1. **Write a Java program that prints "Hello, World!" to the console.**
2. **Write a Java program that prints your name and age on separate lines.**
3. **Write a Java program to add two integers and print the result.**
4. **Write a Java program to find the product of two floating-point numbers.**
5. **Write a Java program to declare multiple variables of different data types and print their values.**
6. **Write a Java program to swap the values of two integer variables.**
7. **Write a Java program to swap the values of two integer variables without using a third variable.**
8. **Write a Java program to calculate the area of a rectangle given its length and width.**
9. **Write a Java program to find the sum, difference, product, and quotient of two integers.**
10. **Write a Java program to check if a number is even or odd.**
11. **Write a Java program to calculate the area of a Triangle given its base and height.**
12. **Write a Java program to calculate the area and Perimeter of a Circle given its radius.**
13. **Write a Java program to find the remainder when one integer is divided by another.**
14. **Write a Java program to compare two integers and print the larger one.**
15. **Write a Java program to calculate the perimeter of a rectangle given its length and width.**
16. **Write a Java program to calculate the average of three integers.**
17. **Write a Java program to convert a given number of seconds into hours, minutes, and seconds.**
18. **Write a Java program to calculate the area and circumference of a circle given its radius.**
19. **Write a Java program to declare a boolean variable, assign a value to it, and print the value.**
20. **Write a Java program to convert temperatures from Fahrenheit to Celsius.**

**Easy Questions**

1. **Check Even or Odd**: Write a program to check if a given number is even or odd.
2. **Check Positive or Negative**: Write a program to determine if a given number is positive, negative, or zero.
3. **Vowel or Consonant**: Write a program that checks if a given character is a vowel or consonant.
4. **Largest of Two Numbers**: Write a program to find the largest of two numbers.
5. **Check Leap Year**: Write a program to check if a given year is a leap year.
6. **Pass or Fail**: Write a program to check if a student passed or failed based on marks (pass mark is 50).
7. **Check Divisibility**: Write a program to check if a number is divisible by 5 and 11.
8. **Age Group**: Write a program to determine the age group of a person (child, teenager, adult, senior) based on their age.
9. **Simple Calculator (if-else)**: Write a simple calculator program that performs addition, subtraction, multiplication, and division based on user input.
10. **Check Uppercase or Lowercase**: Write a program to check if a given character is an uppercase or lowercase letter.

**Medium Questions**

1. **Number Comparison**: Write a program to compare three numbers and print the largest one.
2. **Grade Calculation**: Write a program to calculate the grade of a student based on marks using an if-else-if ladder.
3. **Day of the Week (switch)**: Write a program to print the day of the week based on a number input (1 for Monday, 2 for Tuesday, etc.).
4. **Quadratic Equation Roots**: Write a program to find the roots of a quadratic equation.
5. **Voting Eligibility**: Write a program to check if a person is eligible to vote based on their age and nationality.
6. **Simple ATM**:
7. **Triangle Type**: Write a program to determine the type of triangle (equilateral, isosceles, scalene) based on side lengths.
8. **Temperature Conversion**: Write a program to convert temperature from Celsius to Fahrenheit and vice versa.
9. **Check Palindrome**: Write a program to check if a given string is a palindrome.
10. **Number Guessing Game**: Write a simple number guessing game where the user has to guess a number between 1 and 100.

**Hard Questions**

1. **Grade Distribution**: Write a program that takes multiple students' marks and calculates the number of students in each grade category (A, B, C, D, F).
2. **Prime Number Check**: Write a program to check if a given number is a prime number using nested if statements.
3. **ATM Machine (Enhanced)**: Enhance the simple ATM program to include a PIN verification system and limit the number of transactions.
4. **Body Mass Index (BMI)**: Write a program to calculate the BMI and categorize it (underweight, normal, overweight, obese).
5. **Library System**: Write a program to simulate a simple library system where users can borrow and return books, and check available books.
6. **Electricity Bill**: Write a program to calculate the electricity bill based on unit consumption with different rates for different ranges.
7. **Student Management System**: Write a program to manage student records with functionalities to add, delete, and view student details.
8. **Simple Inventory System**: Write a program to manage a simple inventory system for a store, allowing adding, removing, and checking stock levels.
9. **Bank Account Management**: Write a program to manage bank accounts with functionalities for creating accounts, depositing, withdrawing, and checking balances.
10. **Simple Chatbot**: Write a program to create a simple chatbot that can respond to basic user queries using nested if-else statements.

***Projects:***

1. **Write a program to simulate a simple ATM machine with options to check balance, deposit, and withdraw.**

import java.util.Scanner;

public class EnhancedATM {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

double balance = 1000;

int pin = 1234;

int maxTransactions = 3;

int transactions = 0;

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

int inputPin = scanner.nextInt();

if (inputPin != pin) {

System.out.println("Incorrect PIN. Access denied.");

return;

}

boolean exit = false;

while (!exit && transactions < maxTransactions) {

System.out.println("1. Check Balance");

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

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

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

System.out.print("Choose an option: ");

int choice = scanner.nextInt();

switch (choice) {

case 1:

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

transactions++;

break;

case 2:

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

double deposit = scanner.nextDouble();

balance += deposit;

System.out.println("Deposited: " + deposit);

transactions++;

break;

case 3:

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

double withdraw = scanner.nextDouble();

if (withdraw <= balance) {

balance -= withdraw;

System.out.println("Withdrew: " + withdraw);

} else {

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

}

transactions++;

break;

case 4:

exit = true;

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

break;

default:

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

break;

}

}

if (transactions >= maxTransactions) {

System.out.println("Transaction limit reached. Goodbye!");

}

scanner.close();

}

}

1. **Number Guessing Game: Write a simple number guessing game where the user has to guess a number between 1 and 100.**

import java.util.Random;

import java.util.Scanner;

public class NumberGuessingGame {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

Random random = new Random();

int numberToGuess = random.nextInt(100) + 1;

int numberOfTries = 0;

int guess;

boolean win = false;

while (!win) {

System.out.print("Guess a number between 1 and 100: ");

guess = scanner.nextInt();

numberOfTries++;

if (guess == numberToGuess) {

win = true;

} else if (guess < numberToGuess) {

System.out.println("Too low");

} else {

System.out.println("Too high");

}

}

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

scanner.close();

}

}