

Logical OR- Exercise Questions

Create a Java program that helps a user choose a meal from a menu. The program should ask the user if they are vegetarian (true or false) and if they have any allergies (true or false). If the user is a vegetarian OR has allergies, recommend a vegetarian meal. Otherwise, recommend a regular meal.

```
import java.util.Scanner;

public class MealRecommendation {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user if they are vegetarian
        System.out.print("Are you vegetarian? (true/false): ");

        boolean isVegetarian = scanner.nextBoolean();

        // Ask the user if they have any allergies
        System.out.print("Do you have any allergies? (true/false): ");

        boolean hasAllergies = scanner.nextBoolean();

        // Check conditions and recommend a meal
        if (isVegetarian || hasAllergies) {

            System.out.println("We recommend a vegetarian meal for you.");

        } else {

            System.out.println("We recommend a regular meal for you.");

        }

        scanner.close();

    }

}
```

Create a Java program that provides weather recommendations based on user input. Ask the user if it's raining (true or false) and if it's a weekend (true or false). If it's raining OR it's the weekend, recommend staying indoors. Otherwise, recommend going out for outdoor activities

```
import java.util.Scanner;

public class WeatherRecommendation {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user if it's raining
        System.out.print("Is it raining? (true/false): ");

        boolean isRaining = scanner.nextBoolean();

        // Ask the user if it's the weekend
        System.out.print("Is it the weekend? (true/false): ");

        boolean isWeekend = scanner.nextBoolean();

        // Check conditions and provide weather recommendations
        if (isRaining || isWeekend) {

            System.out.println("It's recommended to stay indoors.");

        } else {

            System.out.println("It's a good time to go out for outdoor activities.");

        }

        scanner.close();

    }

}
```

Create a program that prompts the user to enter a number. Use the logical NOT operator to check if the number is not equal to zero and provide feedback.

```
import java.util.Scanner;

public class CheckNumber {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter a number

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

        int userInput = scanner.nextInt();


        // Check if the number is not equal to zero using the logical NOT operator
        if (!(userInput == 0)) {

            System.out.println("The entered number is not equal to zero.");

        } else {

            System.out.println("The entered number is equal to zero.");

        }

        scanner.close();

    }

}
```

Ask the user to enter their age and check if they are not a senior citizen (age less than 60) to determine eligibility for discounts. Display a message accordingly.

```
import java.util.Scanner;

public class DiscountEligibility {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user to enter their age

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

        int userAge = scanner.nextInt();

        // Check if the user is not a senior citizen (age less than 60)

        if (userAge < 60) {

            System.out.println("You are eligible for discounts!");

        } else {

            System.out.println("Sorry, you are not eligible for discounts.");

        }

        scanner.close();

    }

}
```

Create a program that asks the user for their age. Use the logical NOT operator to check if the user is not a child (below 18 years old) and, if so, display a message indicating eligibility for a certain activity.

```
import java.util.Scanner;

public class AgeCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user to enter their age

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

        int userAge = scanner.nextInt();

        // Check if the user is not a child (below 18) using the logical NOT operator
        if (!(userAge < 18)) {

            System.out.println("You are eligible for the activity!");

        } else {

            System.out.println("Sorry, this activity is for adults only.");

        }

        scanner.close();

    }

}
```

Create a program that asks the user to enter a color. Use the logical NOT operator to check if the color is not equal to "red" and display a message accordingly.

```
import java.util.Scanner;

public class ColorCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user to enter a color

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

        String userColor = scanner.next();

        // Check if the color is not equal to "red" using the logical NOT operator
        if (!userColor.equalsIgnoreCase("red")) {

            System.out.println("The color entered is not red.");

        } else {

            System.out.println("The color entered is red.");

        }

        scanner.close();

    }

}
```

Create a program that asks the user for their role (e.g., "admin" or "user"). Use the logical NOT operator to check if the user is not an admin and display a message accordingly.

```
import java.util.Scanner;

public class RoleCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user to enter their role

        System.out.print("Enter your role (admin/user): ");

        String userRole = scanner.nextLine();

        // Check if the user is not an admin using the logical NOT operator
        if (!userRole.equalsIgnoreCase("admin")) {

            System.out.println("You are not an admin. Restricted access!");

        } else {

            System.out.println("Welcome, admin! Enjoy full access.");

        }

        scanner.close();

    }

}
```

Create a program that asks the user for their age. Use the logical AND operator to check if the user's age is between 18 and 65 (inclusive) to determine eligibility for a certain activity.

```
import java.util.Scanner;

public class AgeCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user for their age

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

        int userAge = scanner.nextInt();

        // Check if the age is between 18 and 65 (inclusive)

        if (userAge >= 18 && userAge <= 65) {

            System.out.println("You are eligible for the activity!");

        } else {

            System.out.println("You are not eligible for the activity.");

        }

        scanner.close();

    }

}
```


Write a program that prompts the user to enter a number. Use the logical AND operator to check if the number is both positive and even, and provide feedback.

```
import java.util.Scanner;

public class NumberCheck {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter a number

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

        int userNumber = scanner.nextInt();

        // Check if the number is both positive and even using the logical AND
operator

        if (userNumber > 0 && userNumber % 2 == 0) {

            System.out.println("The entered number is both positive and even.");

        } else {

            System.out.println("The entered number is either not positive or not even.");

        }

        scanner.close();

    }

}
```

Write a Java expression that checks if a given number is both greater than 5 and less than 10. If both conditions are met, print "The number is between 5 and 10."

```
int number = 8;
```

```
if (number > 5 && number < 10) {
```

```
    System.out.println("The number is between 5 and 10.");
```

```
}
```

