



PROGRAMMING LANGUAGE

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PROGRAMMING LIFE CYCLE

LEARNING OUTCOME

After studying this topic, you should be able to understand the main steps involved in programming life cycle and the types of errors that can occur



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JAVA SYNTAX

```
public class HelloWorld //class header
{
    //class body
}
```



JAVA SYNTAX

```
public class HelloWorld //class header
{
    //class body
    public static void main(String[] args) //main method header
    { //main method body
        //display a greeting in the console window
        System.out.println("Hello World!"); //program statement
    }
}
```



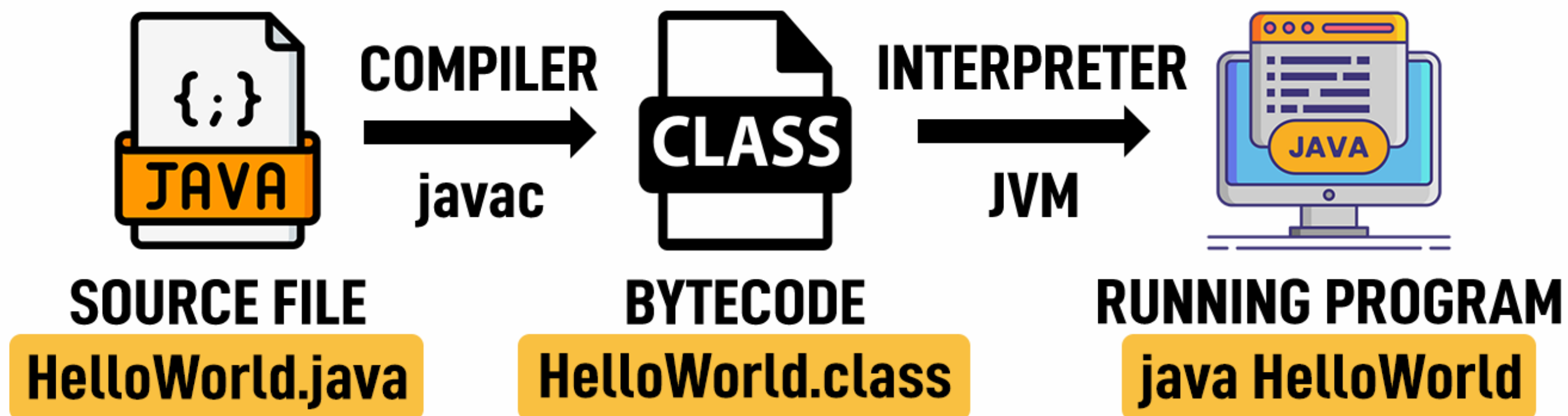
JAVA SYNTAX

```
//This is HelloWorld class
public class HelloWorld //class header
{
    public static void main(String[] args) //main method header
    { //main method body
        //display a greeting in the console window
        System.out.println("Hello World!"); //program statement

        /*comments can be placed
        almost anywhere in the program*/
    }
}
```



JAVA PROGRAM PROCESS



SYNTAX ERROR

- grammatical mistakes
- compiler catches syntax error & prints error message
- bytecode will not be generated
- **example:**

`System.out.print("Hello").`

Using a period instead of a semicolon

`System.out.print("Hello);`

Missing the closing quotes

corrected code:

`System.out.print("Hello");`



RUNTIME ERROR

- not detected during compilation
- detected when the program is running
- bytecode will be generated
- during runtime, terminates and prints error

- **example:**

```
int number = 20 / 0;  
Divide a number by 0
```

```
int input = scan.nextInt();  
Different input than expected
```



