



# 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 Ultimate product page on the JetBrains website. A red arrow points from the left margin towards the "macOS" tab in the top navigation bar. The page features the IntelliJ logo, the text "IntelliJ IDEA Ultimate", and "The Leading Java and Kotlin IDE". It includes download links for "Download" and ".dmg ▾", and a "Free 30-day trial" button. Below these are links for "Select an installer for Intel or Apple Silicon" and "Installation instructions". The right side of the page displays a screenshot of the IntelliJ interface showing code editor windows and a file browser. At the bottom, there are links for "Version: 2023.1.4", "Build: 231.9225.16", "12 July 2023", "System requirements", "Other versions", and "Third-party software".

www.jetbrains.com/idea/download/?section=mac

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**IntelliJ IDEA Ultimate**

The Leading Java and Kotlin IDE

Download .dmg ▾

Free 30-day trial

Select an installer for Intel or Apple Silicon

Version: 2023.1.4 System requirements Other versions

Build: 231.9225.16 Installation instructions

12 July 2023 Third-party software



# IntelliJ - An industry standard IDE

The screenshot shows a web browser window displaying the IntelliJ IDEA download page for Mac. The URL in the address bar is [www.jetbrains.com/idea/download/?section=mac](https://www.jetbrains.com/idea/download/?section=mac). The page has a dark theme. At the top, there is a navigation bar with links for "IntelliJ IDEA", "Coming in 2023.2", "New UI Beta", "What's New", "Features", "Resources", "Pricing" (which is highlighted), and a large blue "Download" button. Below the navigation bar, a text message reads: "We're committed to giving back to our wonderful community, which is why IntelliJ IDEA Community Edition is completely free to use". A red arrow points to the "IntelliJ IDEA Community Edition" section, which includes the IntelliJ logo and the text "The IDE for pure Java and Kotlin development". At the bottom of this section, there are two download buttons: "Download" and ".dmg ▾". Below these buttons, the text "Free, built on open source" is displayed, followed by a note: "Select an installer for Intel or Apple Silicon".

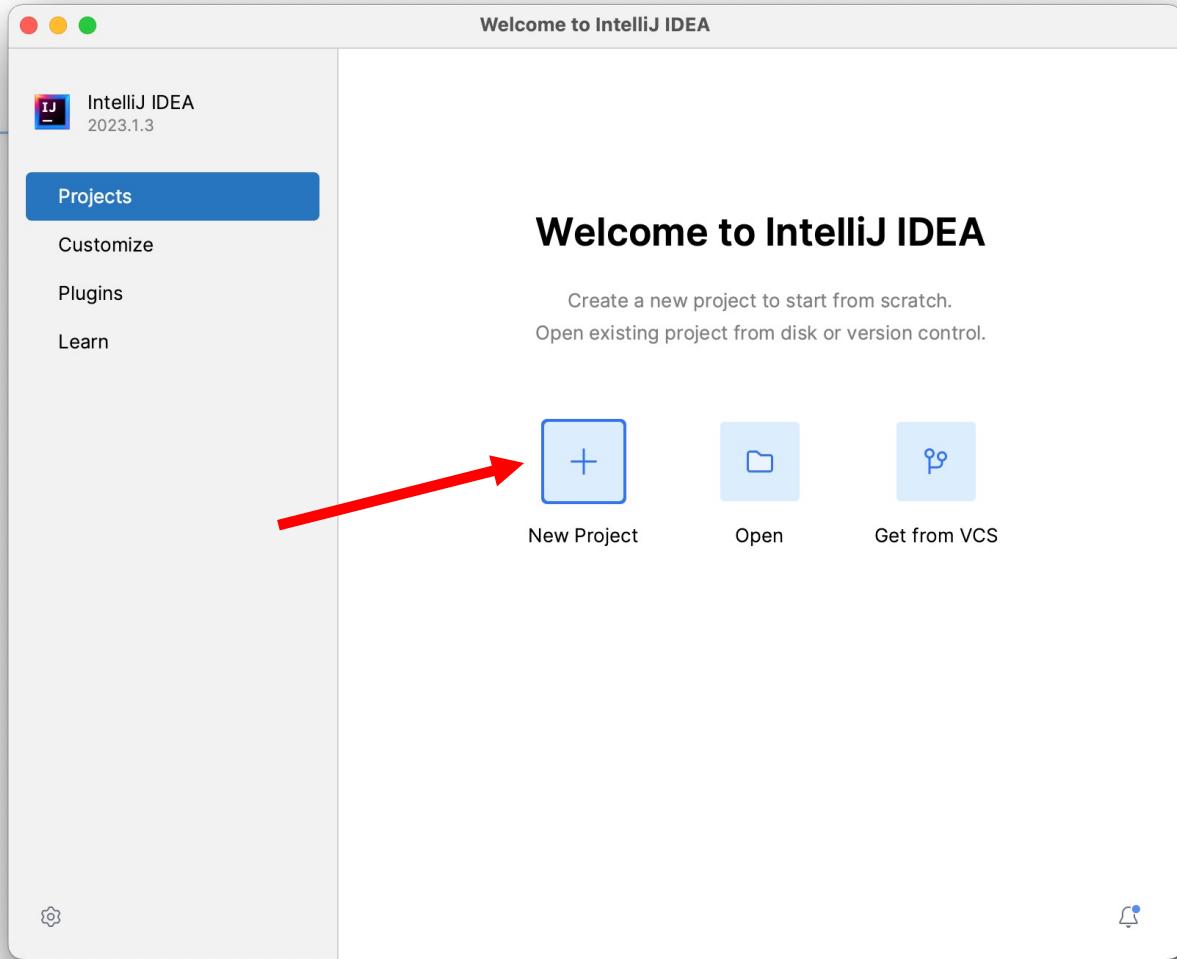
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# New Project Setup



