



# Programming Fundamentals 1

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# IntelliJ and Spot

Basic Spot Class in our new IDE

**Basic Spot Class**  



classes · methods ·  
behaviour · overloading



# Agenda

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- ☐ The IntelliJ IDE
- ☐ New Project Setup
- ☐ Basic Spot Class



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# The IntelliJ IDE



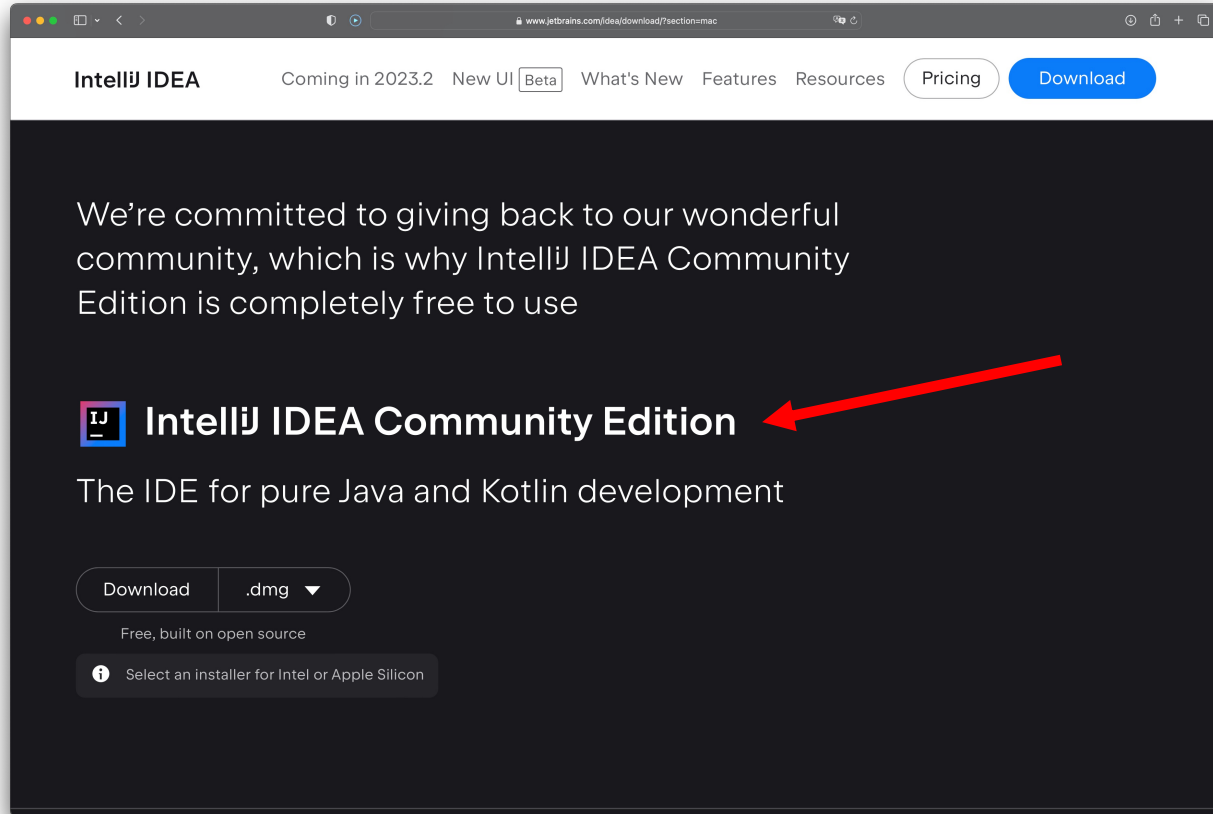




# IntelliJ - An industry standard IDE

The screenshot shows the IntelliJ IDEA website for macOS. At the top, there's a navigation bar with 'JET BRAINS' logo and links for 'Developer Tools', 'Team Tools', 'Education', 'Solutions', 'Support', and 'Store'. Below this, the main header features 'IntelliJ IDEA', 'Coming in 2023.2', 'New UI [Beta]', 'What's New', 'Features', 'Resources', 'Pricing', and a prominent blue 'Download' button. The operating system selection tabs are 'Windows', 'macOS' (which is underlined and highlighted by a red arrow), and 'Linux'. The main content area displays the IntelliJ IDEA logo, the text 'IntelliJ IDEA Ultimate', and 'The Leading Java and Kotlin IDE'. Below this, there's a 'Download' button with a dropdown menu currently showing '.dmg'. A note indicates a 'Free 30-day trial' and a button to 'Select an installer for Intel or Apple Silicon'. On the right side, there's a preview of the IntelliJ IDEA IDE interface showing a Java code editor with a project structure on the left and a terminal at the bottom. Below the IDE preview, there are links for 'Version: 2023.14', 'System requirements', 'Installation instructions', and 'Other versions'.

# IntelliJ - An industry standard IDE

A screenshot of the IntelliJ IDEA download page. The browser address bar shows "www.jetbrains.com/idea/download?section=mac". The page header includes "IntelliJ IDEA", "Coming in 2023.2", "New UI Beta", "What's New", "Features", "Resources", "Pricing", and a blue "Download" button. The main content area has a dark background with white text. It says "We're committed to giving back to our wonderful community, which is why IntelliJ IDEA Community Edition is completely free to use". Below this is the IntelliJ IDEA logo (a blue square with "IJ" and a white horizontal line) followed by the text "IntelliJ IDEA Community Edition". A red arrow points from the right towards this text. Underneath is the subtitle "The IDE for pure Java and Kotlin development". At the bottom, there is a "Download" button with a ".dmg" dropdown menu, the text "Free, built on open source", and a link "Select an installer for Intel or Apple Silicon".



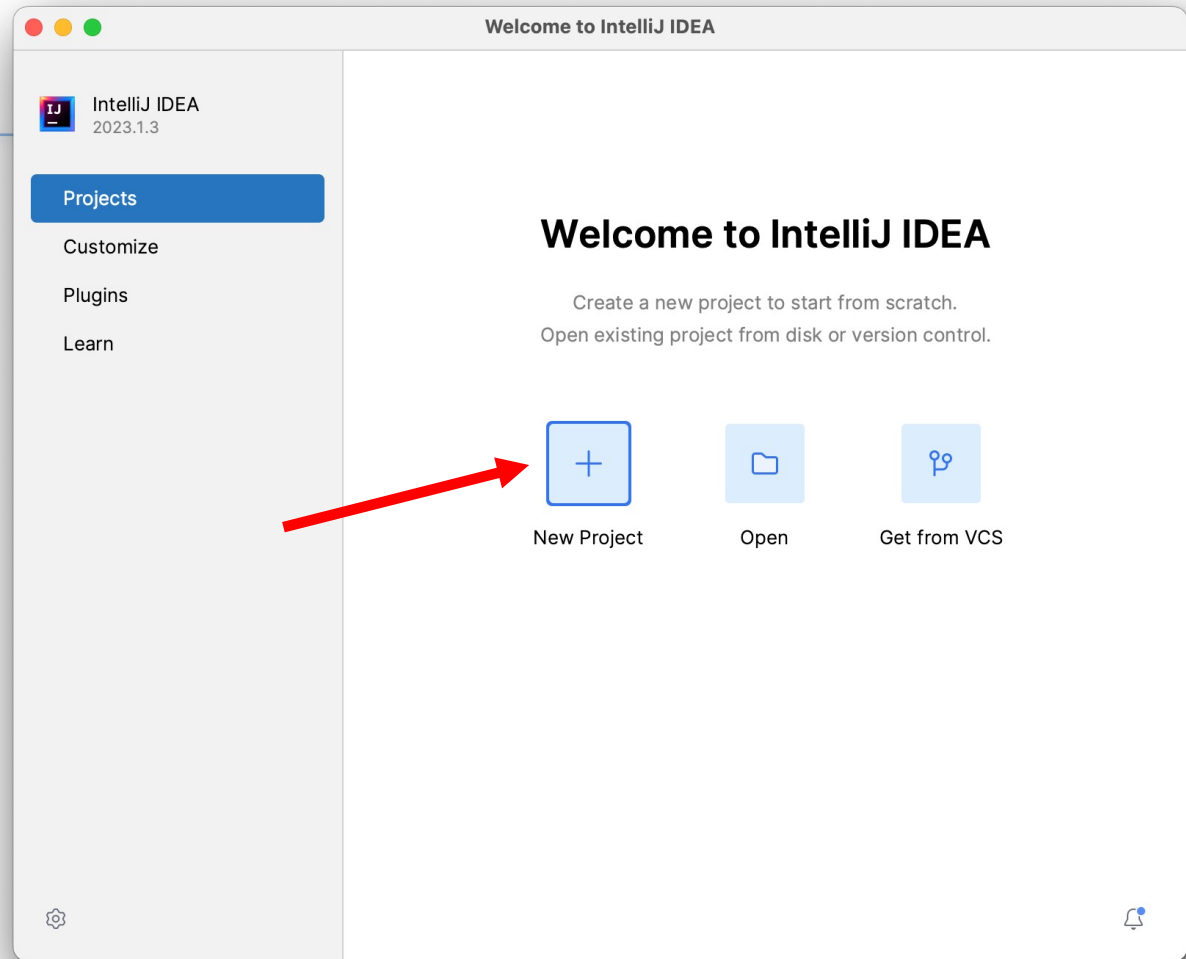
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# New Project Setup