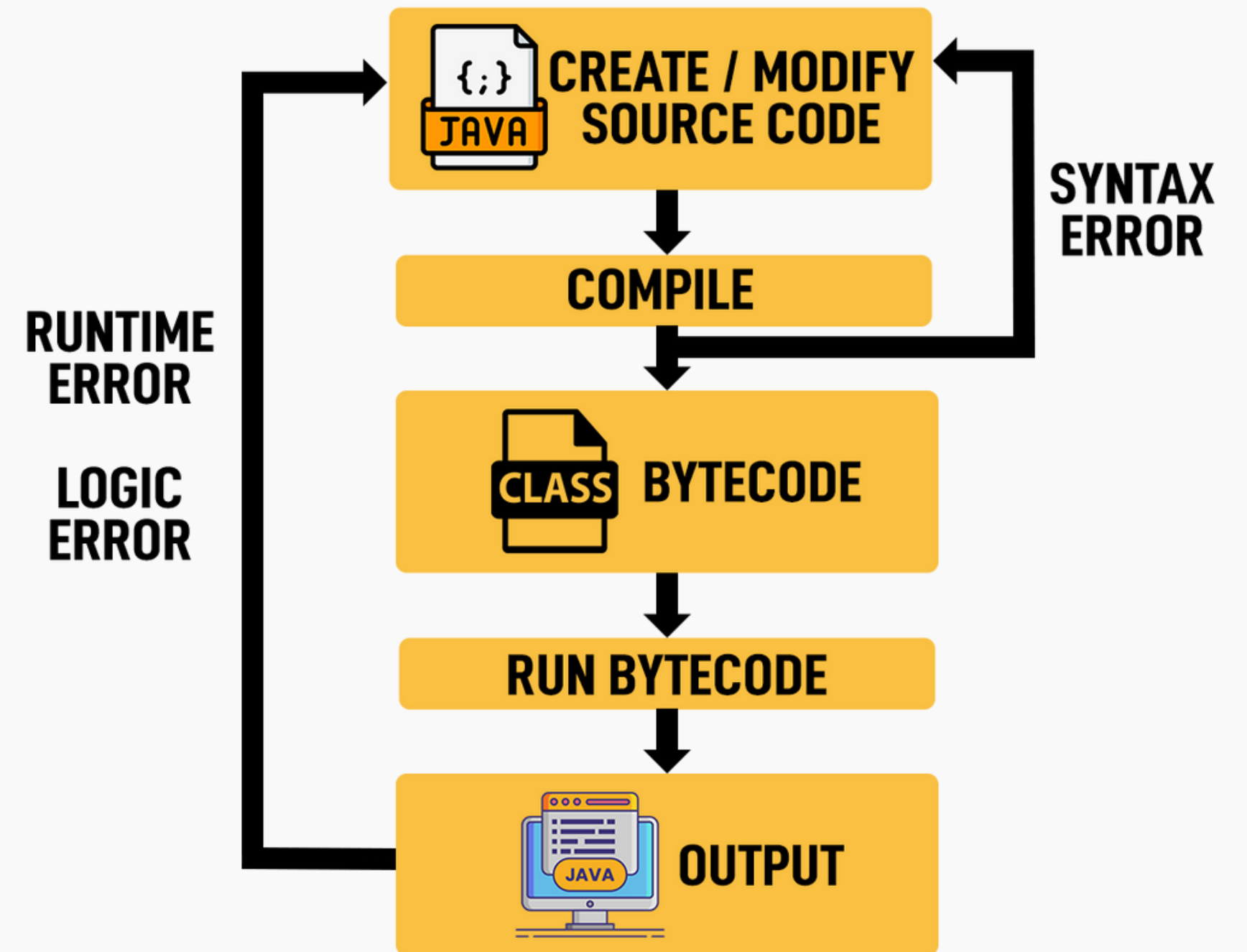
LOGIC ERROR

- not detected during compilation
- not detected when the program is running
- produce incorrect results
- error by the programmer
- example:
 $\text{area} = \text{width} + \text{length};$
 Doing addition instead of multiplication



ERRORS

- processes and errors that happen at the stages of creating a Java program
- Syntax errors
- Runtime errors
- Logic errors



**THANKS
FOR
WATCHING**

01

JAVA SYNTAX

03

RUNTIME ERROR

02

SYNTAX ERROR

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LOGIC ERROR