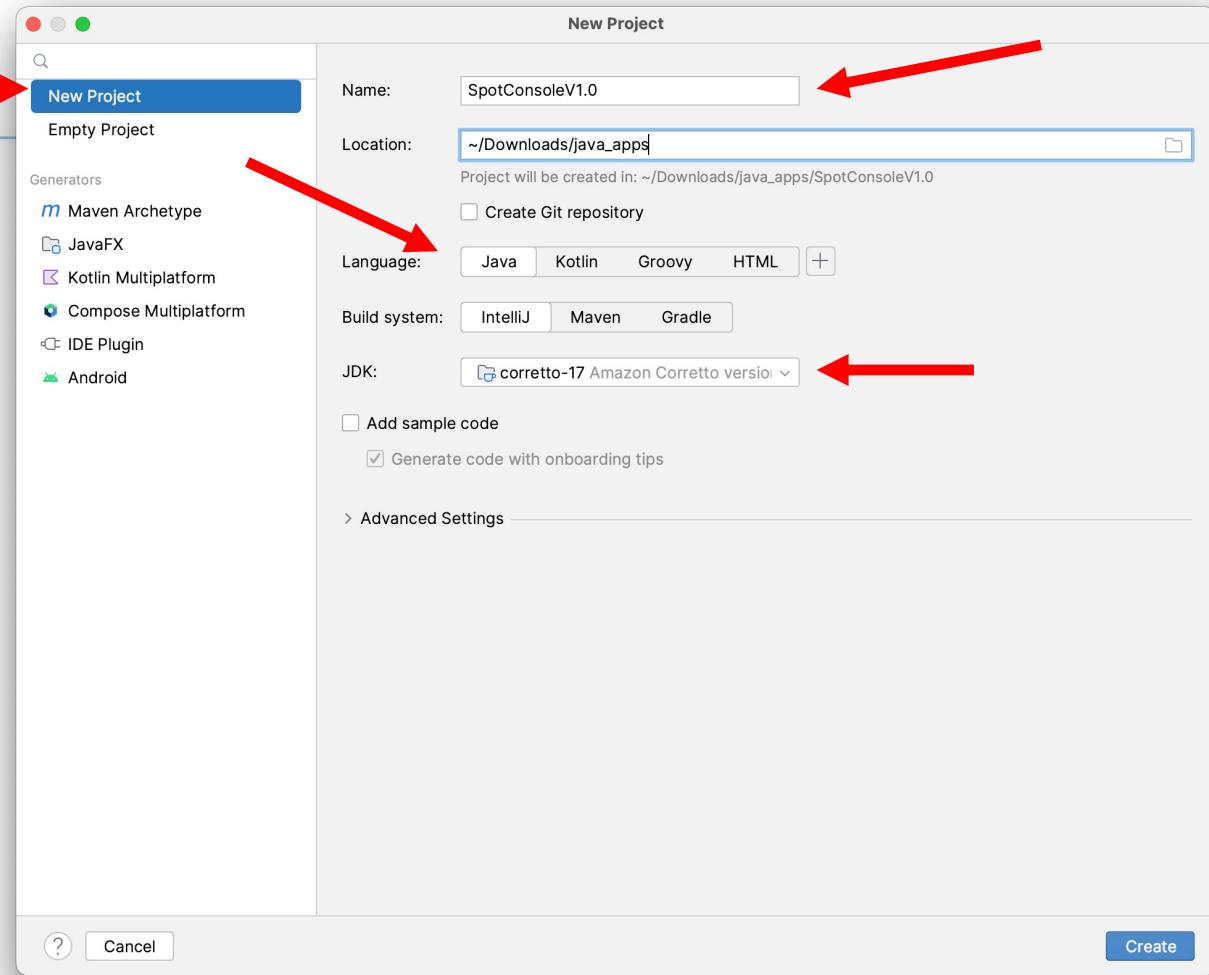


# Launch IntelliJ



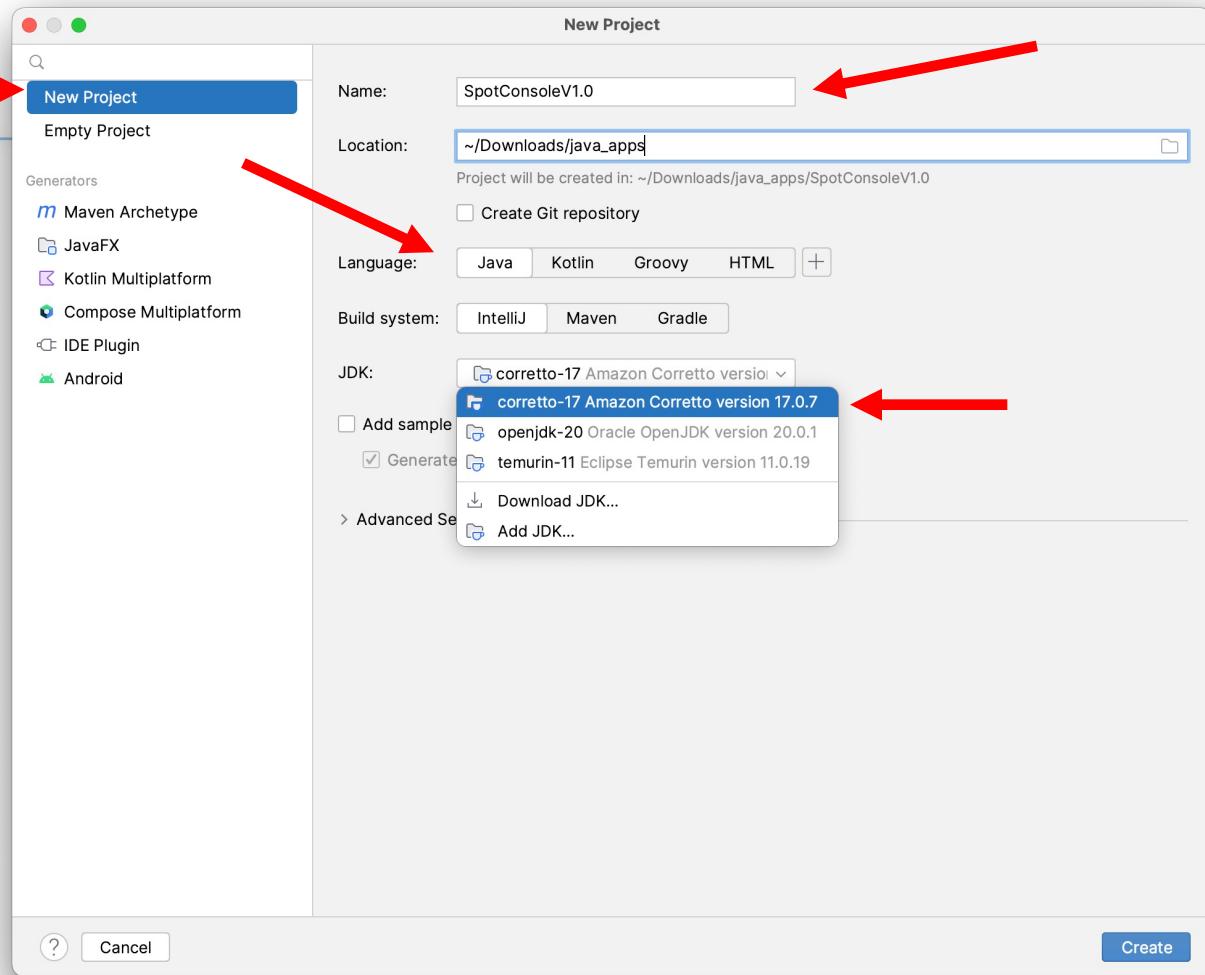


# New Java Project



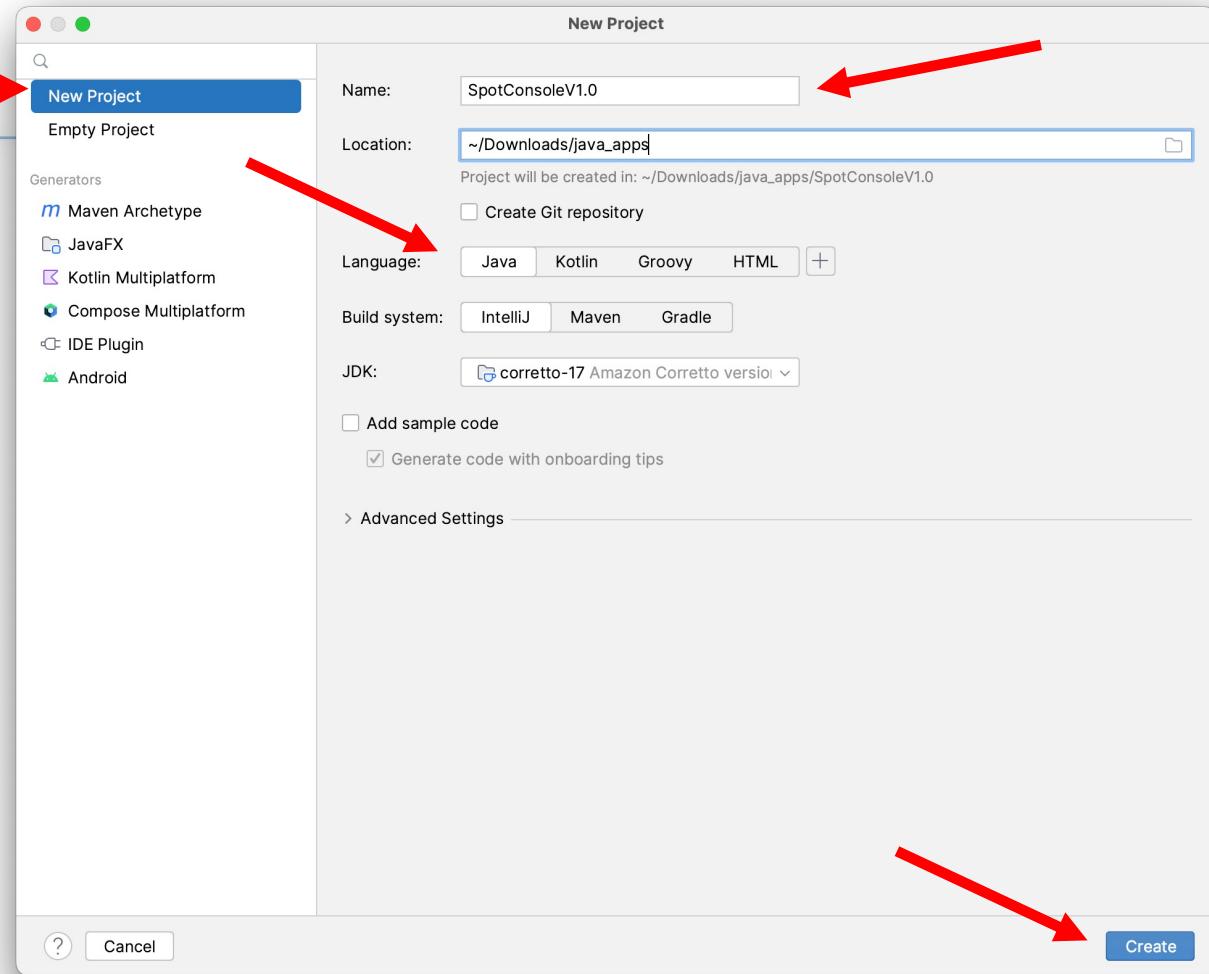


# New Java Project

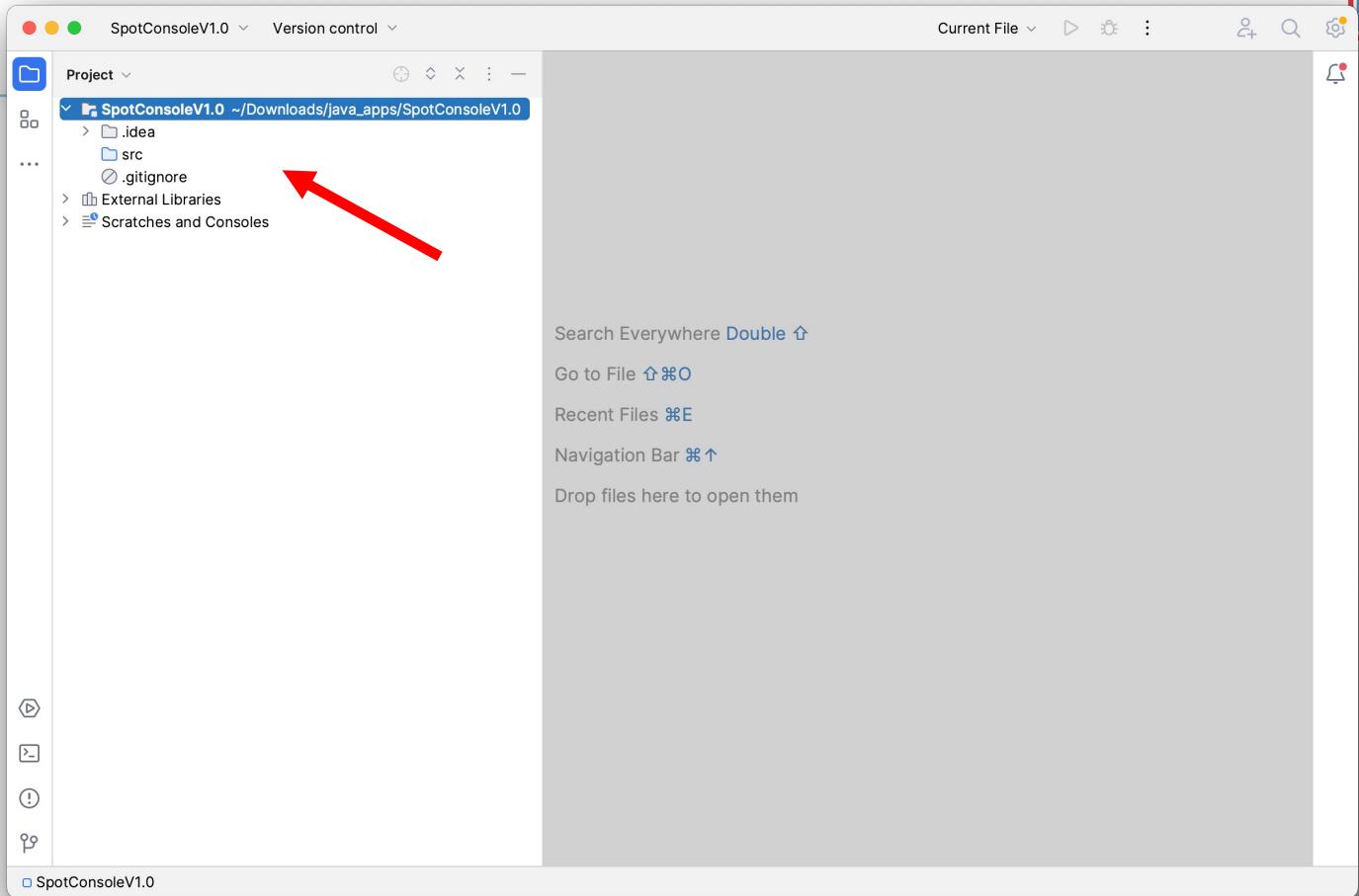




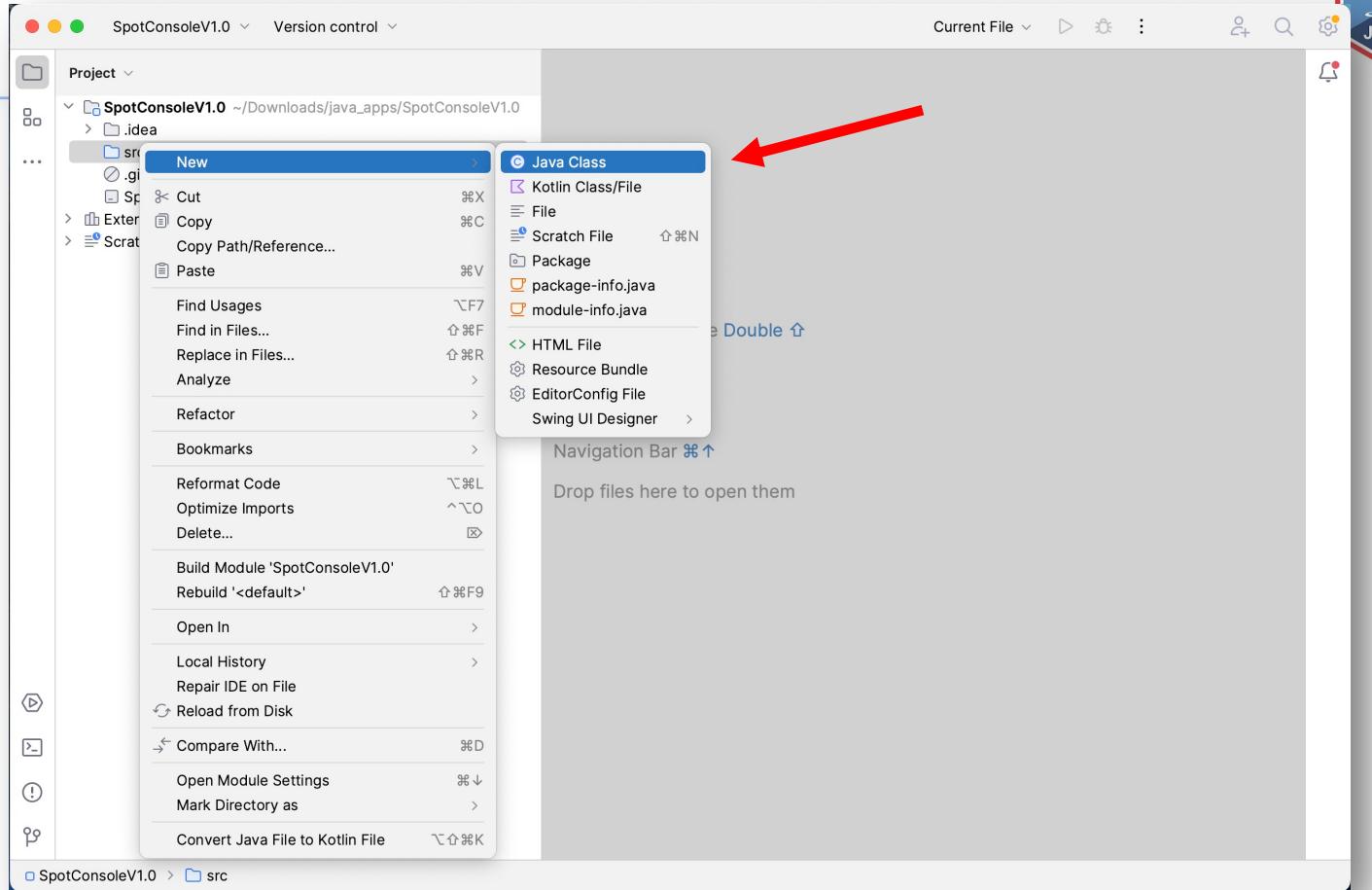
