National Centre for Computing Education

Raspberry Pi

People in space

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.

```
1  print("What's the weather like?")
2  weather = input()
3  if weather == "cloudy":
4    advice = "No sunglasses"
5  elif weather == "rainy":
6    advice = "Get an umbrella"
7  elif weather == "snowy":
8    advice = "Mittens and earmuffs"
9  else:
10   advice = "No particular advice"
11 print(advice)
```

Syntax checklist

If you encounter an **error message**, read it and try to fix the problem. Use the list below to check for common errors (and tick ✓ if you find yours).

- misspelt `if` or `else` (this includes using capitals)
- forgot the colon `:` after the `if` condition or after `else`
- forgot to **indent** statements in the `if` block or the `else` block
- indented `if` or `else` by mistake
- used `=` instead of `==` in the condition for `if`, to check if two values are equal
- used quotes around the name of a variable

- forgot to use quotes around a string literal (like `"snowy"`)

Testing your program

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

Task 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.

Step 1

Open this Python program (ncce.io/py-space-40) in your development environment 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`

Tip

Don't delete or modify any of the existing program statements, as you will need them. Simply insert any additional instructions.

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.

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.

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`

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`

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,	`It's actually fewer than that` `8 people in space right now`

along with the correct number.

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.

Explorer task Temperature

Open the Python program below (ncce.io/py-temp-40) in your development environment.

```
from weather import temperature

print("Where do you live?")
location = input()

temp = temperature(location)
```

The program imports the `temperature` function from the `weather` module, to retrieve the current temperature at a specified location from an online service. This is **not a standard Python component**; it has been created specifically to allow you to perform these tasks.

Step 1

Extend the program so that it displays an appropriate message depending on the range that the current temperature is in.

Example

Note: The current temperature is retrieved from an online service. 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.	`Where do you live?`
The user types in a reply.	`Nuuk`
The program displays the current temperature and a message that depends on the temperature.	`Current temperature in Nuuk is -5.0` `It's freezing cold`

Resources are updated regularly — the latest version is available at: ncce.io/tcc.