



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

كلية العلوم قسم الانظمة الطبية الذكية

Lecture: (9)

Branching and Selection Part I (examples)

Subject: Computer Programming (I)

Level: First

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- Relational operators in Java are used to compare two values and return a boolean result indicating whether the comparison is true or false. Here's an example demonstrating the usage of relational operators in Java:

```
public class RelationalOperatorsExample {
    public static void main(String[] args) {
        int a = 10;
        int b = 20;

        // Equality operator (==)
        System.out.println("a == b: " + (a == b)); // false

        // Inequality operator (!=)
        System.out.println("a != b: " + (a != b)); // true

        // Greater than operator (>)
        System.out.println("a > b: " + (a > b)); // false

        // Less than operator (<)
        System.out.println("a < b: " + (a < b)); // true

        // Greater than or equal to operator (>=)
        System.out.println("a >= b: " + (a >= b)); // false

        // Less than or equal to operator (<=)
        System.out.println("a <= b: " + (a <= b)); // true
    }
}
```



```
import java.util.Scanner;

public class ShortMedicalDiagnosis {
    public static void main(String[] args) {
        System.out.println("Do you have a headache? (yes/no)");

        Scanner scanner = new Scanner(System.in);

        String headache = scanner.nextLine();

        if (headache.equalsIgnoreCase("yes")) {
            System.out.println("You might be suffering from
stress or tension headaches.");
        }
        if (headache.equalsIgnoreCase("no")) {
            System.out.println("I wish you good health. Drink
coffee and enjoy your day.");
        }

        scanner.close();
        return;
    }
}
```



- Example program that calculates the area of a rectangle:

```
import java.util.Scanner;

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

        System.out.println("Enter the length of the
rectangle:");
        double length = scanner.nextDouble();

        System.out.println("Enter the width of the rectangle:");
        double width = scanner.nextDouble();

        // Calculate the area of the rectangle
        double area = length * width;

        System.out.println("The area of the rectangle is: " +
area);

        scanner.close();
    }
}
```



```
import java.util.Scanner;

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

        System.out.println("Welcome to the Age Classifier Program!");
        System.out.println("Please enter your age:");
        int age = scanner.nextInt();

        if (age < 0) {
            System.out.println("Invalid age. Please enter a positive
number.");
        }
        if (age >= 0 && age <= 12) {
            System.out.println("You are a child.");
        }
        if (age >= 13 && age <= 19) {
            System.out.println("You are a teenager.");
        }
        if (age >= 20) {
            System.out.println("You are an adult.");
        }

        scanner.close();
    }
}
```

```
import java.util.Scanner;

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

        System.out.println("Welcome to the Even-Odd Number Checker!");
        System.out.println("Please enter a number:");
        int number = scanner.nextInt();

        if (number % 2 == 0) {
            System.out.println("The number is even.");
        }
        if (number % 2 != 0) {
            System.out.println("The number is odd.");
        }

        scanner.close();
    }
}
```



```
import java.util.Scanner;

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

        System.out.println("Welcome to the Number Classifier!");
        System.out.println("Please enter a number:");
        int number = scanner.nextInt();

        if (number > 0) {
            System.out.println("The number is positive.");
        }
        if (number < 0) {
            System.out.println("The number is negative.");
        }
        if (number == 0) {
            System.out.println("The number is zero.");
        }

        scanner.close();
    }
}

import java.util.Scanner;

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

        System.out.println("Welcome to the Even-Odd Number Checker!");
        System.out.println("Please enter a number:");
        int number = scanner.nextInt();

        if (number % 2 == 0) {
            System.out.println("The number is even.");
        } else {
            System.out.println("The number is odd.");
        }

        scanner.close();
    }
}
```



```
import java.util.Scanner;

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

        System.out.println("Welcome to the Multiple of Five
Checker!");
        System.out.println("Please enter a number:");
        int number = scanner.nextInt();

        if (number % 5 == 0) {
            System.out.println("The number is a multiple of 5.");
        } else {
            System.out.println("The number is not a multiple of 5.");
        }

        scanner.close();
    }
}
```



- Write a program in Java to add two numbers entered by the user

```
import java.util.Scanner;

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

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

        // Prompt the user to enter the first number

        System.out.print("Enter the first number: ");
        int firstNumber = scanner.nextInt();

        // Prompt the user to enter the second number

        System.out.print("Enter the second number: ");
        int secondNumber = scanner.nextInt();

        // Calculate the sum of the two numbers
        int sum = firstNumber + secondNumber;

        // Display the result
        System.out.println("The sum of " + firstNumber + " and "
+ secondNumber + " is: " + sum);

        // Close the scanner
        scanner.close();
    }
}
```



Write a program in Java to subtract two numbers entered by the user

```
import java.util.Scanner;

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

        System.out.println("Welcome to the Subtraction
Program!");

        // Prompt the user to enter the first number
        System.out.print("Enter the first number: ");
        int firstNumber = scanner.nextInt();

        // Prompt the user to enter the second number
        System.out.print("Enter the second number: ");
        int secondNumber = scanner.nextInt();

        // Calculate the difference of the two numbers
        int difference = firstNumber - secondNumber;

        // Display the result
        System.out.println("The difference of " + firstNumber +
" and " + secondNumber + " is: " + difference);

        // Close the scanner
        scanner.close();
    }
}
```
