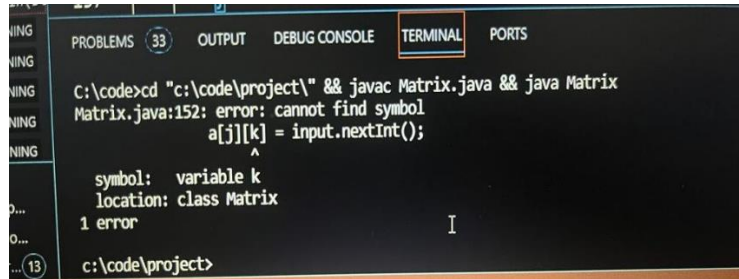


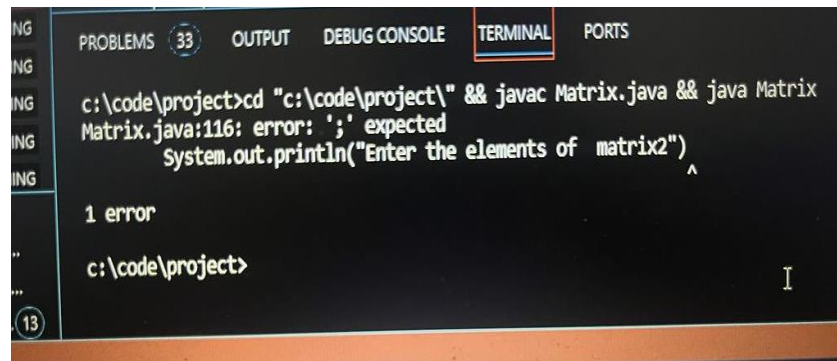
# Debugging in Mini project

## 1) Use of wrong variable in array declaration



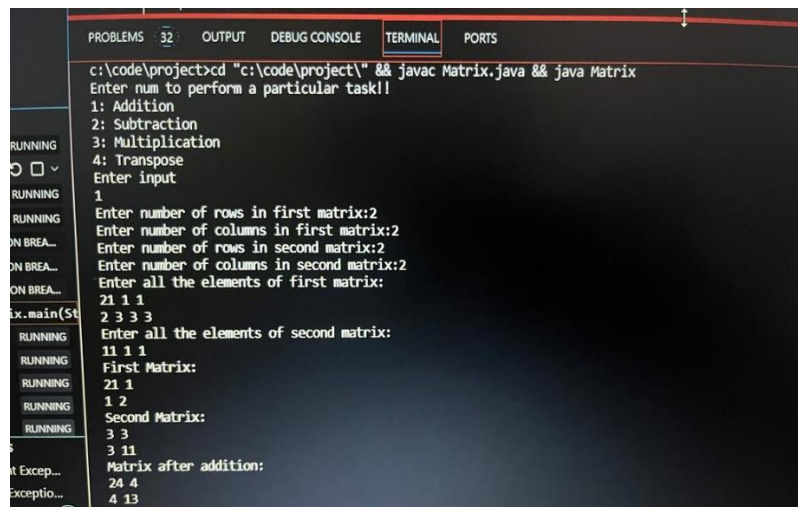
```
PROBLEMS 33 OUTPUT DEBUG CONSOLE TERMINAL PORTS
C:\code>cd "c:\code\project\" && javac Matrix.java && java Matrix
Matrix.java:152: error: cannot find symbol
    a[j][k] = input.nextInt();
          ^
symbol:   variable k
location: class Matrix
1 error
c:\code\project>
```

## 2) Semicolon was missing at the end



```
PROBLEMS 33 OUTPUT DEBUG CONSOLE TERMINAL PORTS
c:\code\project>cd "c:\code\project\" && javac Matrix.java && java Matrix
Matrix.java:116: error: ';' expected
    System.out.println("Enter the elements of matrix2")
                                                         ^
1 error
c:\code\project>
```

