**Runners in Spring Boot**

* **Runners** are Java classes that behave like Spring Beans in Spring Boot and implement one of the Runner interfaces, typically:
  + CommandLineRunner or
  + ApplicationRunner.
* Each Runner class must override the run() method, which contains logic that should execute **once** during application startup.
* The logic inside the run() method executes **after the Spring application context is initialized**, meaning:
  + All beans are instantiated,
  + Dependencies are injected,
  + The application is almost fully up.
* The run() method of each Runner is automatically executed by the **IoC container** exactly **once**, as part of the startup process triggered by SpringApplication.run().

**Example:**

@Component

public class MyRunner implements CommandLineRunner {

@Override

public void run(String... args) throws Exception {

System.out.println("This runs after Spring Boot startup.");

}

}

### ✅ CommandLineRunner

* **Method Signature**:

void run(String... args) throws Exception;

* **Parameter Type**: A String[] of raw command-line arguments.
* **Usage**:

@Component

public class MyCommandLineRunner implements CommandLineRunner {

@Override

public void run(String... args) {

for (String arg : args) {

System.out.println("CommandLineRunner arg: " + arg);

}

}

}

* **Example Input**:

--name=John --age=30 customArg

* **args[]** will be:

[--name=John, --age=30, customArg]

Eg: RunnersCommandLineRunners

### ✅ ApplicationRunner

* **Method Signature**:

void run(ApplicationArguments args) throws Exception;

 **Parameter type**: ApplicationArguments args

 **What it is**: A helper object that separates and parses the command-line arguments into **option arguments** (with --) and **non-option arguments**.

@Component

public class MyApplicationRunner implements ApplicationRunner {

@Override

public void run(ApplicationArguments args) {

System.out.println("Option Names: " + args.getOptionNames());

System.out.println("Non-option args: " + args.getNonOptionArgs());

System.out.println("Value of 'name': " + args.getOptionValues("name"));

}

}

Example Input:

--name=John --age=30 customArg

args.getOptionNames() → ["name", "age"]

args.getOptionValues("name") → ["John"]

args.getNonOptionArgs() → ["customArg"]

Eg: RunnersApplicationRunner