**18th Day Internship Report**

Date: 25 June 2025

Topic: ArrayIndexOutOfBoundsException, NullPointerException, and IOException in Java

Today’s Learning Summary:

On the 25th day of the internship, we learned about three common exceptions in Java that occur during runtime. Understanding these exceptions helps in identifying potential errors and writing safer programs.

**1. ArrayIndexOutOfBoundsException**

Occurs when trying to access an array element using an invalid index.

Reason: Index is either negative or exceeds the array size.

Example:

int[] arr = {10, 20, 30};

System.out.println(arr[3]); // Error: Index 3 out of bounds for length 3

**2. NullPointerException**

Occurs when attempting to access methods or variables on a null object.

Reason: Object reference is not initialized.

Example:

String str = null;

System.out.println(str.length()); // Error: NullPointerException

**3. IOException**

Represents failures in input/output operations such as reading or writing files.

Reason: File not found, hardware failure, or stream interruptions.

Example:

BufferedReader reader = new BufferedReader(new FileReader("data.txt"));

String line = reader.readLine();

reader.close();

**Conclusion:**

We concluded that:

These exceptions are common and need proper handling to avoid program crashes.

Using try-catch blocks and checking for null or valid indices is good practice.

Exception handling increases program reliability and user trust.

This session helped us improve our debugging skills and write more secure, fault-tolerant Java code.