# Launch IntelliJ





# New Java Project

**New Project**

Empty Project

Generators

- Maven Archetype
- JavaFX
- Kotlin Multiplatform
- Compose Multiplatform
- IDE Plugin
- Android

Name:

Location:

Project will be created in: ~/Downloads/java\_apps/SpotConsoleV1.0

Create Git repository

Language:

Build system:

JDK:

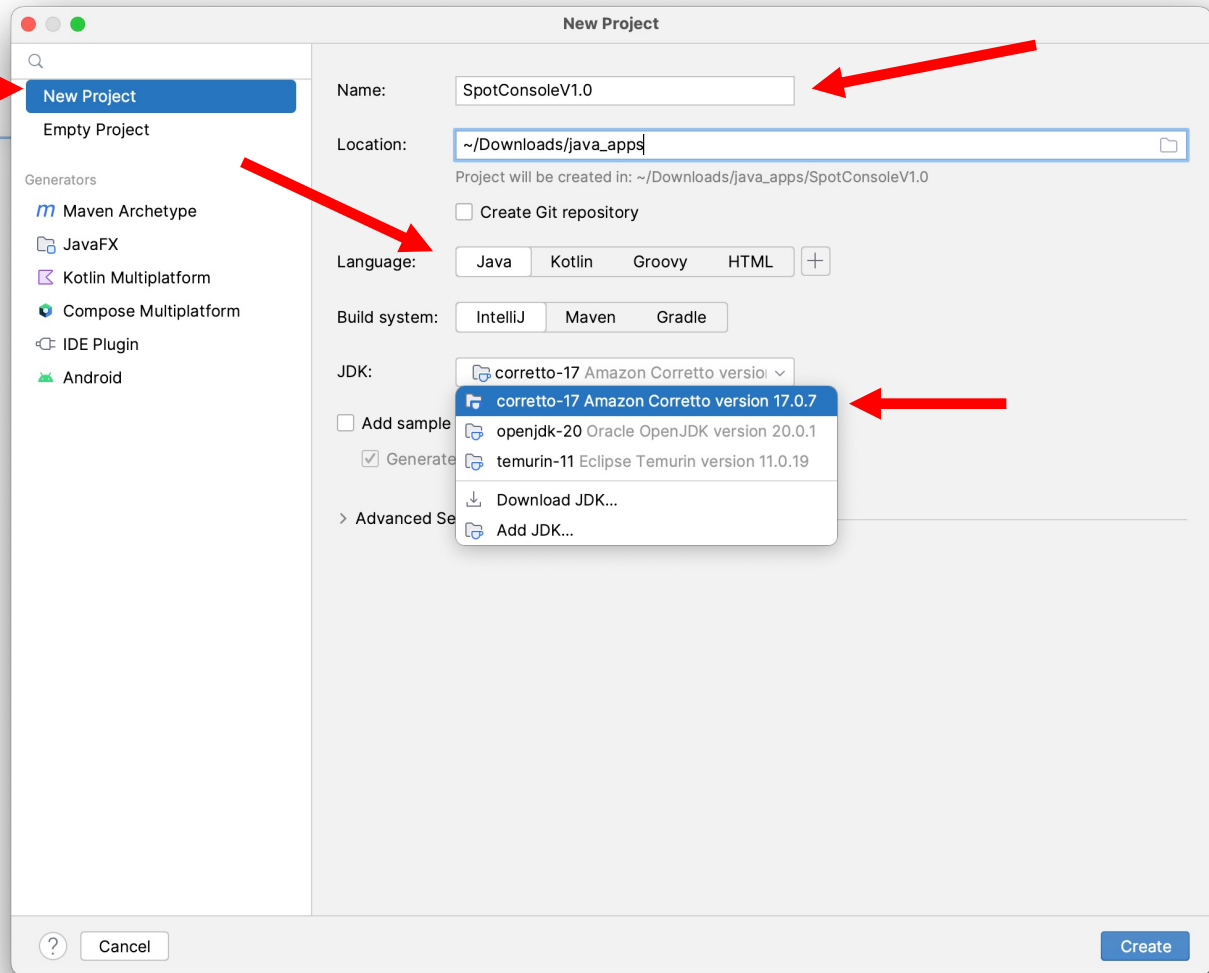
Add sample code

Generate code with onboarding tips

