If statements

Introduction:

This lab lecture aims to introduce you to the concept of conditional statements in Java, focusing specifically on the if statement and its usage. By the end of this session, you should understand how to use if statements to control the flow of your Java programs based on certain conditions.

In programming, it's often necessary to execute different blocks of code based on certain conditions. Conditional statements allow us to control the flow of the program based on whether a condition evaluates to true or false. In Java, the if statement is one such conditional statement that allows us to execute a block of code only if a specified condition is true.

If statement:

```
if (condition) {

   // block of code to be executed if the condition is true

}
```

Exercise 1: Understanding Basic if Statement

```java
public class Main {

  public static void main(String[] args) {

    if (20 > 18) {

      System.out.println("20 is greater than 18"); // obviously

    }

  }

}
```

Output: 20 is greater than 18

- **Explanation:**

the if statement checks if 20 is greater than 18. Since this condition is true, the corresponding block of code within the if statement gets executed, resulting in the output "20 is greater than 18".

Else-if statement:

```
if (condition) {
  // block of code to be executed if the condition is true
} else {
  // block of code to be executed if the condition is false
}
```

Exercise 2: Understanding Basic else-if Statement

```java
public class Main {
  public static void main(String[] args) {
    int time = 20;
    if (time < 18) {
      System.out.println("Good day.");
    } else {
      System.out.println("Good evening.");
    }
  }
}
```

Output: Good evening.

- **Explanation:**

Now we introduce an else block. Here, the program checks if the value of the variable time is less than 18. If this condition is true, it prints "Good day." Otherwise, the else block gets executed, printing "Good evening." In this case, since the value of time is 20, the else block gets executed, resulting in the output "Good evening."

Conclusion:

Conditional statements like if and if-else are essential tools in programming as they allow us to make decisions based on conditions. By using these statements effectively, we can control the flow of our programs and make them more dynamic and responsive to different situations. In the next lab session, we will explore more complex conditions and learn about nested if statements.