# New Java Project



# New Project

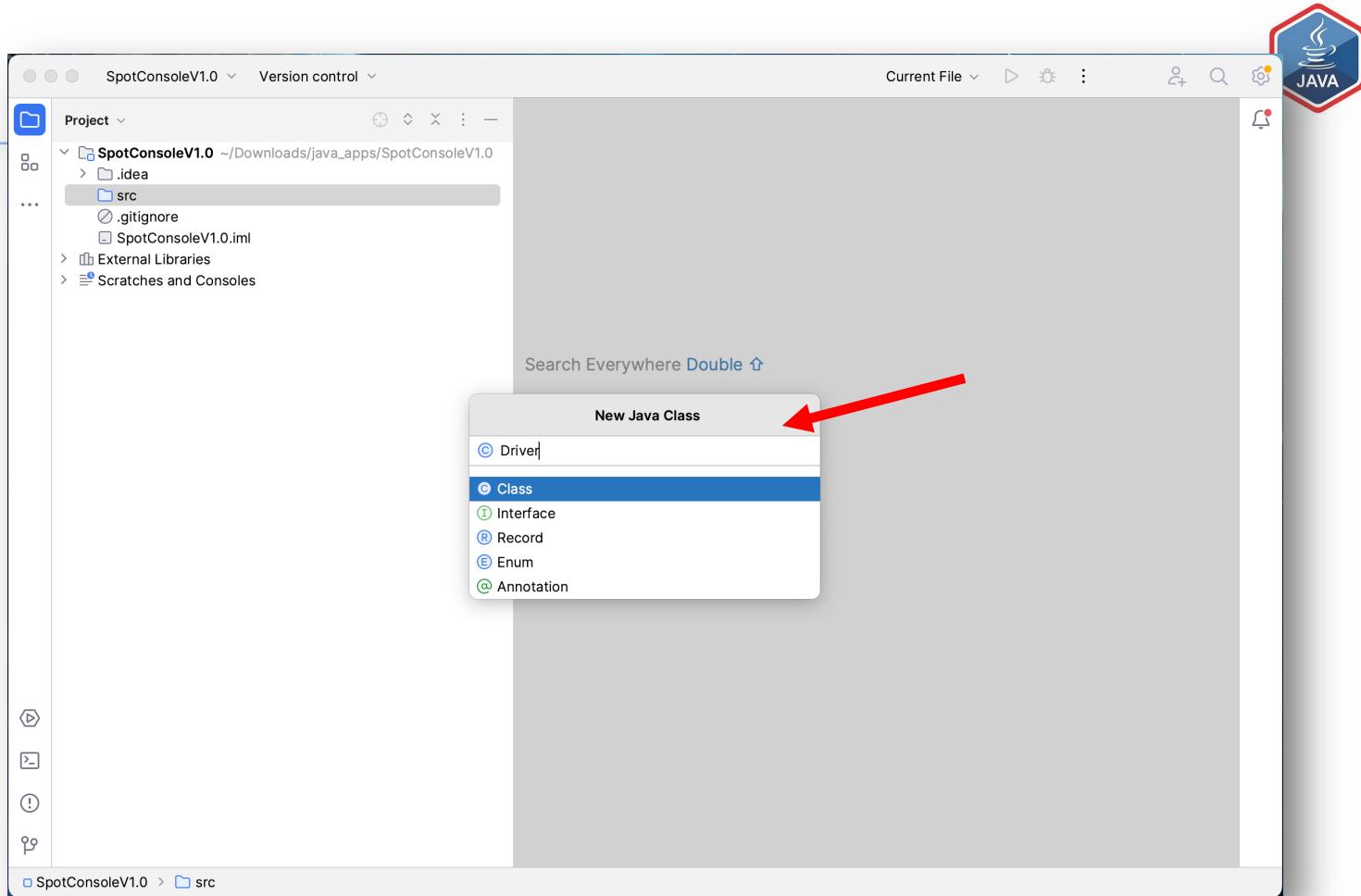


# Create New Class



# Create New Class

## Driver



# Create New Class

## Driver

The screenshot shows the IntelliJ IDEA interface. On the left, the Project tool window displays a project named "SpotConsoleV1.0" with a "src" directory containing a file named "Driver". A red arrow points from the text "Driver" in the section header to the "Driver" file in the Project tool window. On the right, the Editor tool window shows the "Driver.java" file with the following code:

```
public class Driver { }
```

A red arrow points from the text "Driver" in the code to the opening brace "}" at the end of the class definition. The status bar at the bottom right indicates the file is saved with "1:21 LF UTF-8 4 spaces".