> Advanced Settings

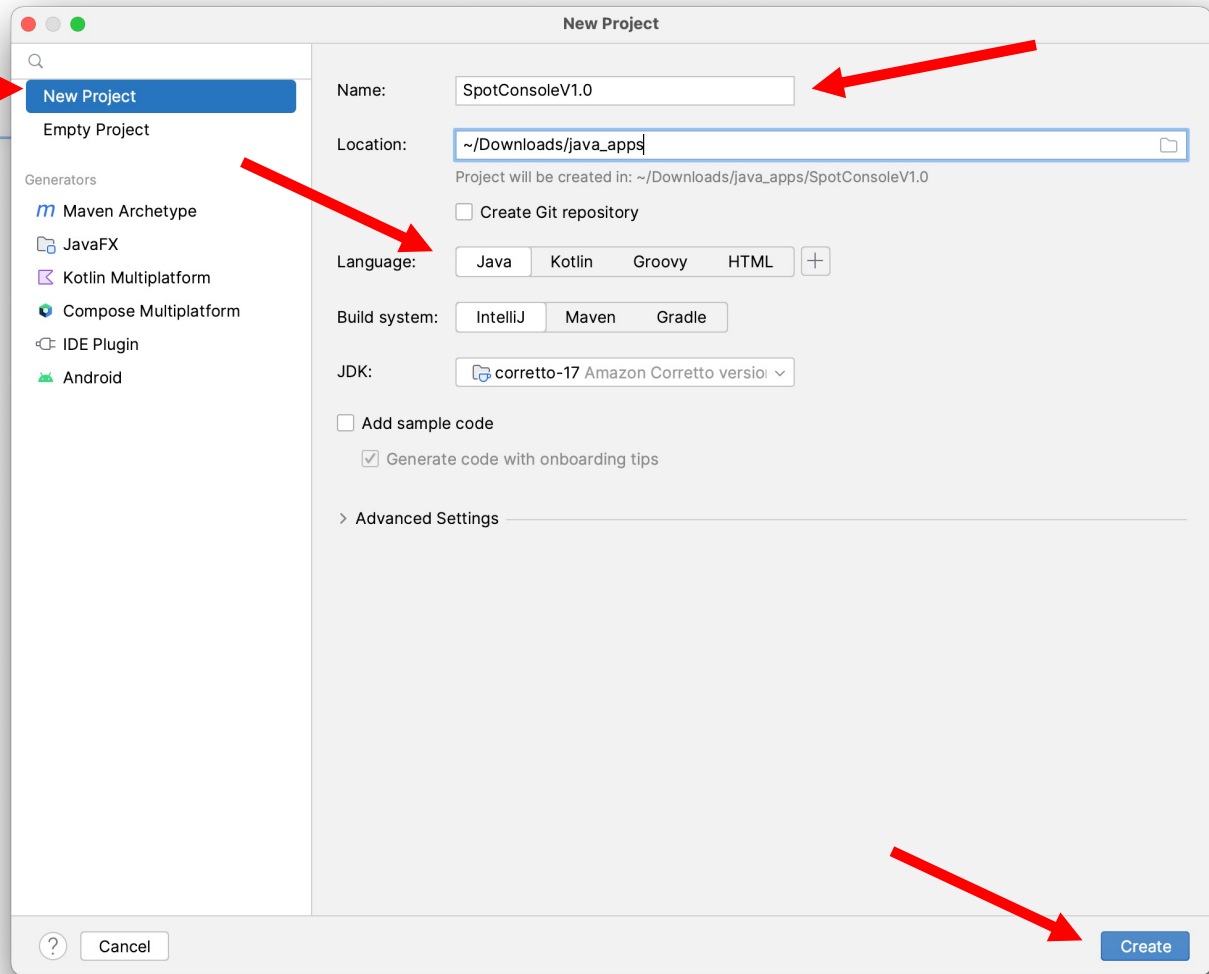


# New Java Project

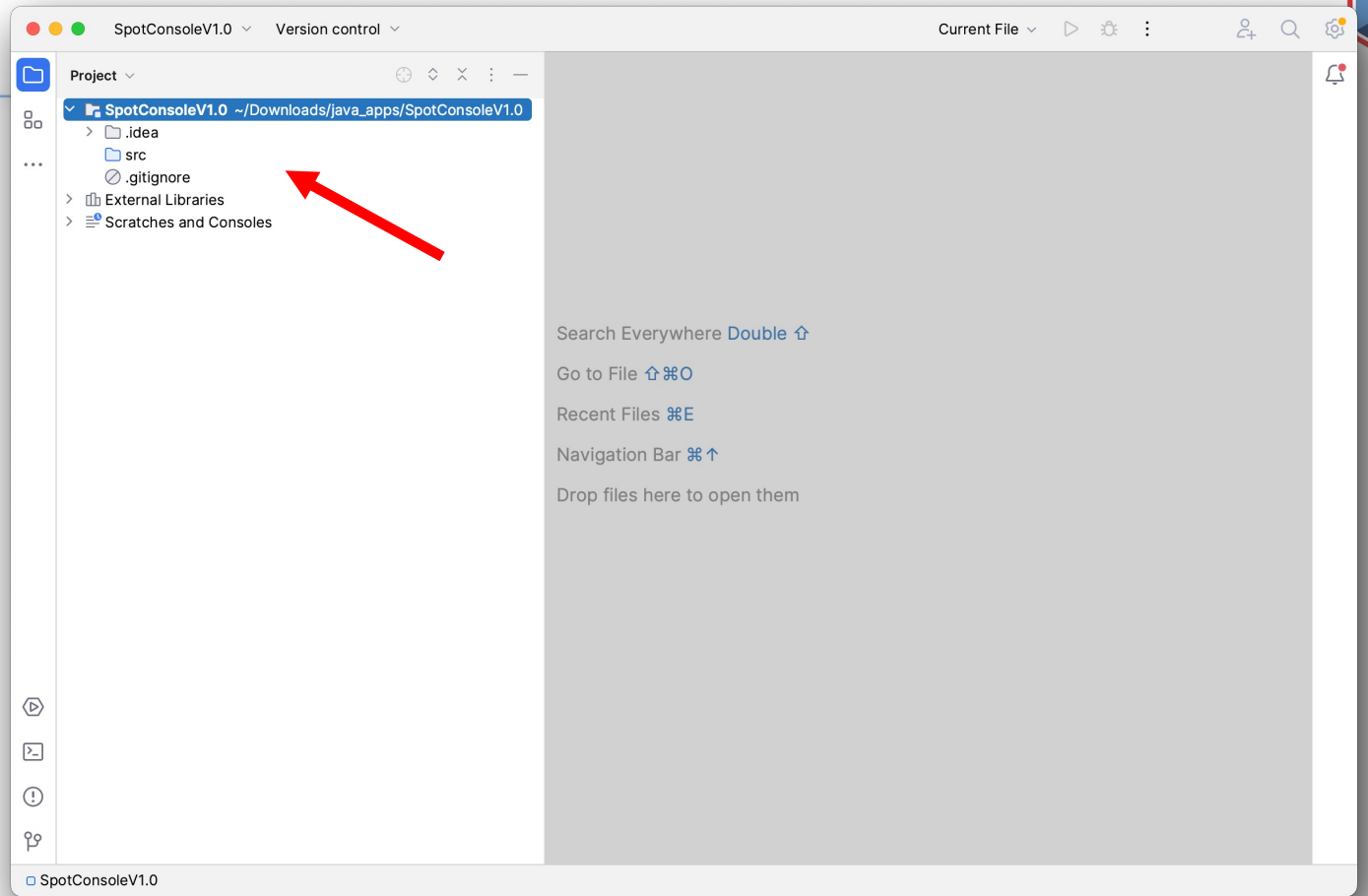




# New Java Project

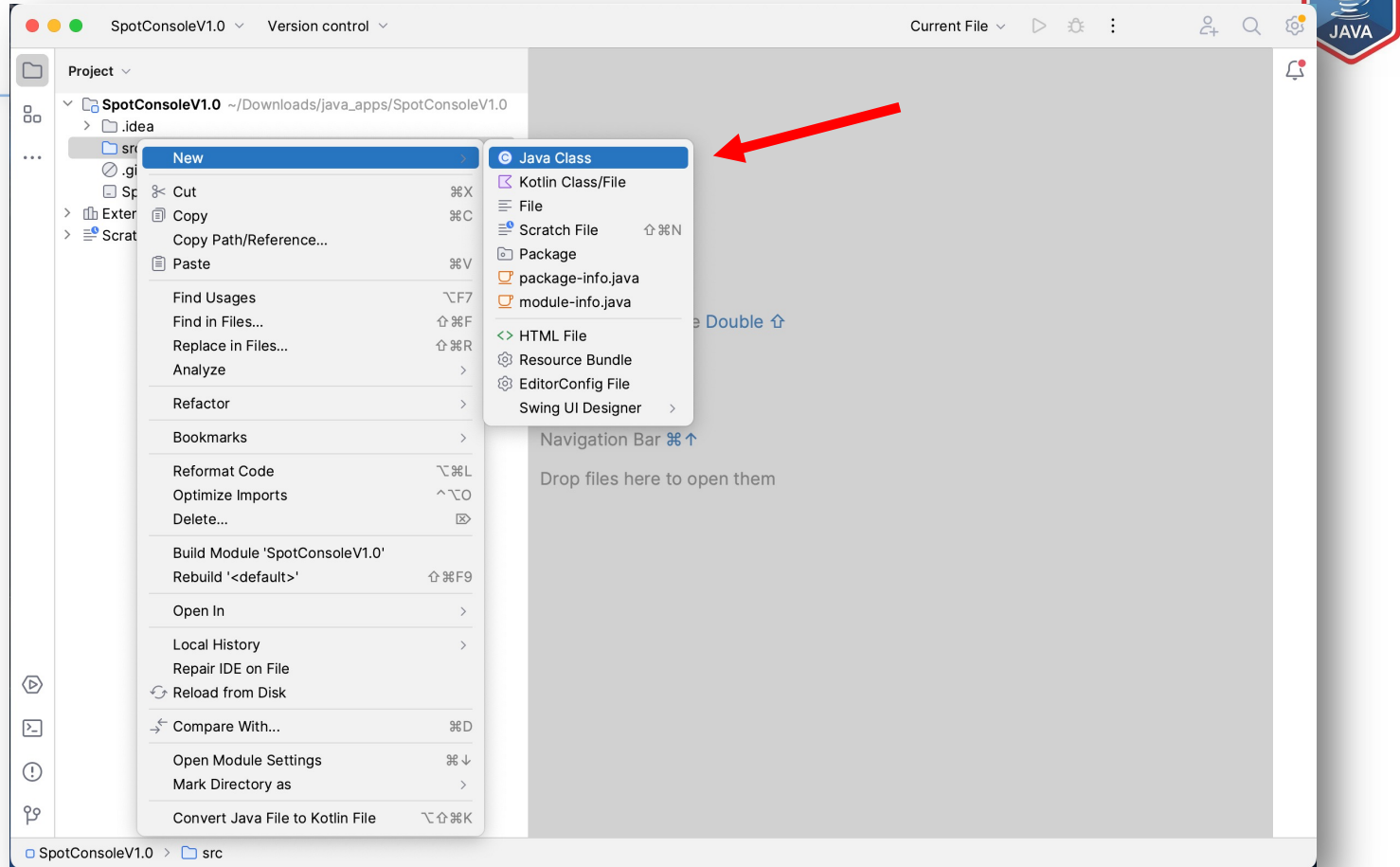


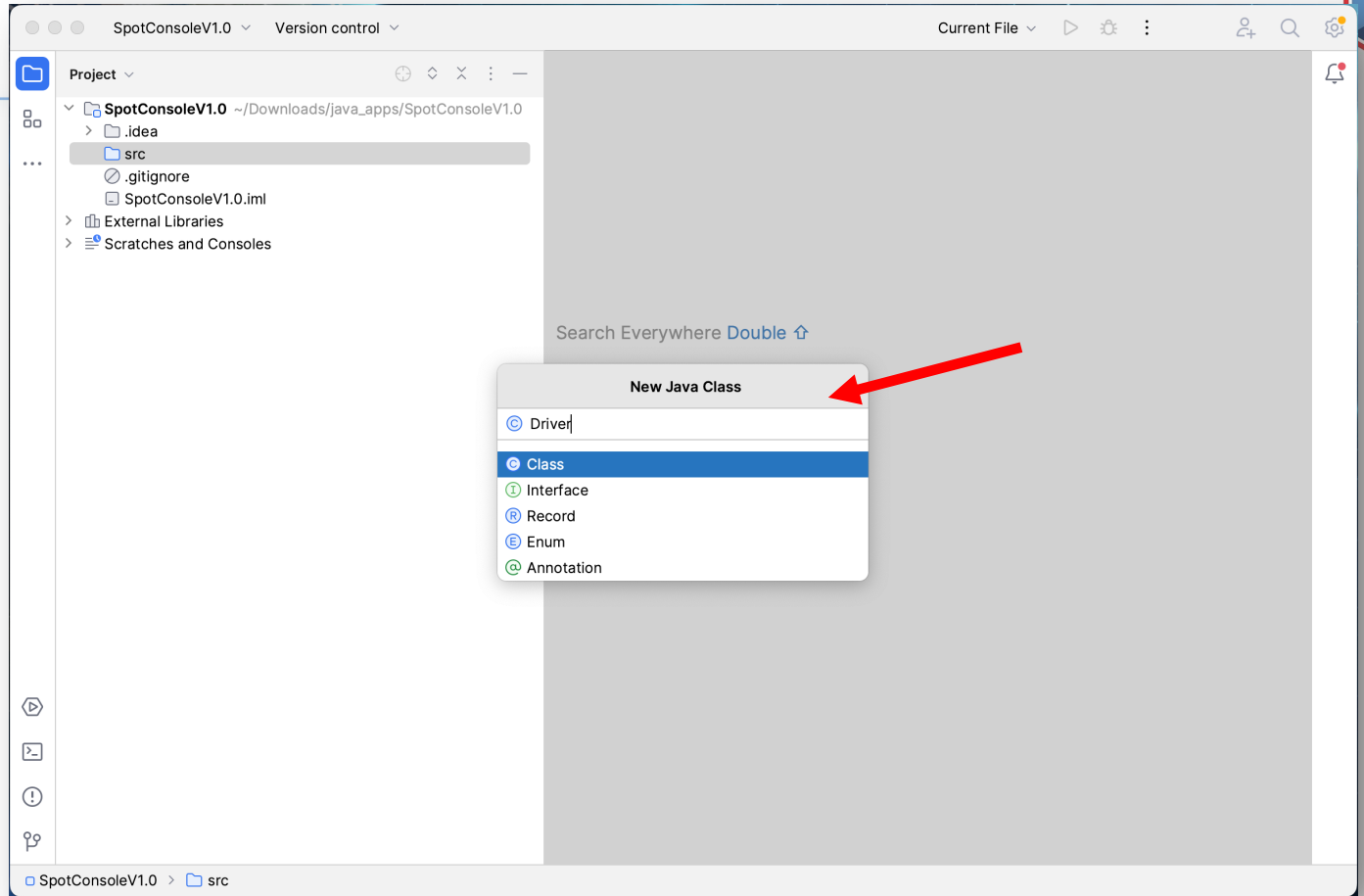
# New Project





# Create New Class

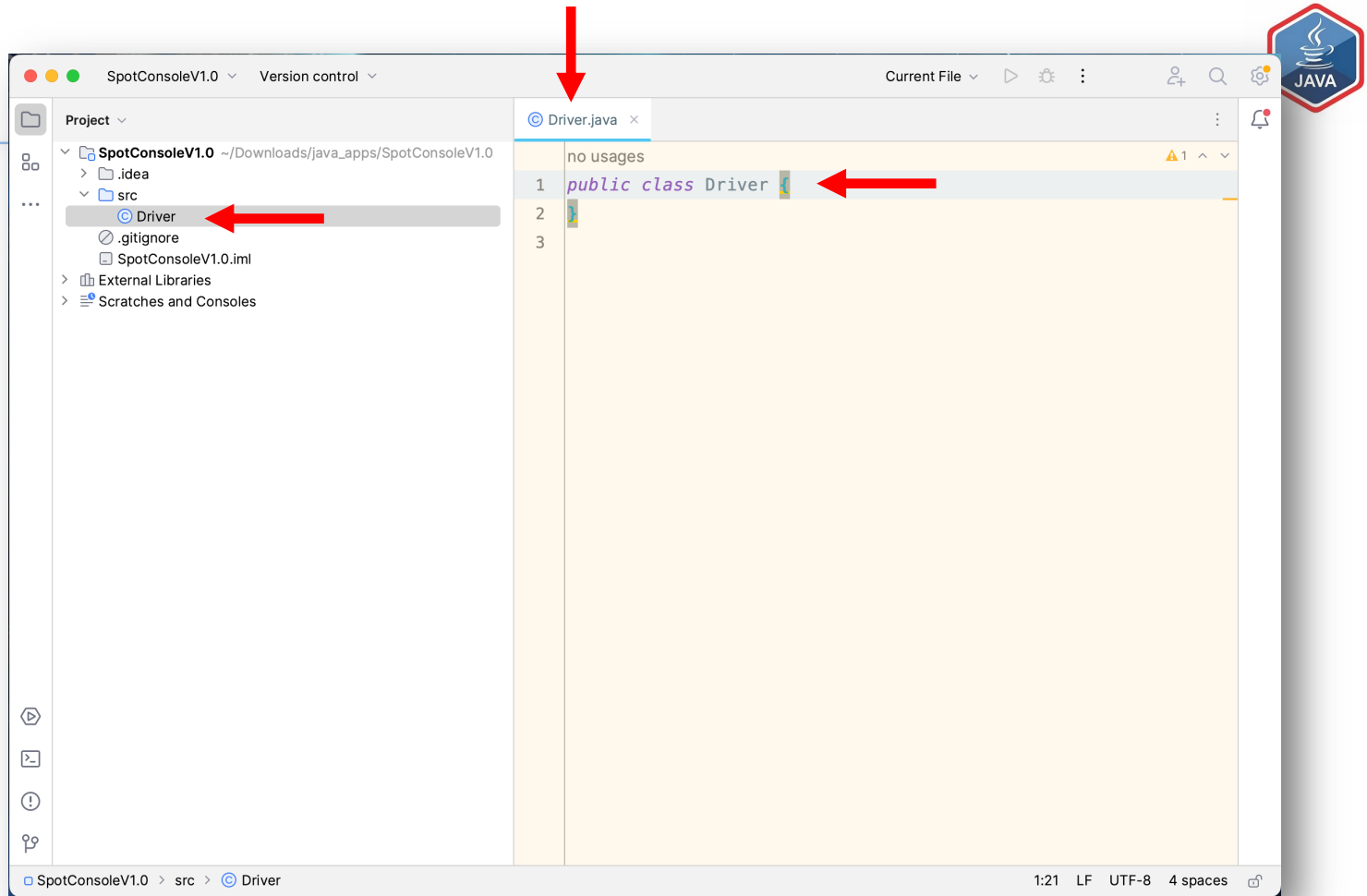




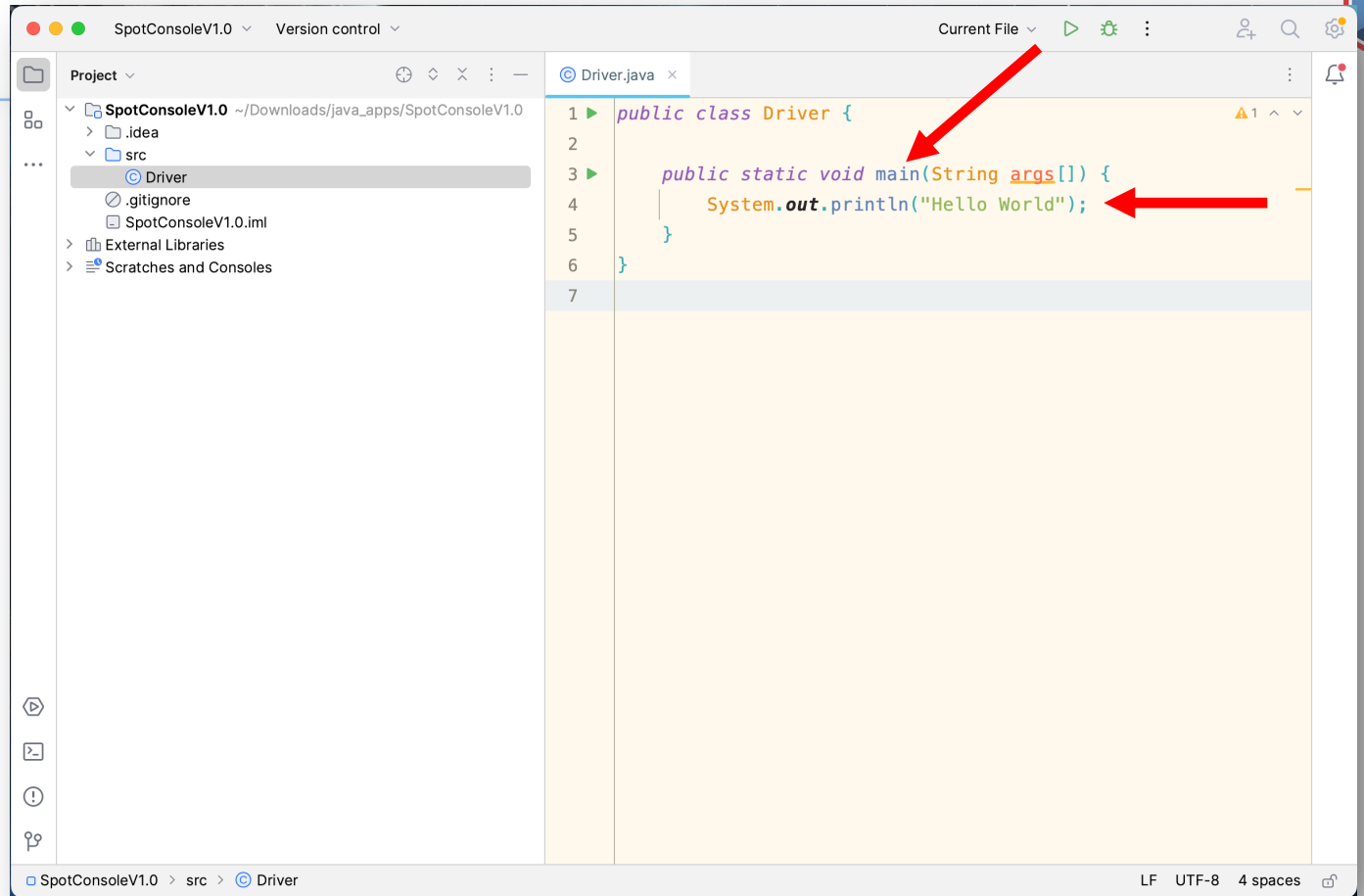
Create  
New  
Class

Driver

