

System.out.print("Enter roll number to remove: ");

int rollToRemove = scanner.nextInt();

sms.removeStudent(rollToRemove);

break;

case 3:

System.out.print("Enter roll number to search: ");

int rollToSearch = scanner.nextInt();

Student foundStudent = sms.searchStudent(rollToSearch);

if (foundStudent != null) {

System.out.println(foundStudent);

} else {

System.out.println("Student not found.");

}

break;

case 4:

sms.displayAllStudents();

break;

case 5:

System.out.println("Exiting...");

break;

default:

System.out.println("Invalid choice.");

}

} while (choice != 5);

scanner.close();

}

}

OUTPUT:-

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 1

Enter name: Enter roll number: 1

Enter grade: A

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 2

Enter roll number to remove: 3

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 3

Enter roll number to search: 1

Name: , Roll Number: 1, Grade: A

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit