

Exercise walk-through

if Statements ■ 2.3

eXercise

You must be able to

- write an **if statement** 条件语句 that runs code only when a condition is true
- add an **else** clause for when the condition is false
- understand how a conditional changes the **flow of control** 控制流

Method — if and else

```
kif+w p(nscore+w oo=+w l+m+mi60p)+w p
+w      nSystemp.n+naoutp.n+naprintlnp(err"npasserr"p)p;
p+w kelse+w p
+w      nSystemp.n+naoutp.n+naprintlnp(err"nfailerr"p)p;
p
```

Method — if and else

The `if` block runs only when the condition is `true`; the `else` block runs when it is `false`.

Method — Flow of control

A conditional changes **which statements run**, letting the program make decisions.

Practice 2.1 ■ 1 mark

State what an if statement does.

Solution 2.1

Worked steps

it runs a block of code only when its condition is true **B1**.

Practice 2.2 ■ 1 mark

State what an else clause does.

Solution 2.2

Worked steps

it runs alternative code when the condition is false **B1**.

Practice 2.3 ■ 1 mark

For `if (n > 0) print "positive"; else print "not positive";`, state the output when `n` is `-3`.

Solution 2.3

Worked steps

not positive **B1**.

Exam-style 3.1 ■ 1 mark

An if statement runs its block when the condition is

A false

B true

C null

D 0

Solution 3.1

Method: if and else

A false

B true



C null

D 0

Worked steps

B.

Exam-style 3.2 ■ 1 mark

An else clause runs when the condition is

A true

B false

C missing

D positive

Solution 3.2

Method: if and else

A true

B false



C missing

D positive

Worked steps

B.

Exam-style 3.3 ■ 1 mark

```
if (t >= 100) print "boiling"; else print "not boiling";.
```

- (a) State the output when t is 100.
- (b) State the output when t is 50.
- (c) Name what an if statement changes.

Solution 3.3

Worked steps

(a) boiling **B1**. (b) not boiling **B1**. (c) the flow of control **B1**.