# Create New Class Driver



# main method

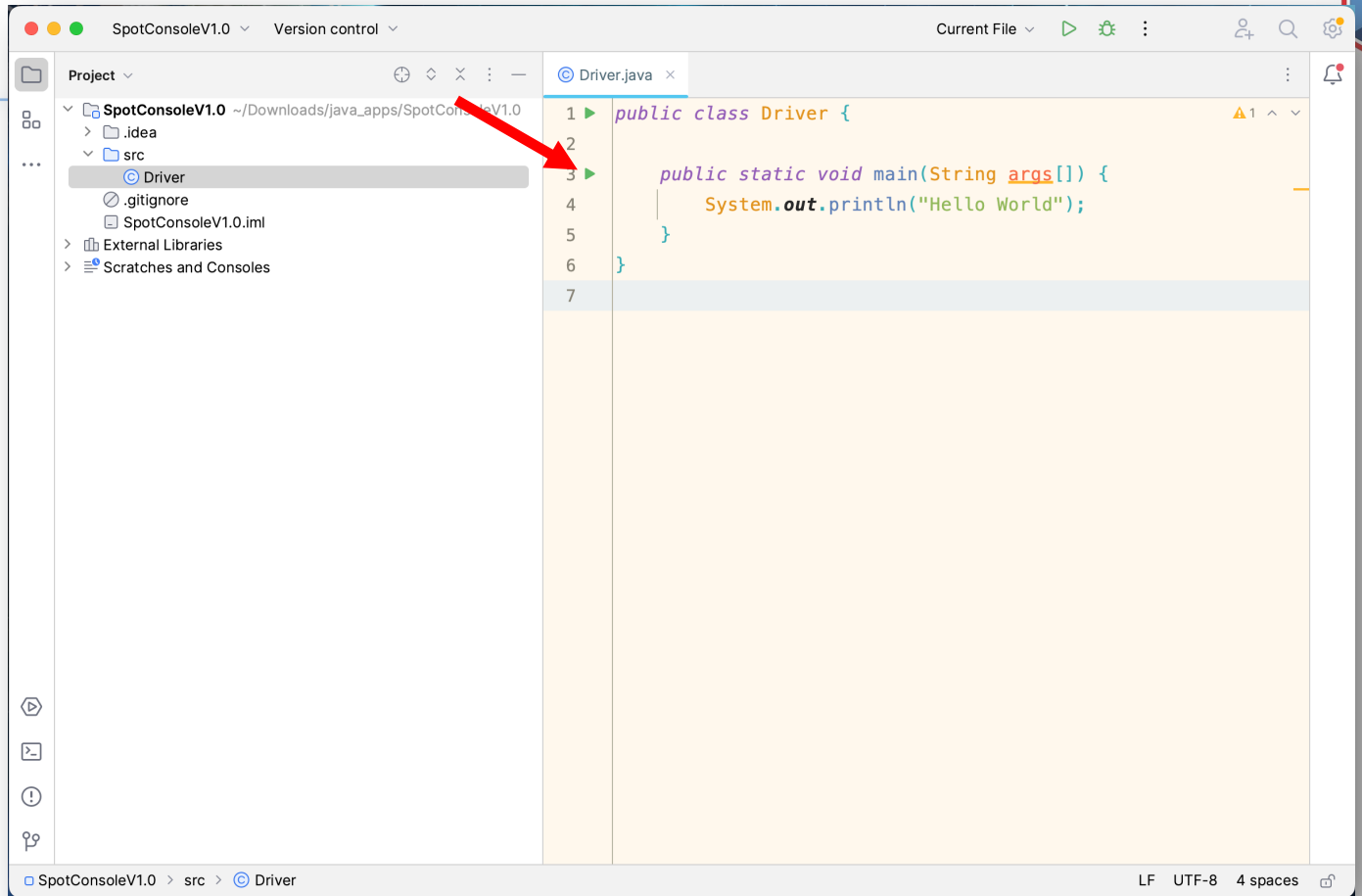


```
1 public class Driver {
2
3     public static void main(String args[]) {
4         System.out.println("Hello World");
5     }
6 }
7
```

The screenshot shows an IDE window for a project named "SpotConsoleV1.0". The file explorer on the left shows the project structure, including a "src" folder containing a "Driver" class. The main editor displays