



Java Magazine

Written by the Java community for Java and JVM developers

Quiz yourself: The syntax of generated record classes in Java

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What type of accessor do you need to access a record's fields?

[Java 17, which is a long-term support release, is a significant step forward from Java 11. Although Java 17 became generally available in September 2021, the matching version of the certification exam has not been released as of this quiz's publication date. The exam is in the later stages of development, and we're excited to begin presenting questions based on the objectives for the new exam. —Ed.]

Given the record

```
public record Period (int aLength) { }
```

and the code fragment

```
var period = new Period(60);
```

```
var period = new Period(00,00);
```

Which code below is valid in the scope of the variable `period`? Choose one.

A. `int i = period.aLength;`

The answer is A.

B. `int i = period.aLength();`

The answer is B.

C. `int i = period.getaLength();`

The answer is C.

D. `int i = period.getALength();`

The answer is D.

Answer. This question explores the syntax of generated record classes (covered in [JEP 395](#), which was released in Java 16).

For each argument declared in the record header, the Java compiler generates two things.

- A `private final` variable of the same type and name as in the header
- A public accessor method of the same return type and name as in the header

Therefore, the expanded form of the record shown above would include elements of the following form:

```
public final class Period extends java.lang.Record {  
    private final int aLength;  
    public int aLength() { return aLength; }  
    // ... remainder of generated code  
}
```

[Copy code snippet](#)

This is sufficient for you to know right away that option B is correct, because access to the field `aLength` is through the method `aLength()`. What about the other options?

Option A is incorrect because a record's fields are `private` and may not be accessed in that way except inside the top-level curly braces enclosing the field declaration. For the sake of a question in the style of the certification exam, you should assume that since the declaration of the `Period` record is shown in its entirety, the `period` variable is shown separately and that the access is not made from a scope allowing direct access to the `private` field.

Option C demonstrates the JavaBeans convention of providing a `getXxxx()` method for access to a bean attribute. However, JavaBeans, which are POJOs (plain old Java objects), are mutable classes—but records are immutable tuple-like classes. More importantly, the generated code for records does

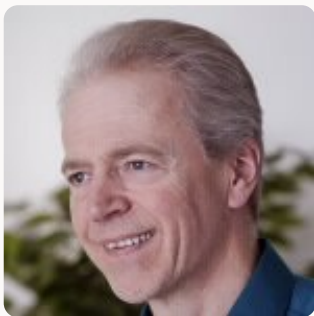
not conform to the JavaBeans convention. From this, you can see that option C is incorrect.

Option D is also incorrect. The code demonstrates a kind of getter method, but the method name is incorrect for a record and even incorrect for JavaBeans.

Conclusion. The correct answer is option B.

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- [Quiz yourself: Java records, constructors, and the canonical constructor](#)
- [Records come to Java](#)
- [Simpler object and data serialization using Java records](#)



Simon Roberts

Simon Roberts joined Sun Microsystems in time to teach Sun's first Java classes in the UK. He created the Sun Certified Java Programmer and Sun Certified Java Developer exams. He wrote several Java certification guides and is currently a freelance educator who publishes recorded and live video training through Pearson InformIT (available direct and through the O'Reilly Safari Books Online service). He remains involved with Oracle's Java certification projects.



Mikalai Zaikin

Mikalai Zaikin is a lead Java developer at IBA IT Park in Minsk, Belarus. During his career, he has helped Oracle with development of Java certification exams, and he has been a technical reviewer of several Java certification books, including three editions of the famous *Sun Certified Programmer for Java* study guides by Kathy Sierra and Bert Bates.

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