

# Conditions

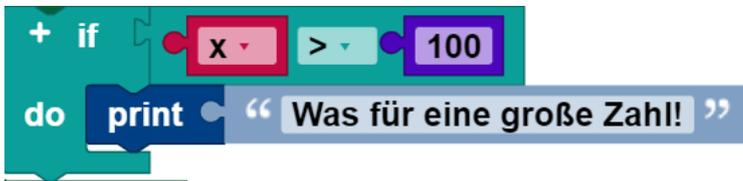
Conditional instructions are essential for programming. They make it possible to formulate case differentiations, such as:

- If there is a path to the left, turn left.
- If the number of points = 100, press “Good job!”.

## Blocks

### if blocks

The simplest condition is an **if** block:



When it is executed, the value of the variable **x** is compared to 100. If it is larger, then “What a large number!” is output. Otherwise, nothing happens.

### if do blocks

It is also possible to indicate that something should happen when the condition is false, as in this example:

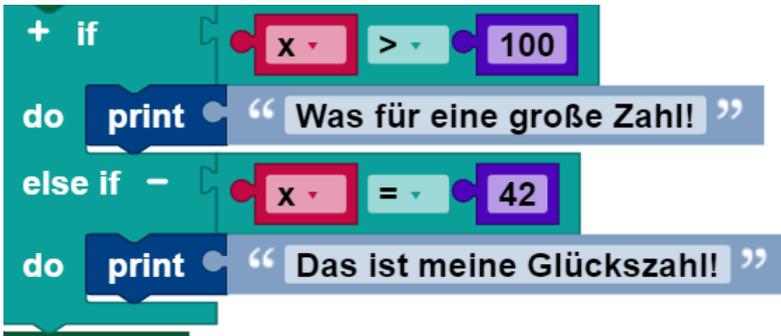


As in the previous block, “What a large number!” is output when  $x > 100$ . Otherwise “It’s not very big’ is output.

An **if** block may have a **do** section, but not more than one.

### if do else if blocks

It is also possible to test multiple conditions with a single **if** block, by adding **do else** clauses:

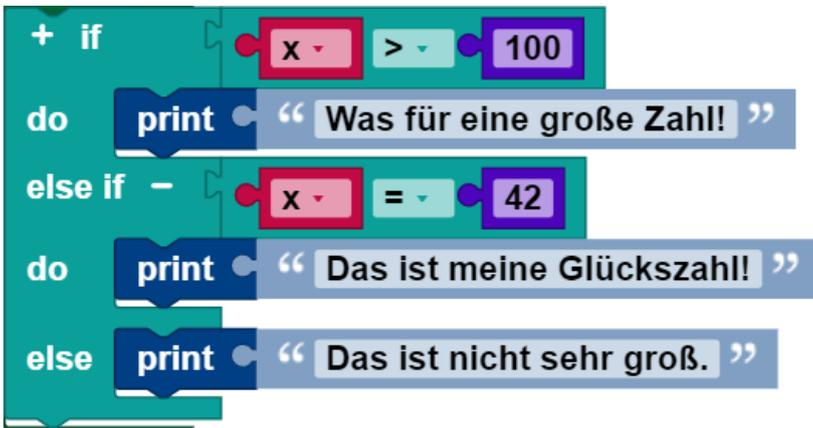


The block checks first whether  $x > 100$ , and outputs “What a large number!” if this is the case. If this is not the case, it then checks whether  $x = 42$ . If so, then it outputs “That is my lucky number!”. Otherwise, nothing happens.

An **if** block can have any number of **if do** sections. The conditions are evaluated from top to bottom, until one of them is fulfilled, or until there are no more conditions left.

## if do else if do else blocks

**if** blocks can have both **if do** and **else if** sections:

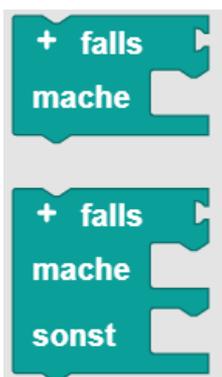


The **else if** section guarantees that an action is executed, even if none of the previous conditions is true.

An **else if** section can also occur after any number of **if do** sections, including zero, which would then be a completely normal **if do** block.

## Block modification

Only the simple **if** block and the **if do** block appear in the tool list:



To add **if do** and **else** clauses, click the (+) symbol. The (-) symbol can be used to remove **else if** clauses:



Note that the shapes of the blocks permit any number of **else if** sub-blocks to be added, but only up to one **if** block.

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