the code for "Driver.java". The code defines a public class "Driver" with a public static void main method that prints "Hello World". Two red arrows are overlaid on the image: one points to the class name "Driver" on line 1, and the other points to the "main" method signature on line 3.



# Run App



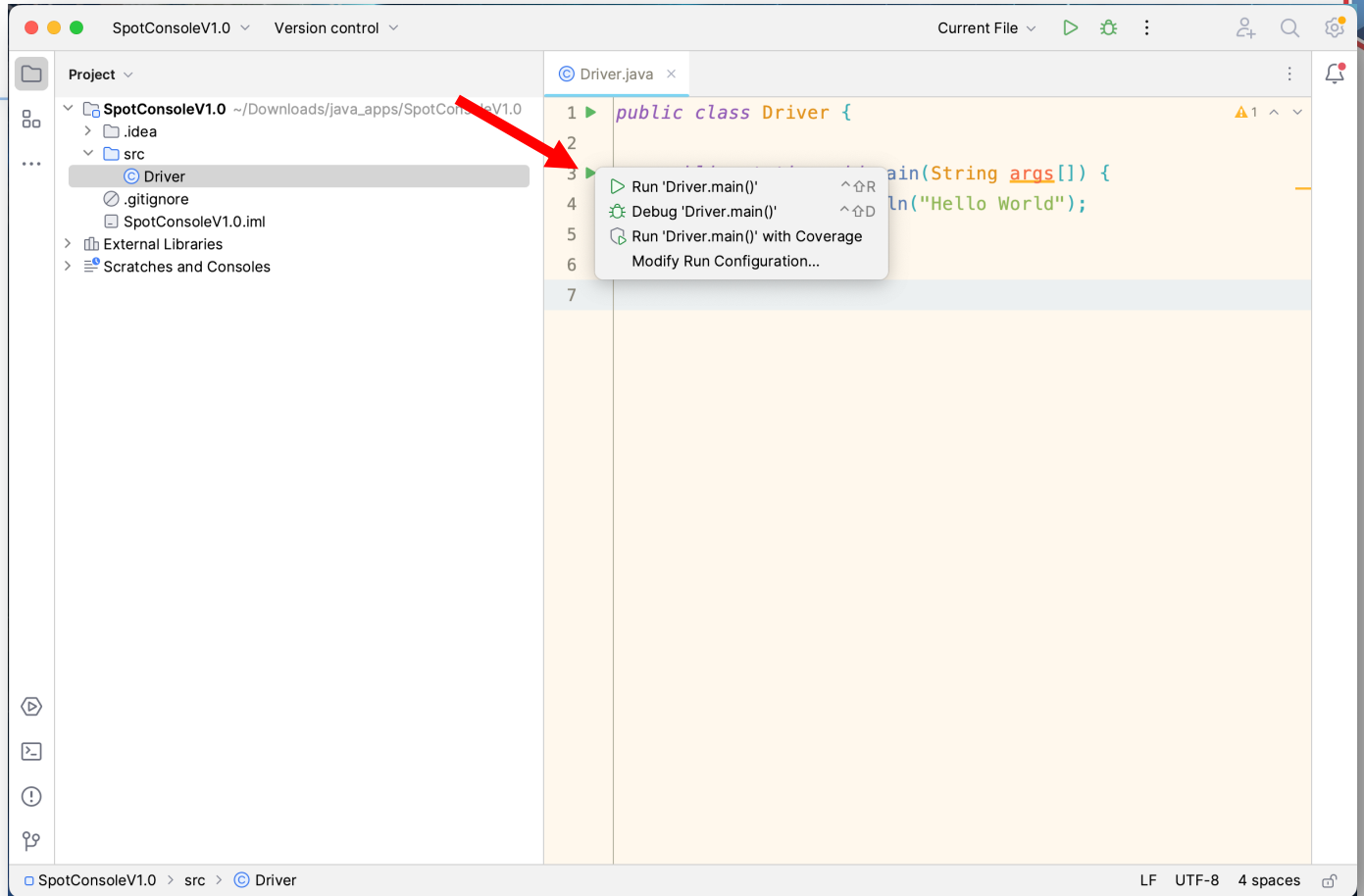
The screenshot shows an IDE window for a project named "SpotConsoleV1.0". The left sidebar displays the project structure, with the "src" folder expanded to show a file named "Driver". A red arrow points from the "Driver" file in the sidebar to the corresponding line in the code editor. The code editor displays the following Java code:

```
1 public class Driver {
2
3     public static void main(String args[]) {
4         System.out.println("Hello World");
5     }
6 }
7
```

