

Java 6_2

1. Describe the difference between a syntax error, a logic error, and an exception

Code:

Syntax error:

```
int number = 10 // Missing semicolon
```

logic error:

```
int a = 5;
```

```
int b = 3;
```

```
int result = a - b; // Intended to add, but used subtraction
```

exception:

```
int[] arr = new int[5];
```

```
int value = arr[10]; // ArrayIndexOutOfBoundsException
```

```
1 package helloworld;
2 import java.util.Arrays;
3
4
5
6 public class Main {
7     public static void main(String[] args) {
8         String str = "Hello World";
9         for(int i = 0; i < 4; i++); // Semicolon terminates the for loop
10        {
11            System.out.println(str);
12            str+= "!";
13        }
14    }
15 }
```

Problems Javadoc Declaration Console ×

<terminated> Main [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (06-Aug-2024, 9:13:00 am – 9:13:03 am) [pid: 1]

Exception in thread "main" java.lang.Error: Unresolved compilation problems:

Syntax error on token "Invalid Character", @ expected

Syntax error, type annotations are illegal here

World cannot be resolved to a variable

Syntax error on token "Invalid Character", delete this token

at helloworld/helloworld.Main.main(Main.java:8)

2. What is wrong with the following code? It should print "Hello World!" four times to the screen

Code:

```
String str = "Hello World";
```

```
for(int i = 0; i < 4; i++); // Semicolon terminates the for loop
```

```
{
```

```
    System.out.println(str);
```

```
    str+= "!";
```

```
}
```

3. Describe an exception that you have experienced in your program before. Explain how it could be handled with a try/catch block of code.

Code:

```
int[] arr = new int[5];
```

```
System.out.println(arr[10]); // ArrayIndexOutOfBoundsException
```

4. Write a segment of code that has:

- a. A syntax error
- b. A logic error
- c. An exception

syntax error:

```
int number = 10; // Missing semicolon
```

logic error:

```
int a = 5;
```

```
int b = 3;
```

```
int result = a - b; // Intended to add, but used subtraction
```

expection:

```
int[] arr = new int[5];
```

```
System.out.println(arr[10]); // ArrayIndexOutOfBoundsException
```

5. What is the difference between a checked exception and an unchecked exception?

Code:

Checked exeption:

```
try {  
    FileReader file = new FileReader("somefile.txt");  
} catch (FileNotFoundException e) {  
    e.printStackTrace();  
}
```

Unchecked exeption:

```
String str = null;  
System.out.println(str.length()); // NullPointerException
```