**Task-1:- Guessing the number**

**package** internship1;

**import** java.util.Random;

**import** java.util.Scanner;

**public** **class** java1 {

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

Scanner scanner = **new** Scanner(System.***in***);

Random random = **new** Random();

**int** minRange = 1;

**int** maxRange = 100;

**int** maxAttempts = 5;

**int** rounds = 0;

**int** score = 0;

System.***out***.println("Welcome to the Number Guessing Game!");

**do** {

**int** targetNumber = random.nextInt(maxRange - minRange + 1) + minRange;

**int** attempts = 0;

**boolean** guessedCorrectly = **false**;

System.***out***.println("\nRound " + (rounds + 1) + ": Guess the number between " + minRange + " and " + maxRange);

**while** (attempts < maxAttempts) {

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

**int** userGuess = scanner.nextInt();

attempts++;

**if** (userGuess == targetNumber) {

guessedCorrectly = **true**;

**break**;

} **else** **if** (userGuess < targetNumber) {

System.***out***.println("Too low! Try again.");

} **else** {

System.***out***.println("Too high! Try again.");

}

}

**if** (guessedCorrectly) {

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

score += maxAttempts - attempts + 1;

} **else** {

System.***out***.println("Sorry! You couldn't guess the number. The correct number was: " + targetNumber);

}

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

String playAgain = scanner.next().toLowerCase();

**if** (playAgain.equals("yes")) {

rounds++;

} **else** {

System.***out***.println("\nGame Over! Your total score is: " + score);

}

} **while** (rounds > 0);

scanner.close();

}

}

Output:

Welcome to the Number Guessing Game!

Round 1: Guess the number between 1 and 100

Enter your guess: 65

Too high! Try again.

Enter your guess: 23

Too low! Try again.

Enter your guess: 10

Too low! Try again.

Enter your guess: 100

Too high! Try again.

Enter your guess: 52

Too high! Try again.

Sorry! You could not guess the number. The correct number was: 46

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

**Task2:-Student grade calculator**

**package** internship1;

**import** java.util.Scanner;

**public** **class** java2 {

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

Scanner scanner = **new** Scanner(System.***in***);

// Constants for grade boundaries

**final** **double** A\_GRADE = 90.0;

**final** **double** B\_GRADE = 80.0;

**final** **double** C\_GRADE = 70.0;

**final** **double** D\_GRADE = 60.0;

System.***out***.println("Grade Calculator\n");

// Input: Take marks obtained in each subject

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

**int** numSubjects = scanner.nextInt();

**double** totalMarks = 0;

// Loop to input marks for each subject

**for** (**int** i = 1; i <= numSubjects; i++) {

System.***out***.print("Enter marks obtained in subject " + i + ": ");

**double** marks = scanner.nextDouble();

// Validate marks (assuming marks are out of 100)

**if** (marks < 0 || marks > 100) {

System.***out***.println("Invalid marks! Marks should be between 0 and 100.");

i--; // Decrement the loop counter to re-enter marks for the same subject

} **else** {

totalMarks += marks;

}

}

// Calculate Total Marks

System.***out***.println("\nTotal Marks: " + totalMarks);

// Calculate Average Percentage

**double** averagePercentage = totalMarks / numSubjects;

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

// Grade Calculation: Assign grades based on average percentage

**char** grade;

**if** (averagePercentage >= A\_GRADE) {

grade = 'A';

} **else** **if** (averagePercentage >= B\_GRADE) {

grade = 'B';

} **else** **if** (averagePercentage >= C\_GRADE) {

grade = 'C';

} **else** **if** (averagePercentage >= D\_GRADE) {

grade = 'D';

} **else** {

grade = 'F';

}

// Display Results

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

scanner.close();

}

}

Output:

Grade Calculator

Enter the number of subjects: 3

Enter marks obtained in subject 1: 20

Enter marks obtained in subject 2: 20

Enter marks obtained in subject 3: 100

Total Marks: 140.0

Average Percentage: 46.666666666666664%

Grade: F

**Task:-3 ATM Interface**

**package** intern1;

**import** java.util.Scanner;

**public** **class** java3 {

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

System.***out***.println("Welcome to the ATM Machine!");

Scanner scanner = **new** Scanner(System.***in***);

**double** balance = 1000.0; // Initial balance

**int** choice;

// Display menu

**do** {

System.***out***.println("\nOptions:");

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

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

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

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

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

// Validate user input

**while** (!scanner.hasNextInt()) {

System.***out***.println("Invalid input. Please enter a number.");

scanner.next(); // consume the invalid input

}

choice = scanner.nextInt();

// Process user choice

**switch** (choice) {

**case** 1:

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

**double** withdrawAmount = scanner.nextDouble();

**if** (withdrawAmount > 0 && withdrawAmount <= balance) {

balance -= withdrawAmount;

System.***out***.println("Withdrawal successful. New balance: " + balance);

} **else** {

System.***out***.println("Invalid withdrawal amount or insufficient funds.");

}

**break**;

**case** 2:

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

**double** depositAmount = scanner.nextDouble();

**if** (depositAmount > 0) {

balance += depositAmount;

System.***out***.println("Deposit successful. New balance: " + balance);

} **else** {

System.***out***.println("Invalid deposit amount.");

}

**break**;

**case** 3:

System.***out***.println("Current Balance: " + balance);

**break**;

**case** 4:

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

**break**;

**default**:

System.***out***.println("Invalid choice. Please enter a valid option.");

}

} **while** (choice != 4);

scanner.close();

}

}

Output:

Welcome to the ATM Machine!

Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 1

Enter withdrawal amount: 50000

Withdrawal successful. New balance: 50000.0

**TASK 4 :-CURRENCY CONVERTER:**

**package** intern1;

**import** java.util.Scanner;

**public** **class** java4 {

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

// Hardcoded conversion rate for simplicity

**double** conversionRate = 0.85; // 1 USD to EUR

Scanner scanner = **new** Scanner(System.***in***);

// Step 1: Currency Selection

System.***out***.print("Enter the amount in USD: ");

**double** amountUSD = scanner.nextDouble();

// Step 2: Currency Conversion

**double** amountEUR = *convertCurrency*(amountUSD, conversionRate);

// Step 3: Display Result

*displayResult*(amountUSD, "USD", amountEUR, "EUR");

scanner.close();

}

**private** **static** **double** convertCurrency(**double** amount, **double** conversionRate) {

**return** amount \* conversionRate;

}

**private** **static** **void** displayResult(**double** amount, String baseCurrency, **double** convertedAmount, String targetCurrency) {

System.***out***.println("\nConversion Result:");

System.***out***.printf("%.2f %s is equal to %.2f %s%n", amount, baseCurrency, convertedAmount, targetCurrency);

}

}

**Output: -**

Enter the amount in USD: 45000

Conversion Result:

45000.00 USD is equal to 38250.00 EU