Create a program that checks if a user is eligible to vote. You should check if the user's age is 18 or older and if they are a citizen. If both conditions are true, display "You are eligible to vote."

```
import java.util.Scanner;

public class VotingEligibility {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Ask the user for their age
        System.out.print("Enter your age: ");

        int userAge = scanner.nextInt();

        // Ask the user if they are a citizen
        System.out.print("Are you a citizen? (true/false): ");

        boolean isCitizen = scanner.nextBoolean();

        // Check eligibility to vote
        if (userAge >= 18 && isCitizen) {

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

        } else {

            System.out.println("Sorry, you are not eligible to vote.");

        }

        scanner.close();

    }

}
```

Develop a Java program that demonstrates the addition of two and three numbers using method overloading concepts, incorporating the Scanner class for user input, constructor concepts for object initialization, and function concepts for modularization. Your program should allow users to input the numbers and output the sum accordingly. Provide clear and concise code with appropriate comments to explain the functionality of each section.

```
import java.util.Scanner;

public class NumberAddition {

    // Constructor to initialize the object
    public NumberAddition() {

        System.out.println("Welcome to the Number Addition Program!");
    }

    // Method overloading for adding two numbers
    public int addNumbers(int num1, int num2) {

        return num1 + num2;
    }

    // Method overloading for adding three numbers
    public int addNumbers(int num1, int num2, int num3) {

        return num1 + num2 + num3;
    }

    public static void main(String[] args) {

        // Creating an object of the NumberAddition class
        NumberAddition addition = new NumberAddition();

        Scanner scanner = new Scanner(System.in);

        // Prompt user to enter two numbers
        System.out.print("Enter the first number: ");

        int num1 = scanner.nextInt();
```

```
System.out.print("Enter the second number: ");
int num2 = scanner.nextInt();
// Calculate and display the sum of two numbers
int sumTwoNumbers = addition.addNumbers(num1, num2);
System.out.println("Sum of two numbers: " + sumTwoNumbers);
// Prompt user to enter three numbers
System.out.print("Enter the third number: ");
int num3 = scanner.nextInt();
// Calculate and display the sum of three numbers
int sumThreeNumbers = addition.addNumbers(num1, num2, num3);
System.out.println("Sum of three numbers: " + sumThreeNumbers);
scanner.close();
}
}
```

Write a Java program that prompts the user to enter their age and gender. Based on these inputs, determine whether the person is eligible for a specific training. The program should consider the following conditions:

- **Eligibility for a mixed-gender program:**
 - **Age must be between 18 and 40 (inclusive).**
 - **Both males and females are eligible.**
- **Eligibility for a women's-only program:**
 - **Age must be between 20 and 45 (inclusive).**
 - **Gender must be female.**

Your program should utilize logical operators and conditional statements to determine eligibility. Provide appropriate prompt and output messages to guide the user. Ensure your program is well-commented and follows best practices for readability and organization.

```
import java.util.Scanner;

public class TrainingEligibility {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Prompt user to enter age
        System.out.print("Enter your age: ");
        int age = scanner.nextInt();

        // Prompt user to enter gender
        System.out.print("Enter your gender (male/female): ");

        String gender = scanner.next().toLowerCase(); // Convert input to lowercase
        for case-insensitive comparison

        // Check eligibility for a mixed-gender program
        if (age >= 18 && age <= 40 && (gender.equals("male") ||
gender.equals("female")))) {
```

```
        System.out.println("You are eligible for the mixed-gender training  
program.");
```

```
    } else if (age >= 20 && age <= 45 && gender.equals("female")) {
```

```
        // Check eligibility for a women's-only program
```

```
        System.out.println("You are eligible for the women's-only training  
program.");
```

```
    } else {
```

```
        // Not eligible for any program
```

```
        System.out.println("Sorry, you are not eligible for the specified training  
programs.");
```

```
    }
```

```
    scanner.close();
```

```
}
```

```
}
```

Consider the below program to predict the output of the program and explain your reasoning and write a statement to print the values of a, b, c and d.

```
public class IncrementDecrementExercise {  
    public static void main (String [] args) {  
        int a=5, b=7, c=9, d=3;  
        int result1 = a++ * b-- + --c - ++d;  
        int result2 = ++a + --b * c-- - d++;  
        System.out.println("Result 1: " + result1);  
        System.out.println("Result 2: " + result2);  
    }  
}
```

Output:

Result 1: 39

Result 2: 43

Write a Java program for a number guessing game where the user has to guess a randomly generated number between 1 and 100. The program should provide the following features:

- Generate a random number between 1 and 100.
- Prompt the user to guess the number.
- If the guessed number is higher than the randomly generated number, print "Too high, try again!".
- If the guessed number is lower than the randomly generated number, print "Too low, try again!".
- If the guessed number is equal to the randomly generated number, print "Congratulations, you guessed the number!" and terminate the game.

The game should continue until the user correctly guesses the number.


```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Generate a random number between 1 and 100
        int randomNumber = (int) (Math.random() * 100) + 1;

        // Game loop
        while (true) {

            // Prompt the user to guess the number
            System.out.print("Guess the number (between 1 and 100): ");

            int userGuess = scanner.nextInt();

            // Check if the guessed number is correct
            if (userGuess == randomNumber) {

                System.out.println("Congratulations, you guessed the number!");

                break; // Terminate the game

            } else if (userGuess < randomNumber) {

                System.out.println("Too low, try again!");

            } else {

                System.out.println("Too high, try again!");

            }

        }

        System.out.println("The number was " + randomNumber);

        scanner.close();

    }

}
```