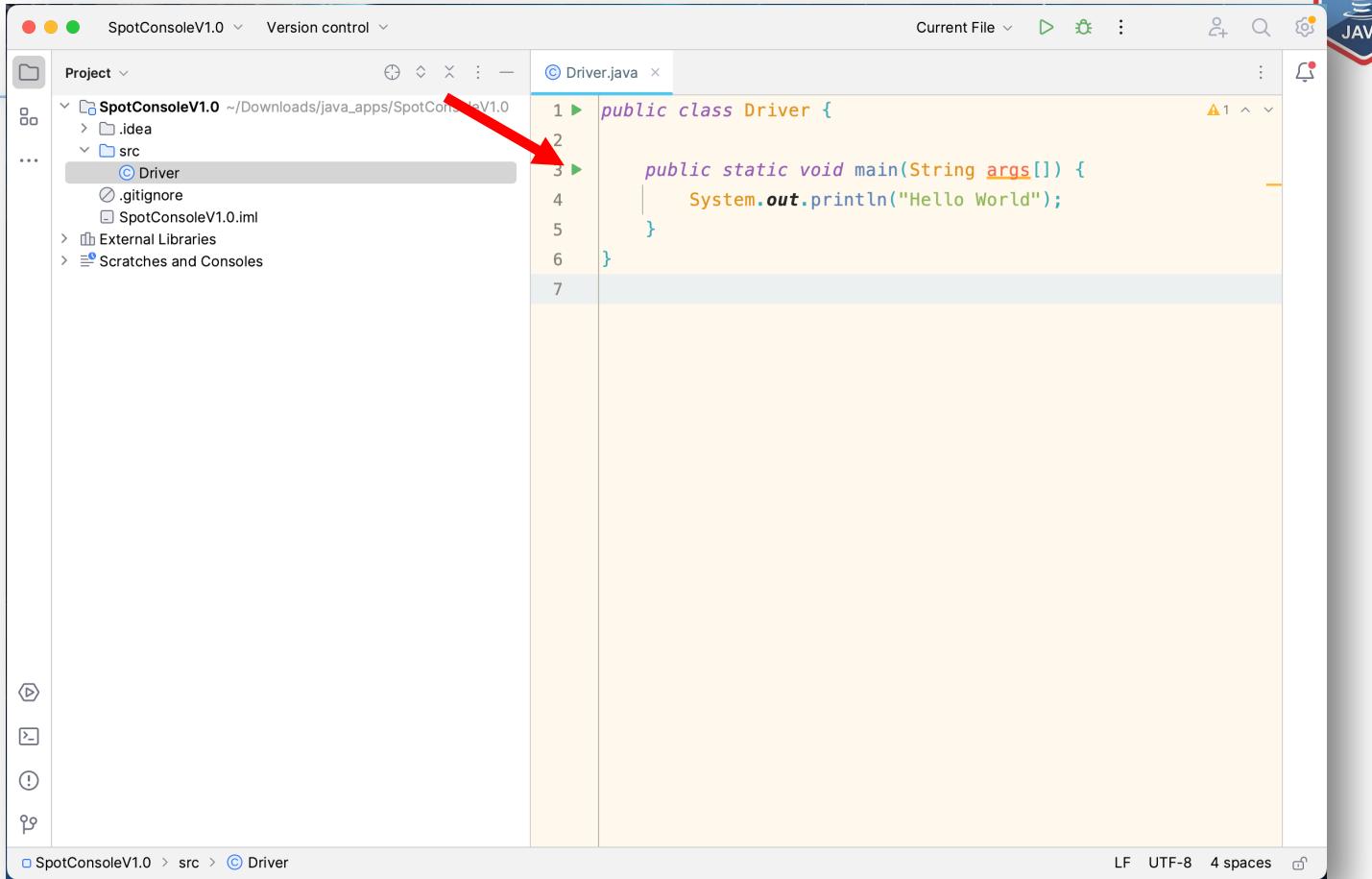
# main() method

A screenshot of a Java IDE interface. On the left, the Project tool window shows a project named "SpotConsoleV1.0" with a "src" folder containing a "Driver" class. The "Driver" class is selected. On the right, the Editor tool window displays the "Driver.java" file with the following code:

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

Two red arrows point to the "main" method signature and the "System.out.println" statement. At the bottom of the IDE, the status bar shows the file path "SpotConsoleV1.0 > src > Driver" and encoding information "LF UTF-8 4 spaces".

