

An abstract geometric pattern composed of numerous triangles of various sizes and colors, including shades of yellow, orange, red, pink, purple, blue, and green, arranged in a complex, overlapping manner.

CSC116

Discussion 14

Gina Bai

Logistics

- Project 3
 - *Due today, 6/30, at 11:45pm*
- Growth Mindset #3 - Learning new thing reflection
 - *Due tomorrow, 07/01, at 11:45pm*

Topics

- File input (**import java.io.*;**) → token-based processing
 - *FileInputStream* object
 - *Scanner* object
 - *File* name
 - Hard coded
 - User input
 - Command line

Syntax:

```
Scanner name = new Scanner(new FileInputStream("filenameAsString"));
```

Examples:

```
String filename = "mydata.txt";  
FileInputStream inputStream = new FileInputStream(filename);  
Scanner inputA = new Scanner(inputStream);  
  
Scanner inputB = new Scanner(new FileInputStream("mydata.txt"));
```

Topics

- FileNotFoundException

- *Checked Exception*

- Must be **caught** or specifically **declared in the header of the method** that might generate it.

```
public static void main(String[] args) throws FileNotFoundException {  
    ...  
}
```

Practice

Given an input file, find

- 1) The number of Science majors and Social Science majors
- 2) the number of students in Science majors and Social Science majors

ComputerScience 60 Economics 55 Math 40 History 45 ...

```
Scanner input = new Scanner(new File("test-files/majors.txt"));

int count = 1;

.....

while( input.hasNext() ) { // has another major
    input.next(); // discard major name

    // check to see if science or social science
    if ( count % 2 == 1 ) {

        sciMajor++;

        sciStudent += input.nextInt() ;

    } else {

        socMajor++;

        socStudent += input.nextInt() ;

    }

    count++;

}
```

Lab 14

Write a program called **Numbers** that

- prompts the user for a file name.
- reads that file that
 - contains only integer tokens
 - contains non-integer tokens
- prints the 1) count (number of integers in the file), 2) maximum, 3) minimum, 4) sum, and 5) average of the numbers (with 2 decimal places). If the file does not contain any integers output 0 as the average.