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## Theory: Ternary operator

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The ternary operator is an operator which evaluates a condition and chooses one of two cases to execute. It is also called the conditional operator. The operator can be considered as a form of the if -then- else statement. The ternary operator should not be confused with the conditional statement, despite their ideological similarity. This operator can be used in places where an expression is expected.

Sometimes the ternary operator is more readable and concise than the corresponding if statement.

Let's start learning this operator with an example. Suppose we have to find the maximum of two int variables, a and b. It is easy to write using a conditional statement:

```
int a = \ldots;
int b = \ldots;
int max = \dots;
if (a > b) {
    max = a;
} else {
    max = b;
```

The equal ternary operator looks like:

```
int max = a > b? a : b;
```

This code is more concise than the code above, isn't it?

The general syntax of the ternary operator is the following:

```
result = condition ? trueCase : elseCase;
```

It includes two special symbols? and:.

Here, the condition is a Boolean expression that evaluates to either true or false. If this expression is true, the ternary operator evaluates trueCase, otherwise elseCase is evaluated. It is important that trueCase and elseCase are expressions which can be reduced to a common type. This type determines the type of the result.

Let's consider another example that prints whether a number is even or odd.

```
int num = ...; // it's initialized by a value
System.out.println(num % 2 == 0 ? "even" : "odd");
```

This ternary operator consists of three operands: the value of the expression num % 2 == 0, and two string literals "even" and "odd". The result type of it is String.

Note, Java allows us to nest one ternary operator into another one, but it can be less readable than the corresponding conditional statement. If you do this, be careful.

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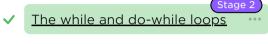


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