## 3) After debugging code was running effectively



The screenshot shows a Java IDE with a terminal window open. The terminal displays the command to compile and run a Java program: `c:\code\project>cd "c:\code\project\" && javac Matrix.java && java Matrix`. The program prompts the user to enter a number to perform a task (1: Addition, 2: Subtraction, 3: Multiplication, 4: Transpose). The user enters 1. The program then prompts for the number of rows and columns for two matrices, both set to 2. It then prompts for the elements of the first matrix (2 1 1) and the second matrix (1 1 1). The program displays the first and second matrices and the result of their addition: `Matrix after addition: 24 4 4 13`. The IDE interface shows the 'TERMINAL' tab selected, with 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', and 'PORTS' tabs visible above it. On the left, a sidebar shows a list of running instances of the application.

```
c:\code\project>cd "c:\code\project\" && javac Matrix.java && java Matrix
Enter num to perform a particular task!!
1: Addition
2: Subtraction
3: Multiplication
4: Transpose
Enter input
1
Enter number of rows in first matrix:2
Enter number of columns in first matrix:2
Enter number of rows in second matrix:2
Enter number of columns in second matrix:2
Enter all the elements of first matrix:
2 1 1
2 3 3
Enter all the elements of second matrix:
1 1 1
First Matrix:
2 1
1 2
Second Matrix:
3 3
3 11
Matrix after addition:
24 4
4 13
```

## Profiling of Mini project

Start Page x org.jetbrains.jps.cmdline.Launcher (pid 22868) x

Overview Monitor Threads Sampler Profiler [heapdump] 10:49:48 pm x

org.jetbrains.jps.cmdline.Launcher (pid 22868)

Heap Dump

Summary v

Heap		Environment	
Size:	11,038,632 B	System	Windows 11 (10.0)
Classes:	5,104	Architecture:	amd64 64bit
Instances:	168,325	Java Home:	C:\Program Files\Java\jdk-20
Classloaders:	38	Java Version:	20.0.2 2023-07-18
GC Roots:	3,126	Java Name:	Java HotSpot(TM) 64-Bit Server VM (20.0.2+9-78, mixed mode, sharing)
Objects Pending for Finalization:	0	Java Vendor:	Oracle Corporation
		JVM Uptime:	0 min 37 sec

JVM Arguments [ show ]

Enabled Modules [ show ]

System Properties [ show ]

Classes by Number of Instances [ view all ]

byte[]	32,743	(19.5%)
java.lang.String	31,389	(18.6%)
java.util.concurrent.ConcurrentHashMap\$Node	14,937	(8.9%)
java.lang.Object[]	6,264	(3.7%)
java.lang.Object	6,214	(3.7%)

Instances by Size [ view all ]

byte[]#3274: 2,147,526 items	2,147,544 B	(19.5%)
byte[]#1: 829,215 items	829,232 B	(7.5%)
int[]#70: 58,314 items	233,272 B	(2.1%)
int[]#1: 54,832 items	219,344 B	(2%)
byte[]#2010: 100,579 items	100,600 B	(0.9%)

Classes by Size of Instances [ view all ]

byte[]	5,243,688 B	(47.5%)
int[]	857,640 B	(7.8%)
java.lang.String	753,336 B	(6.8%)
java.util.concurrent.ConcurrentHashMap\$Node	477,984 B	(4.3%)
java.lang.Object[]	466,512 B	(4.2%)

Dominators by Retained Size [ view all ]

Retained sizes must be computed first:

Compute Retained Sizes

Start Page x org.jetbrains.jps.cmdline.Launcher (pid 23164) x

Overview Monitor Threads Sampler Profiler [snapshot] 10:37:00 pm x

org.jetbrains.jps.cmdline.Launcher (pid 23164)

Monitor

Uptime: 3 min 41 sec

Perform GC Heap Dump

CPU

CPU usage: 0.0%

GC activity: 0.0%

Heap

Size: 52,428,832 B

Max: 734,003,224 B

Used: 26,740,896 B

Classes

Total loaded: 6,590

Total unloaded: 1

Shared loaded: 1,228

Shared unloaded: 0

Threads

Live: 21

Live peak: 24

Daemon: 19

Total started: 31

Start Page x org.jetbrains.jps.cmdline.Launcher (pid 23164) x

Overview Monitor Threads Sampler Profiler [snapshot] 10:37:00 pm x

org.jetbrains.jps.cmdline.Launcher (pid 23164)

Threads

Live threads: 21

Daemon threads: 19

Thread Dump

Timeline

Show: Live Threads Timeline: 🔍 🔍 🔍

Name	10:36:35 pm	10:36:40 pm	10:36:45 pm	10:36:50 pm	10:36:55 pm	10:37: Running	Total
Attach Listener						107,136 ms (100%)	107,136 ms
Common-Cleaner						0 ms (0%)	107,136 ms
DestroyJavaVM						107,136 ms (100%)	107,136 ms
Finalizer						0 ms (0%)	107,136 ms
JFR Periodic Tasks						0 ms (0%)	107,136 ms
JMX server connection timeout 42						39,344 ms (36.7%)	107,136 ms
Non-Finalizing Thread						107,136 ms (100%)	107,136 ms