

Exercise walk-through

Variables and Data Types ■ 1.2

eXercise

You must be able to

- understand that a **variable** 变量 is a named location in memory
- declare variables of the primitive types `int`, `double`, and `boolean`
- distinguish an integer from a **floating-point** 浮点 value
- use meaningful, valid **identifiers** 标识符

Method — Variables and primitive types

A **variable** is a named memory location that stores a value. Each variable has a fixed **data type**:

- `int` — a whole number, e.g. `int age = 17;`
- `double` — a decimal (floating-point) number, e.g. `double price = 2.5;`
- `boolean` — true or false, e.g. `boolean done = false;`

Method — Identifiers

Use clear, valid names (letters, digits, _; not starting with a digit), such as `studentCount`.

Practice 2.1 ■ 2 marks

Name the three primitive types above.

Solution 2.1

Method: Variables and primitive types

Worked steps

int, double, boolean **B1** **B1** *for any two; for all three.*

Practice 2.2 ■ 1 mark

State which type stores a whole number.

Solution 2.2

Method: Variables and primitive types

Worked steps

```
int B1.
```

Practice 2.3 ■ 1 mark

Write a declaration for a double variable named `price` holding 4.99.

Solution 2.3

Method: Variables and primitive types

Worked steps

```
double price = 4.99; B1.
```

Exam-style 3.1 ■ 1 mark

Which type stores true or false?

A int

B double

C boolean

D String

Solution 3.1

Method: Variables and primitive types

- A int
- B double
- C boolean
- D String



Worked steps

C.

Exam-style 3.2 ■ 1 mark

A valid declaration of an integer is

A `int x = 3.5;`

B `int x = 3;`

C `double x = true;`

D `int = 3;`

Solution 3.2

A `int x = 3.5;`

B `int x = 3;`



C `double x = true;`

D `int = 3;`

Worked steps

B.

Exam-style 3.3 ■ 1 mark

Consider `int count = 5;` and `double avg = 8.5;`.

- (a) State the type of `count`.
- (b) State the type of `avg`.
- (c) State whether `boolean done = 1;` is valid.

Solution 3.3

Method: Variables and primitive types

Worked steps

(a) `int` B1. (b) `double` B1. (c) no — a boolean must be true or false B1.