Conditional Statements in TypeScript

Conditional statements in TypeScript help in decision-making based on conditions.

Below are the main types:

1) if Statement

- The if statement executes a block of code only if a specified condition is true.
- If the condition evaluates to false, the code inside the if block is skipped.

Syntax:

```
if (condition) {
   // Code to execute if condition is true
}
```

Example:

```
let age: number = 18;
if (age >= 18) {
   console.log("You are eligible to vote.");
}
```

2) if-else Statement

- The if-else statement executes one block of code if the condition is true, and another block if the condition is false.

Syntax:

```
if (condition) {
   // Code to execute if condition is true
} else {
   // Code to execute if condition is false
}
```

Example:

```
let num: number = 10;
if (num % 2 === 0) {
   console.log("Even number");
} else {
   console.log("Odd number");
}
```

3) Nested if-else (if-else if) Statement

- This is used when multiple conditions need to be checked sequentially.
- The first true condition is executed, and the rest are skipped.

Syntax:

```
if (condition1) {
   // Code for condition1
} else if (condition2) {
   // Code for condition2
} else if (condition3) {
   // Code for condition3
} else {
   // Code to execute if none of the conditions are true
}
```

Example:

```
let marks: number = 85;
if (marks >= 90) {
   console.log("Grade: A");
} else if (marks >= 75) {
   console.log("Grade: B");
} else if (marks >= 50) {
   console.log("Grade: C");
} else {
```

```
    console.log("Fail");
}
```

4) switch-case Statement

- The switch statement allows testing a variable against multiple values (case).
- If a match is found, that case block executes. The break statement stops execution after a match.
- The default case runs if no match is found.

Syntax:

```
switch (expression) {
    case value1:
        // Code for case value1
        break;
    case value2:
        // Code for case value2
        break;
    case value3:
        // Code for case value3
        break;
    default:
        // Code to execute if no case matches
}
```

Example:

```
let day: number = 3;
switch (day) {
    case 1:
        console.log("Monday");
        break;
    case 2:
        console.log("Tuesday");
```

```
        break;
    case 3:
        console.log("Wednesday");
        break;
    case 4:
        console.log("Thursday");
        break;
    default:
        console.log("Invalid day");
}
```

Key Takeaways

- **if** → Executes code if condition is true.
- **if-else** → Executes one block for true, another for false.
- **if-else-if** → Checks multiple conditions sequentially.
- **switch-case** → Compares a value against multiple cases for efficiency.

Lab Assignments

If condition:

1. Check if a character is uppercase.
2. Check if a number is a multiple of 10.

If else condition:

3. Check if a person is a teenager (age between 13 and 19).
4. Compare two numbers and print the larger one.
5. Check if a number is positive, negative, or zero.
6. Check if a person is eligible for a senior citizen discount (age >= 60).

Nested if else:

7. Check if a number is positive and even.
8. Check if a character is an uppercase vowel.
9. Find the largest of three numbers.
10. Check if a number is a multiple of both 5 and 10.
11. Check if a character is a vowel or consonant.
12. Check if a number is divisible by both 2 and 3.

Switch case:

13. Print the corresponding month name for a given month number.
14. Perform basic arithmetic operations based on user input.
15. Print the season based on the month number.