



# Java Certified #14

A question lead guide to prepare Java certification



## Using Object-Oriented Concepts in Java

Given:

```
record WithInstanceField(String foo, int bar) {  
    double fuz;  
}  
  
record WithStaticField(String foo, int bar) {  
    static double wiz;  
}  
  
record ExtendingClass(String foo) extends Exception {}  
record ImplementingInterface(String foo) implements Cloneable {}
```

Which records compile? (Select 2)

- **WithInstanceField**
- **WithStaticField**
- **ExtendingClass**
- **ImplementingInterface**

## WithStaticField ImplementingInterface

Let's explore one record at a time:

```
record WithInstanceField(String foo, int bar) {  
    double fuz;  
}
```

Do not compile because the Instance field 'fuz' is not allowed in the record.

```
record WithStaticField(String foo, int bar) {  
    static double wiz;  
}
```

Does compile.

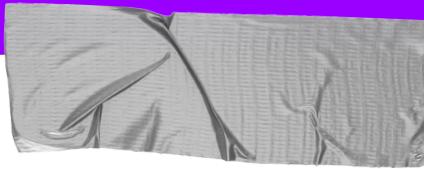
```
record ExtendingClass(String foo) extends Exception {}
```

It does not compile because No extends clause allowed for record.

```
record ImplementingInterface(String foo) implements Cloneable {}
```

Does compile.

Details on JEP 395: <https://openjdk.org/jeps/395>



## Using Object-Oriented Concepts in Java

Given:

```
interface SmartPhone {  
    boolean ring();  
}
```

```
class Iphone15 implements SmartPhone {  
    boolean isRinging;  
    boolean ring() {  
        isRinging = !isRinging;  
        return isRinging;  
    }  
}
```

Choose the right statement.

- **SmartPhone interface does not compile**
- **Iphone15 class does not compile**
- **Everything compiles**
- **An exception is thrown at running Iphone15.ring();**

# Iphone15 class does not compile

In the provided code:

1. **SmartPhone Interface**
  - o The `SmartPhone` interface declares a method `boolean ring();`
  - o This compiles correctly because there is nothing wrong with the syntax or definition of the interface.
2. **Iphone15 Class**
  - o The `Iphone15` class implements the `SmartPhone` interface but defines the `ring()` method with default (package-private) access.
  - o According to Java rules, methods implementing an interface must have the same or greater access visibility than the interface method. Since `ring()` in the `SmartPhone` interface is implicitly `public`, the overriding `ring()` method in the `Iphone15` class must also be declared `public`.
  - o As written, the `Iphone15` class does not compile because the `ring()` method attempts to reduce the access level, which is not allowed.
3. **Other Options**
  - o **Smartphone:** The `SmartPhone` interface compiles correctly, so this is incorrect.
  - o **Everything compiles:** Not everything compiles; the `Iphone15` class has a compilation error.
  - o **An exception is thrown:** Since the code doesn't compile, an exception cannot be thrown at runtime.

## Key Point:

The error message is:

```
'ring()' in 'Iphone15' clashes with 'ring()' in 'SmartPhone'; attempting to assign weaker access privileges ('package-private'); was 'public'.
```



## Working with Arrays and Collections

Given the following snippets,

Which variable prints 2025-W01-2 (present-day is 12/31/2024).

- ```
var now = LocalDate.now();
var format1 = new DateTimeFormatter( ISO_WEEK_DATE );
System.out.println( now.format( format1 ) );
```
- ```
var now = LocalDate.now();
var format2 = DateTimeFormatter.ISO_WEEK_DATE;
System.out.println( now.format( format2 ) );
```
- ```
var now = LocalDate.now();
var format3 = new DateFormat( WEEK_OF_YEAR_FIELD );
System.out.println( now.format( format3 ) );
```
- ```
var now = LocalDate.now();
var format4 = DateFormat.getDateInstance( WEEK_OF_YEAR_FIELD );
System.out.println( now.format( format4 ) );
```

```
var now = LocalDate.now();
var format2 = DateTimeFormatter.ISO_WEEK_DATE;
System.out.println( now.format( format2 ) );
```

Explanation:

1. var format1 = new DateTimeFormatter(ISO\_WEEK\_DATE);
  - o This does not compile because there is no such constructor in the `DateTimeFormatter` class.
2. var format2 = DateTimeFormatter.ISO\_WEEK\_DATE;
  - o This compiles successfully. `ISO_WEEK_DATE` is a predefined constant in the `DateTimeFormatter` class that formats dates according to the ISO-8601 week-based calendar system.
3. var format3 = new DateFormat(WEEK\_OF\_YEAR\_FIELD);
  - o This does not compile because `DateFormat` is an abstract class and cannot be directly instantiated.
4. var format4 = DateFormat.getDateInstance(WEEK\_OF\_YEAR\_FIELD);
  - o This does not work as expected because `DateFormat` does not provide functionality to format a `LocalDate` instance in this manner.

When calling `now.format(REPLACE_HERE)` with the correct formatter, `format2` (which is `DateTimeFormatter.ISO_WEEK_DATE`) successfully formats the date `2024-12-31` into the ISO week date format: `2025-W01-2`.



<https://bit.ly/javaOCP>