# Run App



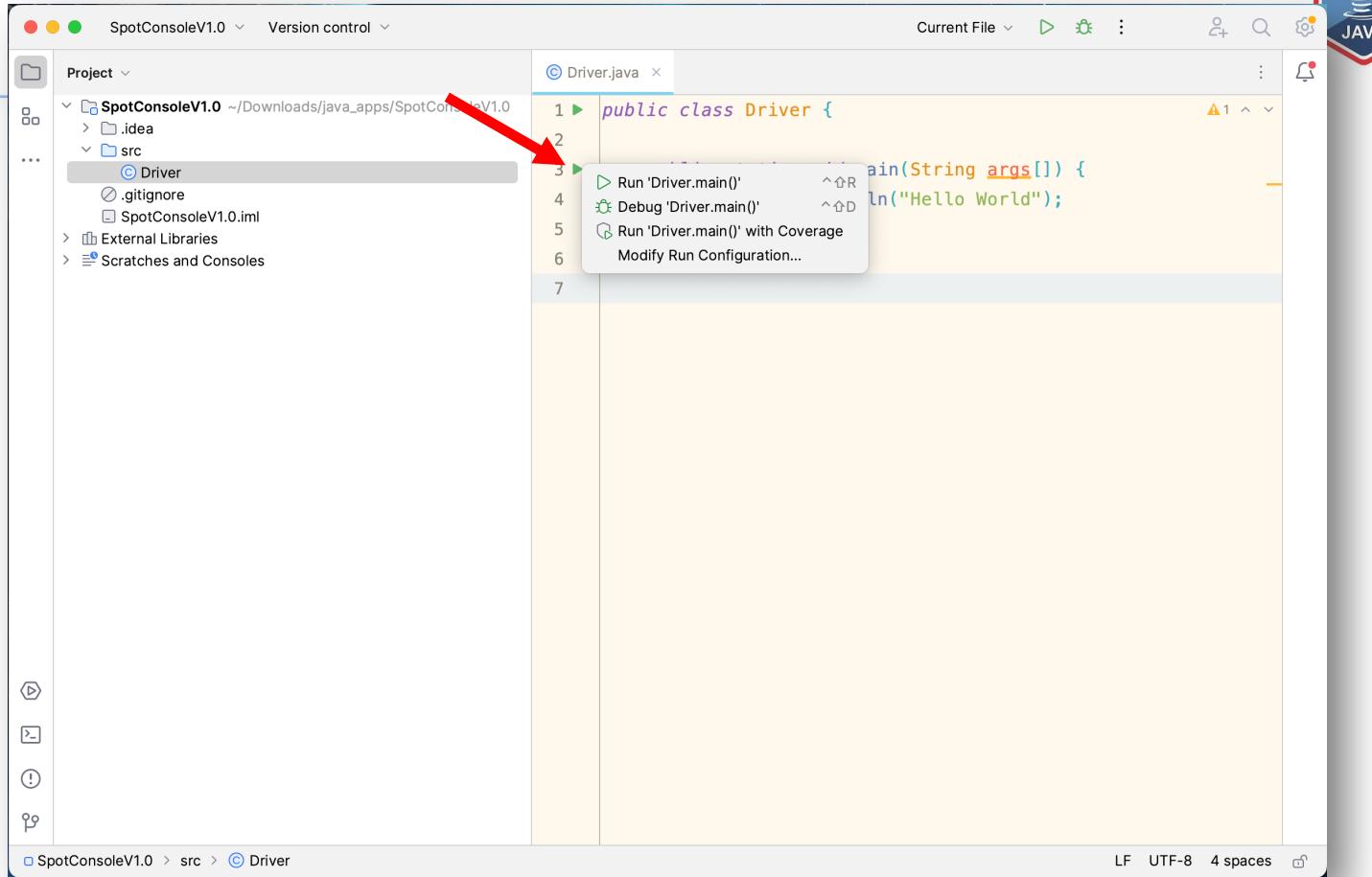
The screenshot shows a Java development environment with the following details:

- Project Tree:** The project is named "SpotConsoleV1.0". It contains a ".idea" folder, a ".gitignore" file, and an "src" directory which contains a "Driver" class.
- Current File:** The "Driver.java" file is open in the editor.
- Code:** The code in "Driver.java" is as follows:

