



F3.1 String handling

Strings, lists and records · GCSE · OCR J277 2.2.3, AQA 8525 3.2.8, Edexcel
1CP2 6.3.3 · about 15 min

What this lesson is about

Length, indexing, slicing, searching and joining strings, and f-strings.

- Joining strings
- Length and indexing
- Slicing
- Searching
- Building reports with f-strings

Questions

11 marks in all

1. What does this program print?

[1 mark]

```
first = "Bug"
second = "Bot"
print("Hello, " + first + second + ".")
```

Answer:

Hello, BugBot.

+ on strings joins them, and joining adds no spaces: the space is inside "Hello, ".

2. What happens with `print("battery: " + 92)` ?

[1 mark]

- ☐ A TypeError: text and a number cannot be joined with +
- ☐ B It prints battery: 92
- ☐ C It prints battery: + 92
- ☐ D SyntaxError

Answer: A. Python will not join text and a number. Use `str(92)` or an f-string.

3. What does this program print?

[1 mark]

```
speed = 45
print(f"driving at {speed} and half is {speed / 2}")
```

Answer:

driving at 45 and half is 22.5

In an f-string, anything inside `{ }` is worked out and dropped into the text.

4. What does this program print?

[1 mark]

```
word = "BugBot"
print(len(word))
print(word.upper())
```

Answer:

6
BUGBOT

len counts the characters, and upper gives the text in capitals.

5. What does this program print?

[1 mark]

```
print("-" * 5)
```

Answer:

Multiplying a string by a number repeats it.

6. What does this program print?

[1 mark]

```
print(f"{10 / 3:.2f}")
```

Answer:

3.33

:.2f inside the braces shows the number with two decimal places.

7. What does this program print?

[1 mark]

```
word = "BugBot"
print(word[0], word[3], word[-1])
```

Answer:

B B t

Indexes count from 0, and -1 is the last character.

8. What does this program print?

[1 mark]

```
word = "BugBot"
print(word[1:4])
```

Answer:

ugB

A slice starts at the first index and stops before the second: indexes 1, 2 and 3.

9. What does this program print?

[1 mark]

```
message = "wall ahead"  
print(message.find("ahead"), message.find("ball"))
```

Answer:

5 -1

find gives the index where the text starts, or -1 when it is not there.

10. OCR's `name.substring(3, 3)` on "BugBot" gives "Bot". What does the second 3 mean?

[1 mark]

- ☐ A Take 3 characters
- ☐ B Stop at index 3
- ☐ C Start at index 3
- ☐ D Repeat 3 times

Answer: A. In the Exam Reference Language, substring takes a start index and a number of characters. Python's slice takes a stop index instead.

11. What is joining two strings together called?

[1 mark]

- ☐ A Concatenation
- ☐ B Slicing
- ☐ C Casting
- ☐ D Iteration

Answer: A. Concatenation joins strings end to end, with + in Python.

The task: status report

Drive 10 cm, then print **one line** in exactly this shape (your numbers will differ):

```
# the two lines every program starts with: the commands, then the robot
from bugbot import *
connect()

forward(50, distance=10)
x, y = position()
print(f"BugBot at x={x} ...")
```

The hint students can ask for: Drive first, then gather the readings and print them in one line, in the order and wording the task shows.

A solution

```
from bugbot import *
connect()
forward(50, distance=10)
x, y = position()
print(f'BugBot at x={x} y={y}, wall in {distance()} cm, battery {battery()}%')
```

Any program that meets the task's checks is marked correct in the simulator; this is one way, not the only way.