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Java 11 – Features and Comparison

Difficulty Level : Basic   ●   Last Updated : 19 Feb, 2022

Every 6 months, Oracle releases new Java versions. The September Java 11 version is already making a lot of buzz in the computer science world even before it was released by declaring that from now on Java is gonna be paid for commercial use. The following articles will show important features, enhancements, and deprecated features about JDK 11.

Important Changes and Information

- The deployment stack required for running applets and web applications has been removed from JDK which was deprecated in JDK 9.
- An entire section of supported browsers has been removed from the list of supported configurations due to the unavailability of the deployment stack.
- Auto-update has been removed from JRE installations in Windows and macOS.
- JavaFX and Java Mission Control is now available as a separate download.
- Java language translation for French, German, Italian, Korean, Portuguese (Brazilian), Spanish, and Swedish is no longer provided.

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1. New String Methods:

isBlank(): This is a boolean method. It just returns true when a string is empty and vice-versa.

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```java
// Java Program to demonstrate
// the working of isBlank() method

class GFG {
    public static void main(String args[])
    {
        String str1 = "";
        System.out.println(str1.isBlank());

        String str2 = "GeeksForGeeks";
        System.out.println(str2.isBlank());
    }
}
```

Output

```
true
false
```

lines(): This method is to return a collection of strings that are divided by line terminators.

Java

```java
// Java Program to demonstrate
// the working of lines() method

import java.util.*;

class GFG {
    public static void main(String args[])
    {
        String str = "Geeks\nFor\nGeeks";
        System.out.println(
            str.lines().collect(Collectors.toList()));
    }
}
```

Geeks

repeat(n): Result is the concatenated string of original string repeated the number of times in the argument.

Java

```java
// Java Program to demonstrate
// the working of repeat() method

class GFG {
    public static void main(String args[])
    {
        String str = "GeeksForGeeks";
        System.out.println(str.repeat(4));
    }
}
```

Output

```
GeeksForGeeksGeeksForGeeksGeeksForGeeksGeeksForGeeks
```

stripLeading(): It is used to remove the white space which is in front of the string

Java

```java
// Java Program to demonstrate
// the working of stripLeading() method

class GFG {
    public static void main(String args[])
    {
        String str = " GeeksForGeeks";
        System.out.println(str.stripLeading());
    }
}
```

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stripTrailing(): It is used to remove the white space which is in the back of the string

Java

```java
// Java Program to demonstrate
// the working of stripTrailing() method

class GFG {
    public static void main(String args[])
    {
        String str = "GeeksForGeeks ";
        System.out.println(str.stripTrailing());
    }
}
```

Output

```
GeeksForGeeks
```

strip(): It is used to remove the white spaces which are in front and back of the string

Java

```java
// Java Program to demonstrate
// the working of strip() method

class GFG {
    public static void main(String args[])
    {
        String str = " GeeksForGeeks ";
        System.out.println(str.strip());
    }
}
```

Output

GeeksForGeeks

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writeString(): This is to write some content in a file.

```
jshell>Files.writeString(Path.of(example.txt), "GeeksForGeeks!");
```

readString(): This is used to read the contents of a file.

```
jshell>Files.readString(Path.of(example.txt));

Output: "GeeksForGeeks!"
```

isSameFile(): This method is used to know whether two paths locate the same file or not.

```
jshell>Files.isSameFile(Path.of("example1.txt"), Path.of("example1.txt"));
Output: true


jshell>Files.isSameFile(Path.of("example2.txt"), Path.of("example1.txt"));
Output: false
```

3. Pattern Recognizing Methods

asMatchPredicate(): This method is similar to Java 8 method asPredicate(). Introduced in JDK 11, this method will create a predicate if the pattern matches with the input string.

```
jshell>var str = Pattern.compile("aba").asMatchPredicate();

jshell>str.test(aabb);
Output: false


jshell>str.test(aba);
Output: true
```

Epsilon Garbage Collector

Its goals are:-

- Performance testing
- Memory pressure testing
- last drop latency improvements

5. Removed the Java EE and CORBA modules

These modules were deprecated in Java 9 with a declaration to remove those in further JDK versions.

6. Removal of thread functions

stop(Throwable obj) and destroy() objects that have been removed from the JDK 11 because they only throw UnSupportedOperation and NoSuchMethodError respectively. Other than that, they were of no use.

7. TimeUnit Conversion

This method is used to convert the given time to a unit like DAY, MONTH, YEAR, and for time too.

```
jshell>TimeUnit c = TimeUnit.DAYS;
Output: DAYS


jshell>c.convert(Duration.ofHours(24));
Output: 1


jshell>c.convert(Duration.ofHours(50));
Output: 2
```

Optional.isEmpty(): This method returns true if the value of any object is null and else returns false.

```
jshell>Optional str = Optional.empty();
jshell>str.isEmpty();
Output: true
```

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Output: `false`

8. Local-Variable Syntax for Lambda Parameters

JDK 11 allows 'var' to be used in lambda expressions. This was introduced to be consistent with the local 'var' syntax of Java 10.

Java

```java
// Java program to show the Variable
// used in the lambda expression

public class VarInLambdaExample {
    public static void main(String[] args)
    {
        IntStream.of(1, 2, 3, 5, 6, 7)
            .filter((var i) -> i % 2 == 0)
            .forEach(System.out::println);
    }
}
```

Output:

```
2
6
```

Java

```java
// Variable without using lambda expression

public class WithoutVarInLambdaExample {
    public static void main(String[] args)
    {
        IntStream.of(1, 2, 3, 5, 6, 7)
            .filter(i -> i % 2 == 0)
            .forEach(System.out::println);
    }
```

2

6

Removed Features and Options

1. Removal of com.sun.awt.AWTUtilities Class
2. Removal of Lucida Fonts from Oracle JDK
3. Removal of appletviewer Launcher
4. Oracle JDK's javax.imageio JPEG Plugin No Longer Supports Images with alpha
5. Removal of sun.misc.Unsafe.defineClass
6. Removal of Thread.destroy() and Thread.stop(Throwable) Methods
7. Removal of sun.nio.ch.disableSystemWideOverlappingFileLockCheck Property
8. Removal of sun.locale.formatasdefault Property
9. Removal of JVM-MANAGEMENT-MIB.mib
10. Removal of SNMP Agent
11. Removal of Java Deployment Technologies
12. Removal of JMC from the Oracle JDK
13. Removal of JavaFX from the Oracle JDK
14. JEP 320 Remove the Java EE and CORBA Modules

Deprecated Features and Options

1. ThreadPoolExecutor Should Not Specify a Dependency on Finalization
2. JEP 335 Deprecate the Nashorn JavaScript Engine
3. Deprecate -XX+AggressiveOpts
4. Obsolete Support for Commercial Features
5. Deprecate Stream-Based GSSContext Methods
6. JEP 336 Deprecate the Pack200 Tools and API