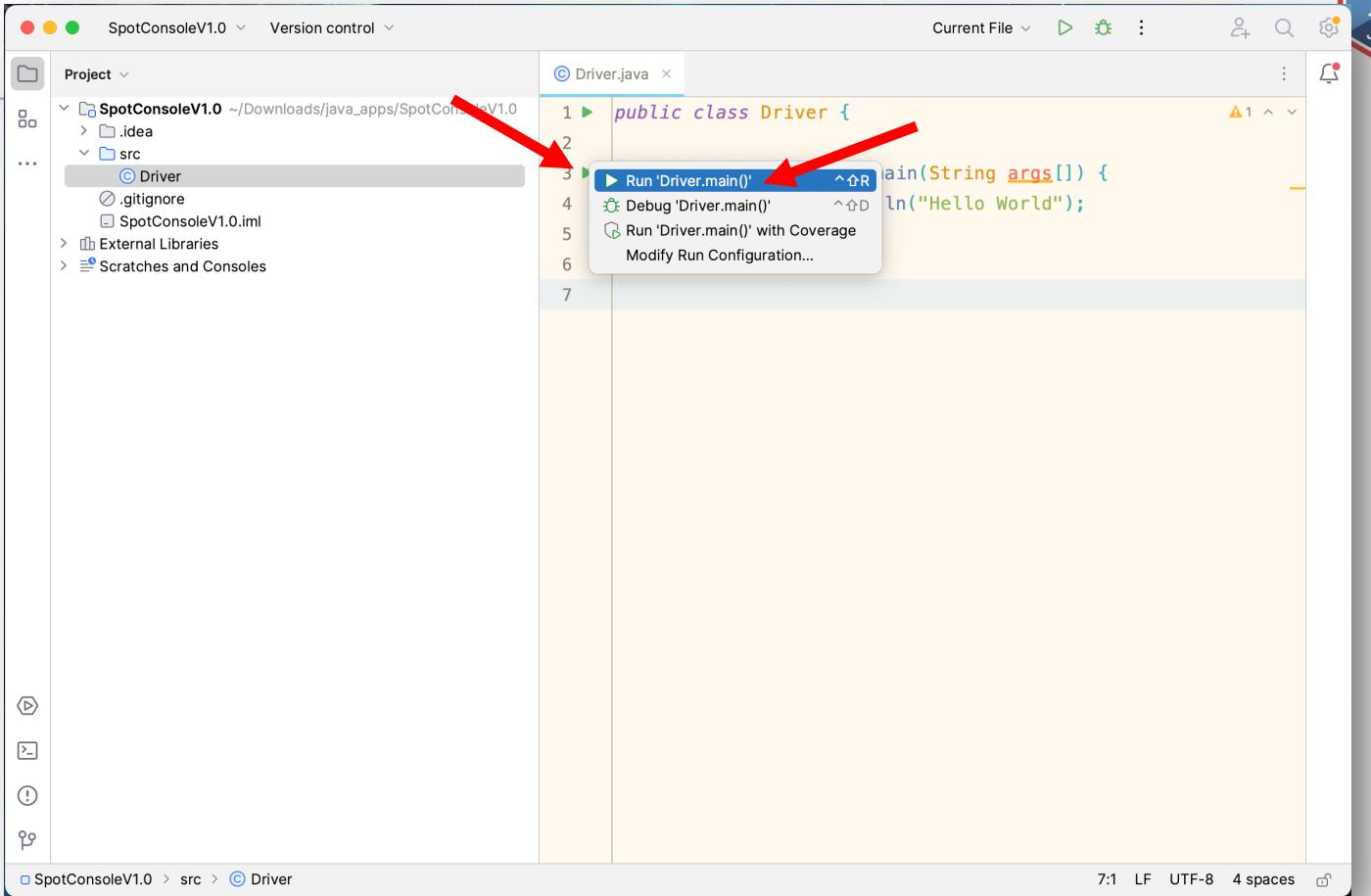
```
public class Driver {  
    public static void main(String args[]) {  
        System.out.println("Hello World");  
    }  
}
```
- IDE UI:** The interface includes standard tabs like "Current File", "Search", and "Help". There is also a "JAVA" logo in the top right corner.
- Status Bar:** The bottom status bar shows the file path "SpotConsoleV1.0 > src > Driver" and encoding information "LF UTF-8 4 spaces".

A red arrow points from the "Driver" class in the project tree to the corresponding line of code in the editor.

# Run App



# Run App





# Run App

# Console Output

The screenshot shows the IntelliJ IDEA interface with the following details:

- Project View:** Shows the project structure for "SpotConsoleV1.0". The "Driver" class under the "src" directory is selected.
- Code Editor:** Displays the "Driver.java" file content:

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

A red arrow points to the line `System.out.println("Hello World");`.
- Run Tab:** Shows the run configuration for "Driver". A red arrow points to the output window.
- Output Window:** Displays the console output:

```
/Users/ddrohan/Library/Java/JavaVirtualMachines/corretto-17.0.7/Contents/Home/bin/java -javaagent:/Users/ddrohan/Library/Application S  
Hello World
```

A red arrow points to the output "Hello World".
- Bottom Status Bar:** Shows the file path "SpotConsoleV1.0 > src > Driver", encoding "LF", character set "UTF-8", and a 4 spaces tab setting.

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# Basic Spot Class



# New Spot Class

The screenshot shows the IntelliJ IDEA interface with a Java project named "SpotConsoleV1.0". The "Project" tool window on the left displays the file structure, with the "src" directory expanded. Inside "src", there are two files: "Driver.java" and "Spot.java", which is currently selected. The "Run" tool window at the bottom shows a successful run of the "Driver" configuration, outputting "Hello World" and "Process finished with exit code 0". A red arrow points down to the IntelliJ logo in the top right corner, and another red arrow points to the "Spot.java" tab in the editor.

Project

- SpotConsoleV1.0 ~/Downloads/java\_apps/SpotConsoleV1.0
  - .idea
  - out
  - src
    - Driver
    - Spot
    - .gitignore
    - SpotConsoleV1.0.iml
  - External Libraries
  - Scratches and Consoles

Driver.java

Spot.java

no usages

1 public class Spot

2

3

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

```
public class Spot {  
    float xCoord;  
    float yCoord; ←  
    float diameter;  
  
    public Spot() {  
        xCoord = 100;  
        yCoord = 200; ←  
        diameter = 40;  
    }  
}
```

Driver.java

Spot.java

Project

SpotConsoleV1.0

.idea

out

src

Driver

Spot

.gitignore

SpotConsoleV1.0.iml

External Libraries

Scratches and Consoles

OFF

14:1 LF UTF-8 4 spaces

# New Driver Class

Includes the `main()` method

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

```
import java.util.Scanner;

public class Driver {

    Spot spot;
    Scanner input = new Scanner(System.in);

    public static void main(String args[]) {
        System.out.println("Spot Console V1.0");
        new Driver();
    }

    Driver() {
        spot = new Spot();
        drawSpot();
    }

    private void drawSpot() {
        System.out.println("xCoord is : " + spot.xCoord);
        System.out.println("yCoord is : " + spot.yCoord);
        System.out.println("Diameter is : " + spot.diameter);
    }
}
```

# New Driver Class

Console Output

The screenshot shows the IntelliJ IDEA interface with the following details:

- Project View:** Shows the project structure for "SpotConsoleV1.0". The "Driver" and "Spot" packages are selected.
- Driver.java:** Contains the code for the Driver class, which creates a Spot object and calls its drawSpot() method.
- Spot.java:** Contains the code for the Spot class, which prints its coordinates and diameter when drawSpot() is called.
- Run Tab:** Set to "Driver".
- Output Window:** Displays the console 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 "yCoord is : 200.0" line in the output.
- Status Bar:** Shows file encoding as "LF", character set as "UTF-8", and indentation as "4 spaces".

# Questions?

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# Thanks.

