Lesson 4: More branches

Computing

Introduction to Python programming

Rebecca Franks

Worked Example Weather

This is an example of a Python program that you developed earlier. It prompts the user for the weather in a particular location and provides clothing advice accordingly.

```python
print("What's the weather like?")
weather = input()
if weather == "cloudy":
  advice = "No sunglasses"
elif weather == "rainy":
  advice = "Get an umbrella"
elif weather == "snowy":
  advice = "Mittens and earmuffs"
else:
  advice = "No particular advice"
print(advice)
```

Syntax checklist Help with errors

If you encounter an error message, read it and try to fix the problem. Use the list below to check for common errors.

<table>
<tr><td>☐</td><td>misspelt <code>if</code> or <code>else</code> (this includes using capitals)</td></tr>
<tr><td>☐</td><td>forgot the colon <code>:</code> after the <code>if</code> condition or after <code>else</code></td></tr>
<tr><td>☐</td><td>forgot to indent statements in the <code>if</code> block or the <code>else</code> block</td></tr>
<tr><td>☐</td><td>indented <code>if</code> or <code>else</code> by mistake</td></tr>
<tr><td>☐</td><td>used <code>=</code> instead of <code>==</code> in the condition for <code>if</code>, to check if two values are equal</td></tr>
<tr><td>☐</td><td>used quotes around the name of a variable</td></tr>
<tr><td>☐</td><td>forgot to use quotes around a string literal (like <code>"snowy"</code>)</td></tr>
</table>

Testing your program How to

Once you manage to run your program successfully, test it at least once for every possible branch of the `if`, `elif`, `else` statement

Tip: In every task, the problem statement includes sample interactions between the user and the program. Use the values provided in these examples to test your program.

Task 1 People in space

Below is a short program that displays how many people are currently in space.

```
1 from ncce.space import people
2 number = people()
3 print(number, "people in space right now")
```

Line 1 imports the people function from the space module, in order to retrieve this information from an online service, so the number of people displayed will not always be the same. **This is not a standard Python component**; it has been created specifically to allow you to perform these tasks.

Task 1 People in space

Step 1 - Open this Python program (oaknat.uk/comp-py-space-40) in Repl.it and extend it, so that it asks the user to guess the number of people currently in space.

Example

Note: The number of people in space is retrieved from an online service through the `people` function. **It is not always the same** and the numbers shown here are just an example.

The program displays a prompt and waits for keyboard input.	`How many people do you think are in space right now?`
The user types in a reply.	`5`
The program displays the correct number.	`8 people in space right now`

Task 1 People in space

Tip

Don't delete or modify any of the existing program statements.

Tip

Introduce a variable called `guess`, to refer to the number entered by the user.

Tip

Don't forget that the user's `guess` should be an integer. You will need to use `int`.

Tip

Before you proceed to the next step, make sure that you run your program, to verify that there are no errors.

Task 1 People in space

Step 2 - Extend the program so that it compares the `number` of people in space with the user's `guess` and displays an appropriate message. The next **three** slides show example input/outputs.

Example
Note: The number of people in space is retrieved from an online service through the `people` function. **It is not always the same** and the numbers shown here are just an example.

The program displays a prompt and waits for keyboard input.	`How many people do you think are in space right now?`
The user types in a reply.	`8`
The program displays a message that the user's guess is correct.	`That's right!` `8 people in space right now`

Task 1 People in space

Another example…

Example

Note: The number of people in space is retrieved from an online service through the `people` function. **It is not always the same** and the numbers shown here are just an example.

The program displays a prompt and waits for keyboard input.	`How many people do you think are in space right now?`
The user types in a reply.	`5`
The program displays a message that the user's guess is incorrect, along with the correct number.	`It's actually more than that` `8 people in space right now`

Task 1 People in space

Another example...

Example

Note: The number of people in space is retrieved from an online service through the `people` function. **It is not always the same** and the numbers shown here are just an example.

The program displays a prompt and waits for keyboard input.	`How many people do you think are in space right now?`
The user types in a reply.	`9`
The program displays a message that the user's guess is incorrect, along with the correct number.	`It's actually fewer than that` `8 people in space right now`

Task 1 People in space

Tip

There are three branches, so use multi-branch selection: `if`, `elif`, `else`.

Tip

Use == to compare if two values are equal.

Use < or > to compare if a value is less than or greater than another.