1. **Java Program: Are you above 18 years old?**

## Sample Output:

Please enter your age: 21 You are eligible to vote.

import java.util.Scanner;

public class AgeChecker {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Please enter your age: ");

int age = sc.nextInt();

if (age >= 18) {

System.out.println("You are eligible to vote.");

} else {

System.out.println("You are not eligible to vote yet.");

}

}

}

1. **Java Program: Print Multiplication Table Using for Loop**

## Sample Output:

Enter a number to print its multiplication table: 7 Multiplication table for 7:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | x | 1 | = | 7 |
| 7 | x | 2 | = | 14 |
| 7 | x | 3 | = | 21 |
| 7 | x | 4 | = | 28 |
| 7 | x | 5 | = | 35 |
| 7 | x | 6 | = | 42 |
| 7 | x | 7 | = | 49 |
| 7 | x | 8 | = | 56 |
| 7 | x | 9 | = | 63 |
| 7 | x | 10 = 70 | | |
|  |  |  | | |

import java.util.Scanner;

public class MultiplicationTable {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter a number to print its multiplication table: ");

int num = sc.nextInt();

System.out.println("Multiplication table for " + num + ":");

for (int i = 1; i <= 10; i++) {

System.out.println(num + " x " + i + " = " + (num \* i));

}

}

}

1. Java Program: Character, String, and Boolean Input Example

## Sample Output:

Enter a single character: A Enter your name: Alice

Do you like programming? (true/false): true

--- User Input Summary --- Character entered: A

Name entered: Alice Likes programming: true

Great! Keep coding, Alice!

import java.util.Scanner;

public class InputExample {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter a single character: ");

char ch = sc.next().charAt(0);

sc.nextLine(); // consume the leftover newline

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

String name = sc.nextLine();

System.out.print("Do you like programming? (true/false): ");

boolean likesProgramming = sc.nextBoolean();

if (likesProgramming) {

System.out.println("Great! Keep coding, " + name + "!");

} else {

System.out.println("No worries, " + name + ". You might enjoy it later!");

}

}

}

## Task: Simple Banking Operations using switch Case

**Objective:**

Create a Java program that simulates simple banking operations like checking balance, depositing money, and withdrawing money using a switch case statement.

## Requirements:

* Use the Scanner class to accept user input.
* Use switch case to perform operations based on the user's menu choice.
* Maintain a balance variable that gets updated based on operations.
* Handle invalid inputs gracefully.

## Sample Output:

Welcome to ABC Bank

1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit

Enter your choice: 2

Enter amount to deposit: 5000 Deposit successful!

Enter your choice: 1

Your current balance is: ₹5000

Enter your choice: 3

Enter amount to withdraw: 2000 Withdrawal successful!

Enter your choice: 1

Your current balance is: ₹3000

Enter your choice: 4

Thank you for using ABC Bank!

import java.util.Scanner;

public class SimpleBanking {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double balance = 0;

int choice;

System.out.println("Welcome to ABC Bank");

do {

System.out.println("\n1. Check Balance");

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

System.out.println("3. Withdraw Money");

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

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

choice = sc.nextInt();

switch (choice) {

case 1:

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

break;

case 2:

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

double deposit = sc.nextDouble();

if (deposit > 0) {

balance += deposit;

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

} else {

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

}

break;

case 3:

System.out.print("Enter amount to withdraw: ");

double withdraw = sc.nextDouble();

if (withdraw > 0 && withdraw <= balance) {

balance -= withdraw;

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

} else {

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

}

break;

case 4:

System.out.println("Thank you for using ABC Bank!");

break;

default:

System.out.println("Invalid choice. Please try again.");

}

} while (choice != 4);

}

}

# String Concatenation

## Scenario: Welcome Message Generator

**Task**: Create a program that takes user input for first name and last name and displays a welcome message using string concatenation.

import java.util.Scanner;

public class WelcomeMessage {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter First Name: ");

String firstName = sc.nextLine();

System.out.print("Enter Last Name: ");

String lastName = sc.nextLine();

String welcomeMessage = "Welcome " + firstName + " " + lastName + "!";

System.out.println(welcomeMessage);

}

}

# StringBuilder

## Scenario: Efficient String Reversal

**Task**: Write a program to reverse a user-entered sentence using StringBuilder.

import java.util.Scanner;

public class ReverseSentence {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter a sentence: ");

String input = sc.nextLine();

StringBuilder sb = new StringBuilder(input);

sb.reverse();

System.out.println("Reversed sentence: " + sb.toString());

}

}

# String API

## Scenario: Email Validation System

**Task**: Use String methods to check if the entered email is valid (contains @ and ends with .com).

import java.util.Scanner;

public class EmailValidation {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

String email = sc.nextLine();

if (email.contains("@") && email.endsWith(".com")) {

System.out.println("Valid Email");

} else {

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

}

}

}

# Date

## Scenario: Display Current Date

**Task**: Create a program that displays the current system date in dd-MM-yyyy format.

import java.text.SimpleDateFormat;

import java.util.Date;

public class CurrentDate {

public static void main(String[] args) {

Date today = new Date();

SimpleDateFormat formatter = new SimpleDateFormat("dd-MM-yyyy");

System.out.println("Current Date: " + formatter.format(today));

}

}

# Time

## Scenario: Show Current Time of Login

**Task**: Display the current login time in HH:mm:ss format.

import java.text.SimpleDateFormat;

import java.util.Date;

public class LoginTime {

public static void main(String[] args) {

Date now = new Date();

SimpleDateFormat timeFormat = new SimpleDateFormat("HH:mm:ss");

System.out.println("Login Time: " + timeFormat.format(now));

}

}

# Numeric Object

## Scenario: Process Student Scores

**Task**: Convert string input to numeric types and perform calculations (average, max, etc.).

import java.util.Scanner;

public class StudentScores {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter 3 scores (comma separated): ");

String input = sc.nextLine(); // e.g., "78,85,92"

String[] parts = input.split(",");

int[] scores = new int[parts.length];

int sum = 0, max = Integer.MIN\_VALUE;

for (int i = 0; i < parts.length; i++) {

scores[i] = Integer.parseInt(parts[i].trim());

sum += scores[i];

if (scores[i] > max) {

max = scores[i];

}

}

double average = (double) sum / scores.length;

System.out.println("Average Score: " + average);

System.out.println("Highest Score: " + max);

}

}