

# Input and Output

## Scanner class

The `Scanner` class is used to read user input in a Java program. It requires declaration within a program before a user of the program is prompted to input values.

## IOExceptions

`IOException`s refer to any errors that a program may encounter that are related to the input or output of a Java program.

## Compiling Java Programs

Java programs must first be compiled into bytes, and only then can they be run using the terminal or command prompt.

## FileInputStream

In Java, `FileInputStream` is used to read data from a file into the program.

## FileOutputStream

In Java, `FileOutputStream` is used to output data from a program into a file on your computer.

## System.out

In order to print output using a Java program, a developer can use the following three commands:

- `System.out.print()` : prints in the same line a when a program is running
- `System.out.println()` : prints output in a new line

- `System.out.printf()` : prints formatted string.  
It allows for the use of format specifiers such as `"%s"` or `"%c"` that can be used to insert variable values