

Conditional statements

Conditional statements

Problem

- Последовательное (линейное) выполнение программы (алгоритма) позволяет решать ограниченный круг задач.

Solution

- Использование конструкций позволяющих изменять последовательность выполнения в зависимости от условия (**condition**)

if statement

Syntax

```
if (condition) {  
    // execute this code if the condition is true  
}
```

Example

```
if (20 > 18) {  
    System.out.println("20 is greater than 18");  
}
```

Example

```
int x = 20;  
int y = 18;  
if (x > y) {  
    System.out.println("x is greater than y");  
}
```


The **if ... else** statement

Syntax

```
if (condition) {  
    // execute this code if the condition is true  
} else {  
    // execute this code if the condition is false  
}
```

Example

```
int time = 20;
if (time < 18) {
    System.out.println("Good day.");
} else {
    System.out.println("Good evening.");
}
// Outputs "Good evening."
```

Inner *if* statement

Syntax

```
if (condition1) {  
    if (condition2) {  
        // execute this code if the condition1 AND condition2 is true  
    } else {  
        // execute this code if the condition1 AND condition2 is false  
    }  
} else {  
    // execute this code if the condition1 is false  
}
```

Example

```
if (a > b) {  
    if (a > c) {  
        System.out.println("max number:" + a);  
    } else {  
        System.out.println("max number:" + c);  
    }  
} else {  
    if (b > c) {  
        System.out.println("max number:" + b);  
    } else {  
        System.out.println("max number:" + c);  
    }  
}
```

The **if ... else if** statement

Syntax

```
if (condition1) {  
    // execute this code if condition1 is true  
} else if (condition2) {  
    // execute this code if the condition1 is false and condition2 is true  
} else {  
    // execute this code if the condition1 is false and condition2 is false  
}
```


Example

```
int time = 22;
if (time < 10) {
    System.out.println("Good morning.");
} else if (time < 20) {
    System.out.println("Good day.");
} else {
    System.out.println("Good evening.");
}
// Outputs "Good evening."
```

switch statement

Syntax

```
switch(expression) {  
  case x:  
    // code block  
    break;  
  case y:  
    // code block  
    break;  
  default:  
    // code block  
}
```

Example

```
int day = 4;
switch (day) {
    case 1:
        System.out.println("Monday");
        break;
    case 2:
        System.out.println("Tuesday");
        break;
    case 3:
        System.out.println("Wednesday");
        break;
    case 4:
        System.out.println("Thursday");
        break;
    case 5:
        System.out.println("Friday");
        break;
    case 6:
        System.out.println("Saturday");
        break;
}
```

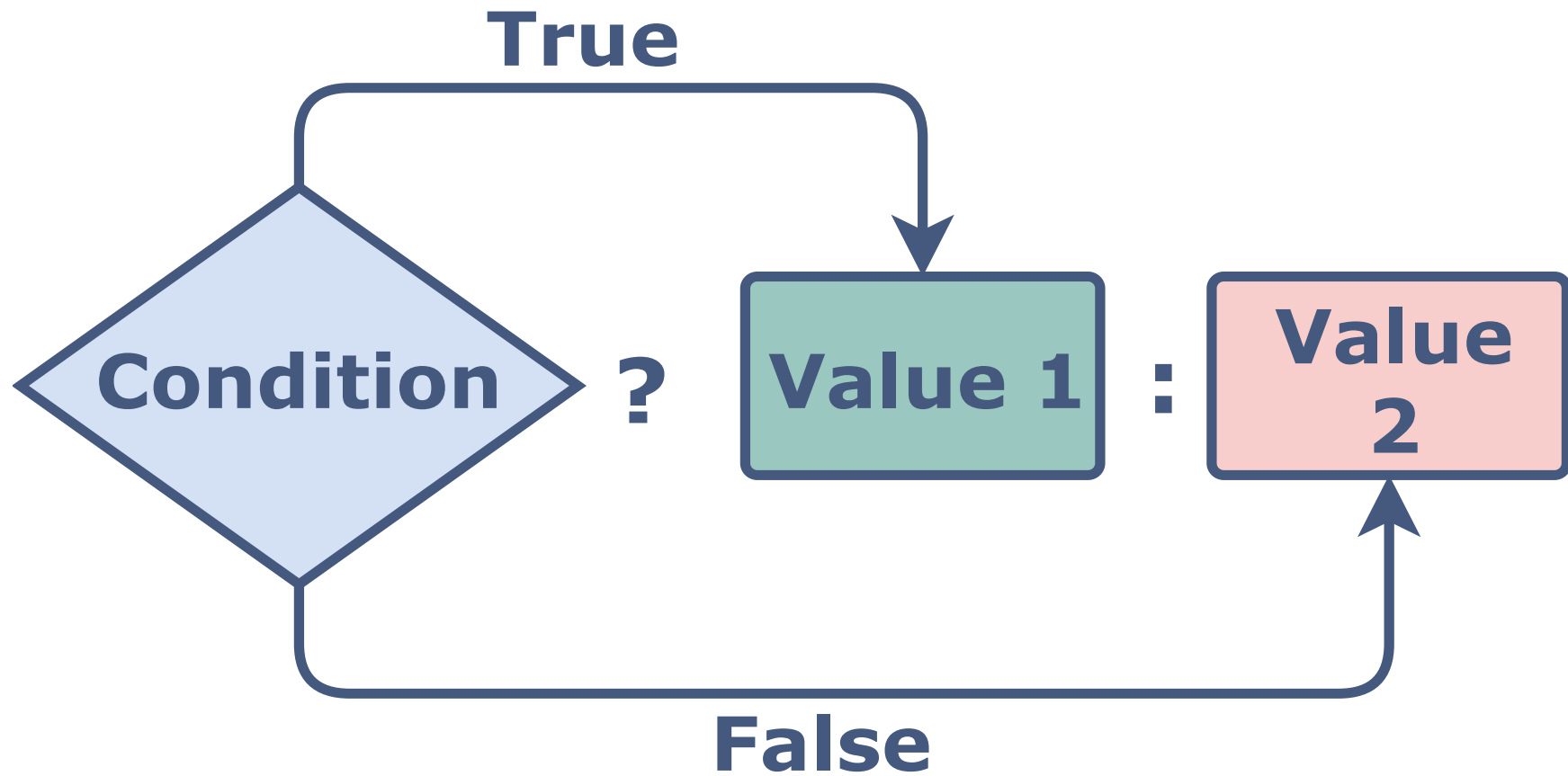
The **break** keyword

Example

```
int day = 4;
switch (day) {
    case 6:
        System.out.println("Today is Saturday");
        break;
    case 7:
        System.out.println("Today is Sunday");
        break;
    default:
        System.out.println("Looking forward to the Weekend");
}
// Outputs "Looking forward to the Weekend"
```

Short hand **if ... else** (Ternary Operator)

Ternary Operator



Syntax

```
variable = (condition) ? expressionTrue : expressionFalse;
```

```
variable = (condition)  
    ? expressionTrue  
    : expressionFalse;
```

Example

```
int time = 20;  
if (time < 18) {  
    System.out.println("Good day.");  
} else {  
    System.out.println("Good evening.");  
}
```

Example

```
int time = 20;  
String result = (time < 18)  
    ? "Good day."  
    : "Good evening."  
System.out.println(result);
```