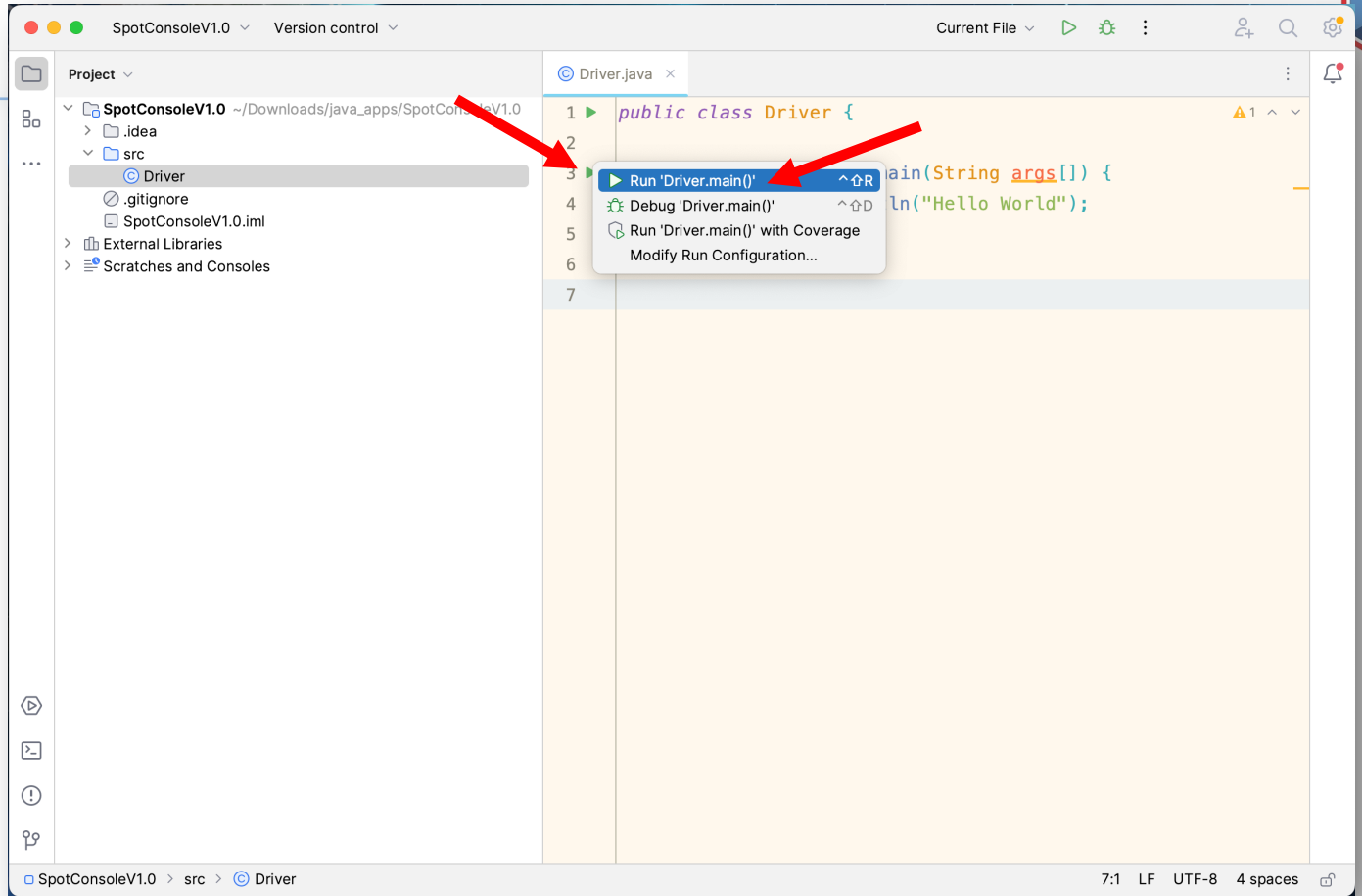
The status bar at the bottom indicates the current file is "Driver" in the "src" folder of the "SpotConsoleV1.0" project, with encoding "LF UTF-8" and "4 spaces" indentation.



# Run App



# Run App





SpotConsoleV1.0 Version control

Project

- SpotConsoleV1.0
- .idea
- out
- src
  - Driver
  - .gitignore
  - SpotConsoleV1.0.iml
- External Libraries
- Scratches and Consoles

Driver.java

```
1 public class Driver {
2
3     public static void main(String args[]) {
4         System.out.println("Hello World");
5     }
6 }
7
```

Run Driver

```
/Users/ddrohan/Library/Java/JavaVirtualMachines/corretto-17.0.7/Contents/Home/bin/java -javaagent:/Users/ddrohan/Library/Application S
Hello World
Process finished with exit code 0
```

SpotConsoleV1.0 > src > Driver LF UTF-8 4 spaces

Run  
App

Console  
Output



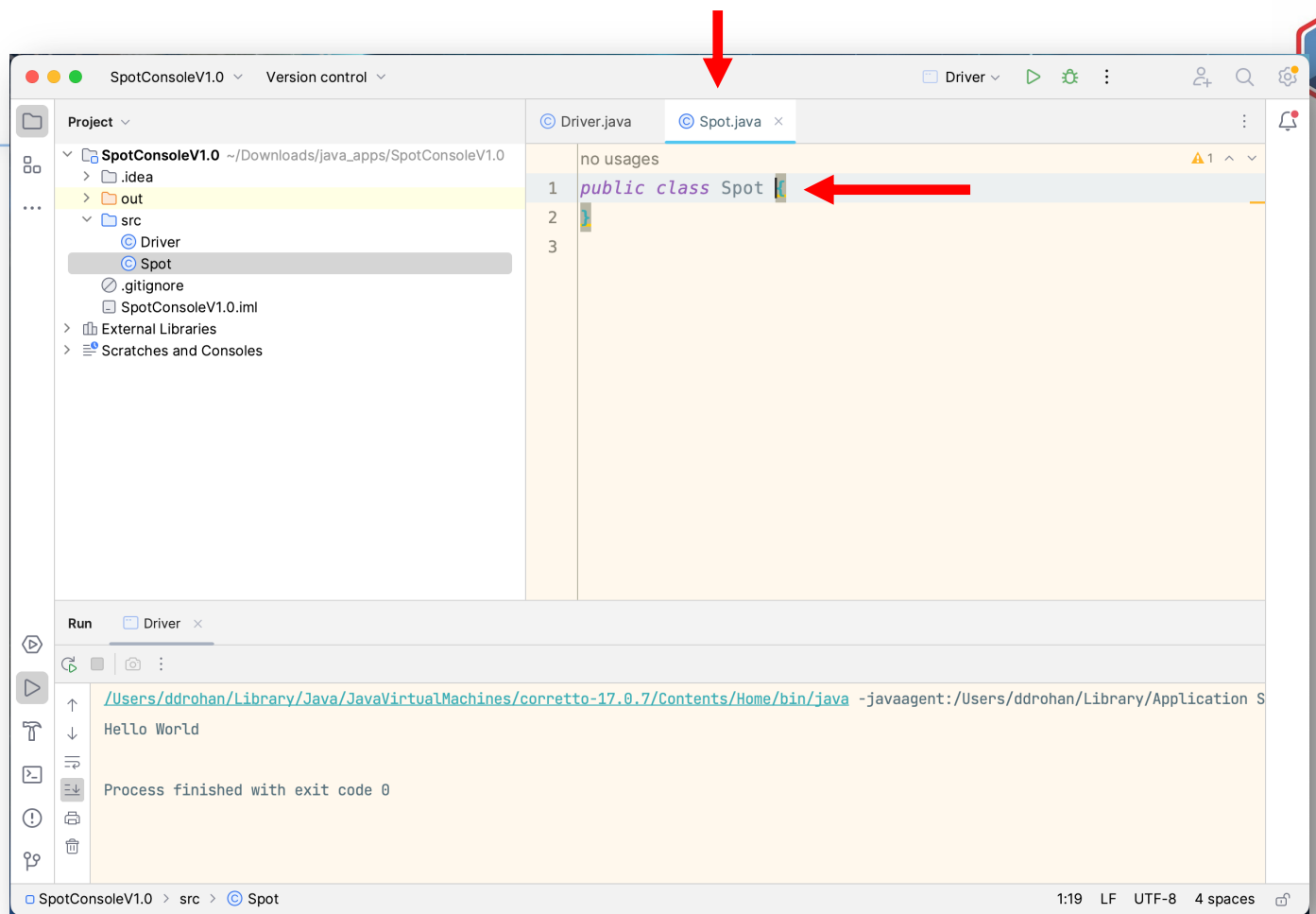


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# Basic Spot Class



# New Spot Class



The screenshot shows an IDE window for a project named "SpotConsoleV1.0". The "Project" view on the left shows the file structure, with the "Spot" class highlighted under the "src" directory. The "Code" view on the right shows the content of "Spot.java", which is currently empty except for the line "no usages" at the top. A red arrow points to the "Spot.java" tab, and another red arrow points to the "public class Spot" line. The "Run" view at the bottom shows the output of a successful run, displaying "Hello World" and "Process finished with exit code 0".

