



F1.4 Errors: syntax, runtime and logic

Programming basics · GCSE · OCR J277 2.3.2, AQA 8525 3.2.11, Edexcel

1CP2 1.2.5 · about 15 min

Name _____

Class _____

Date _____

What this lesson is about

Reading an error message, and the three kinds of error by their exam names.

- Read the whole message
- Syntax errors: Python cannot read it
- Runtime errors: it crashes while running
- Logic errors: no message at all
- How to fix things

Questions

6 marks in all

- `print("hello"` is missing its closing bracket. What kind of error is this? [1 mark]
 - ☐ A Syntax error
 - ☐ B Runtime error
 - ☐ C Logic error
 - ☐ D It is not an error
- A program runs with no error message, but the robot drives backwards when it should go forwards. What kind of error is this? [1 mark]
 - ☐ A Logic error
 - ☐ B Syntax error
 - ☐ C Runtime error
 - ☐ D No error: the program finished
- A program prints two lines, then crashes on `print(10 / 0)`. What kind of error is this? [1 mark]
 - ☐ A Runtime error
 - ☐ B Syntax error
 - ☐ C Logic error
 - ☐ D It prints 0
- A program has a syntax error on its last line. How many of its lines run? [1 mark]
 - ☐ A None
 - ☐ B All the lines before the error
 - ☐ C All of them
 - ☐ D Only the last line

5. Which of these would stop the program with an error message?

[1 mark]

Tick every answer that is true.

- ☐ A `wait("two")`
- ☐ B `prin("hi")`
- ☐ C `forward(50, distance=30)` when you meant 20
- ☐ D `stop` with no brackets

6. Put the steps for fixing an error in order.

[1 mark]

Number the lines 1 to 4 to put them in the right order.

- ___ Read the error: find the kind and the line number
- ___ Look at that line, and the line above if it looks fine
- ___ Run again
- ___ Change one thing

The task: fix three errors

This program should turn the LED green, wait a second, drive 30 cm forward into the green zone and print arrived . It has one syntax error, one runtime error and one logic error. Fix them one at a time.

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

led("green"
wait("1")
backward(50, distance=30)
print("arrived")
```

Plan your program here, then type it in and press Run.



Do it on the robot

www.bugbotlab.com/learn/f1-4-errors/

The simulator checks it and tells you when it passes. Nothing to install, no account.

Challenges

1. Write a program with a runtime error on its fifth line and nothing wrong before it. Check that the lines before it still run.

2. Write a program with a logic error that makes the robot drive too far. Swap with a partner and find each other's.
3. Try `print(10 / 0)` . Which of the three kinds of error is it?