Let’s start by reviewing conditional statements, which are used to make decisions in a program.

An if statement runs a block of code only if a certain condition is true, otherwise the block of code is skipped.

The block of code is the indented block after the if keyword and conditional statement.

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By using else, rather than skipping the block of code, the program instead executes an alternative block of code.

The program can take one of two branches before moving on to further code in the program.

The indented code after else is executed if the conditional following the if keyword is false.

\*

elif, meaning else if, provides alternative conditions that are tested sequentially after the if conditional.

In other words, if the first conditional is false, the program moves onto the elif statement, then the next, until a conditional that evaluates to True is found.

At this point the program runs the indented code and moves on to further code.

The number of elif statements is unlimited but only one is executed.

If none of the conditionals are true, the default ‘else’ code block is executed.

The elif statements always come after if and are usually followed by else.

\*

For example in the time telling example we studied, we use an if conditional to do an action if it is lunchtime…

\*

…then use elif to do an action if it is work time…

\*

…and finally default to the action to go home if neither preceding conditional is true, using else.

\*

Pause the video now and try this exercise using conditional statements.

A video and showing a worked solution, and the code, can be found on blackboard.

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Next let’s review loops.

A loop is used to repeat an action over and over before moving on to the next part of the code.

We can specify the number of repetitions …

…or iterations

… or keep repeating while some condition is true.

The first of these is called a for loop and the second a while loop.

\*

A for loop begins with the keyword for…

a target, that changes value with each iteration, assigned to a fixed variable name…

the keyword in…

an iterable object such as a list or string…

this is followed by a colon

the block of indented code that follows is executed every time the code loops

\*

A while loop begins with the keyword while

…followed by a condition that indicates when to stop looping

…the indented code that follows will continue looping while this condition evaluates to True, so changes must occur in the code that allow the condition to be negated, otherwise the loop will continue repeating indefinitely.

\*

Pause the video and attempt these exercises using loops.

Videos showing worked solutions, and the code, can be found on blackboard.

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Lastly, let’s review the break and continue keywords.

Break causes the program to exit the loop if a certain condition is satisfied, skipping all remaining iterations.

Continue, on the other hand, skips the current iteration if a condition is satisfied, but continues looping after that.

\*

Try these last two exercises.

Solutions can be found on blackboard.