

Java Input/Output (I/O) is the process of reading data from or writing data to external sources, such as files, console, or network sockets. Java provides a rich set of classes and methods for performing I/O operations. Here, I'll explain the basics of Java I/O with two code examples: one for reading input from the console and another for reading and writing data to a file.

****Example 1: Reading Input from Console****

In this example, we'll use Java's `Scanner` class to read input from the console.

```
```java
import java.util.Scanner;

public class ConsoleInputExample {
 public static void main(String[] args) {
 Scanner scanner = new Scanner(System.in);

 System.out.print("Enter your name: ");
 String name = scanner.nextLine();

 System.out.print("Enter your age: ");
 int age = scanner.nextInt();

 System.out.println("Hello, " + name + "! You are " + age + " years old.");

 // Don't forget to close the scanner to release resources.
 scanner.close();
 }
}
```
```

In this code:

- We import the `java.util.Scanner` class to handle console input.
- We create a `Scanner` object to read from the `System.in` input stream, which represents the console.
- We use `nextLine()` and `nextInt()` methods to read a line of text and an integer from the console, respectively.
- Finally, we print out the collected input.

****Example 2: Reading and Writing to a File****

In this example, we'll demonstrate how to read data from one file and write it to another file.

```
```java
```

```

import java.io.*;

public class FileIOExample {
 public static void main(String[] args) {
 try {
 // Reading from a file
 BufferedReader reader = new BufferedReader(new FileReader("input.txt"));
 String line;

 // Writing to a file
 BufferedWriter writer = new BufferedWriter(new FileWriter("output.txt"));

 while ((line = reader.readLine()) != null) {
 // Process the data (in this case, just writing to another file)
 writer.write(line);
 writer.newLine(); // Add a newline character
 }

 // Close the reader and writer to release resources
 reader.close();
 writer.close();

 System.out.println("File copied successfully!");
 } catch (IOException e) {
 e.printStackTrace();
 }
 }
}

```

In this code:

- We use `BufferedReader` and `FileReader` to read data from the "input.txt" file and `BufferedWriter` and `FileWriter` to write data to the "output.txt" file.
- We read data line by line from the input file and write it to the output file.
- The `newLine()` method is used to add a newline character after each line in the output file.
- Finally, we close the reader and writer to release resources.

Make sure to replace "input.txt" and "output.txt" with the actual file paths you want to use.