Project: SpotConsoleV1.0

src

- Driver
- Spot
- .gitignore
- SpotConsoleV1.0.iml

External Libraries

Scratches and Consoles

no usages

```
1 public class Spot
```

Run: Driver

```
/Users/ddrohan/Library/Java/JavaVirtualMachines/corretto-17.0.7/Contents/Home/bin/java -javaagent:/Users/ddrohan/Library/Application S  
Hello World  
Process finished with exit code 0
```

SpotConsoleV1.0 > src > Spot

1:19 LF UTF-8 4 spaces



Three fields:  
- xCoord  
- yCoord  
- diameter

Default constructor to initialise the fields with starting data

```
SpotConsoleV1.0  Version control  Driver  Spot.java  OFF
Project  SpotConsoleV1.0  ~/Downloads/java_apps/SpotConsoleV1.0
  .idea
  out
  src
    Driver
    Spot
    .gitignore
    SpotConsoleV1.0.iml
  External Libraries
  Scratches and Consoles

1  public class Spot {
2
3      float xCoord;
4      float yCoord;
5      float diameter;
6
7      public Spot() {
8          xCoord = 100;
9          yCoord = 200;
10         diameter = 40;
11     }
12 }
13
14
15

SpotConsoleV1.0  src  Spot  14:1  LF  UTF-8  4 spaces
```



# New Driver Class

Includes the `main()` method

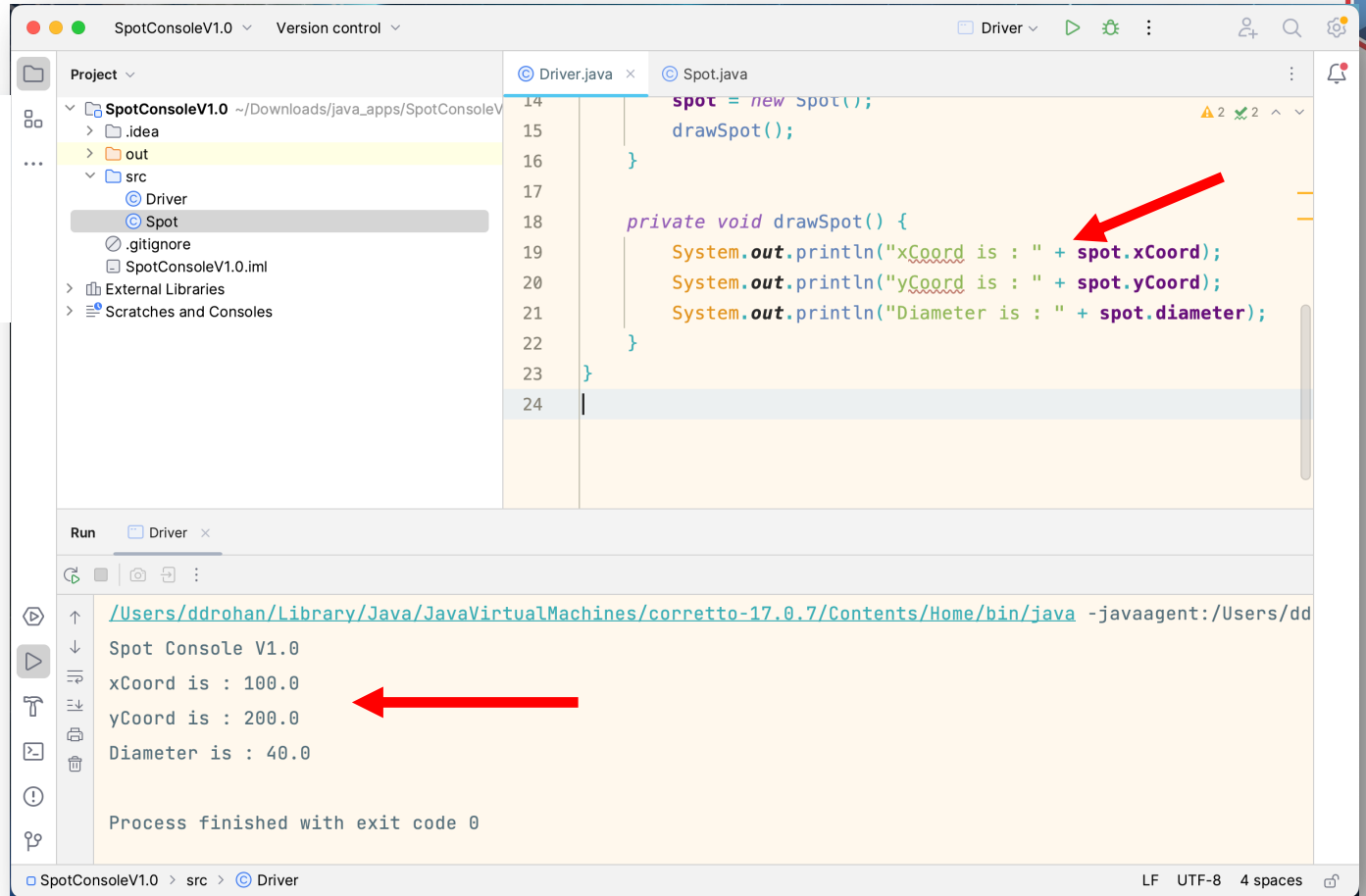
`main()` method calls the `Driver` constructor

```
SpotConsoleV1.0  Version control  Driver  Spot.java
Project  SpotConsoleV1.0  ~/Downloads/java_apps/SpotConsoleV
  > .idea
  > out
  > src
    @ Driver
    @ Spot
    .gitignore
    SpotConsoleV1.0.iml
  > External Libraries
  > Scratches and Consoles

1  import java.util.Scanner;
2
3  public class Driver {
4
5      Spot spot;
6      Scanner input = new Scanner(System.in);
7
8  public static void main(String args[]) {
9      System.out.println("Spot Console V1.0");
10     new Driver();
11 }
12
13 Driver() {
14     spot = new Spot();
15     drawSpot();
16 }
17
18 private void drawSpot() {
19     System.out.println("xCoord is : " + spot.xCoord);
20     System.out.println("yCoord is : " + spot.yCoord);
21     System.out.println(" Diameter is : " + spot.diameter);
22 }
23
24 }
```

# New Driver Class

Console Output



The screenshot shows an IDE window for a project named "SpotConsoleV1.0". The project structure on the left includes a "src" folder with "Driver.java" and "Spot.java". The "Driver.java" file is open, showing the following code:

```
14  
15     spot = new Spot();  
16     drawSpot();  
17  
18     private void drawSpot() {  
19         System.out.println("xCoord is : " + spot.xCoord);  
20         System.out.println("yCoord is : " + spot.yCoord);  
21         System.out.println("Diameter is : " + spot.diameter);  
22     }  
23 }  
24
```

A red arrow points to the `spot.xCoord` property access in line 19. Below the code editor, the "Run" tab is active, showing the command executed and the output:

```
/Users/ddrohan/Library/Java/JavaVirtualMachines/corretto-17.0.7/Contents/Home/bin/java -javaagent:/Users/dd  
Spot Console V1.0  
xCoord is : 100.0  
yCoord is : 200.0  
Diameter is : 40.0  
  
Process finished with exit code 0
```

A red arrow points to the first line of output, "xCoord is : 100.0". The status bar at the bottom indicates "SpotConsoleV1.0 > src > Driver" and "LF UTF-8 4 spaces". A Java logo is visible in the top right corner.

# Questions?

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Thanks.

