02_3 Screen I/O

Object-Oriented Programming

Keyboard Input (1/4)

```java
import java.util.Scanner;

public class ScannerClass {
    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter an integer: ");         // Enter an integer:
        int number = scanner.nextInt();                  // Enter an integer: 243
        System.out.println("You entered: " + number);   // You entered: 243

        System.out.print("Enter a double number: ");  // Enter a double number: 32.534
        double dnumber = scanner.nextDouble();          // Enter a double number: 32.534
        System.out.println("You entered: " + dnumber); // You entered: 32.534
```

Keyboard Input (2/4)

```
System.out.print("Enter a word: ");               // Enter a word:
String word = scanner.next();                     // Enter a word: Korea
System.out.println("You entered: " + word);       // You entered: Korea

System.out.print("Enter a line of text: ");       // Enter a line of text:
String line = scanner.nextLine();
System.out.println("You entered: (" +
                line + ")");            // Enter a line of text: You entered: ()
```

Keyboard Input (3/4)

```
System.out.print("Enter a word: ");          // Enter a word:
String word2 = scanner.next();               // Enter a word: Korea
System.out.println("You entered: " + word2);// You entered: Korea

String dummy = scanner.nextLine();           // read out dummy = "\n";
System.out.print("Enter a line of text: "); // Enter a line of text:
String line2 = scanner.nextLine();           // Enter a line of text: Seoul Busan
System.out.println("You entered: (" + line2 + ")"); // You entered: (Seoul Busan)
```

Keyboard Input (4/4)

```
System.out.print("Enter an integer: ");      // Enter an integer:
int num = scanner.nextInt();                 // Enter an integer: 243
String dummy2 = scanner.nextLine();          // read out dummy2 = "\n"
System.out.print("Enter a line of text: ");// Enter a line of text:
String line3 = scanner.nextLine();           // Enter a line of text: Seoul Busan
System.out.println("You entered: (" + num +
                   ") (" + line3 + ")");      // You entered: (243) (Seoul Busan)
```

Input by String

```java
import java.util.Scanner;

public class InputByString {
    public static void main(String[] args) {
        String input = "Korea 123.456 5678";
        Scanner scanner = new Scanner(input);
        String str = scanner.next();
        float fnum = scanner.nextFloat();
        int inum = scanner.nextInt();
        System.out.println(str + " " + fnum + " " + inum);
        // OUTPUT: Korea 123.456 5678
    }
}
```

Changing Delimiters

```java
import java.util.Scanner;

public class InputDelimiter {
    public static void main(String[] args) {
        String input = "10 20 30";
        Scanner scanner = new Scanner(input);
        while (scanner.hasNextInt()) {
            System.out.println(scanner.nextInt());  // 10 20 30
        }
        String input2 = "10,20,30";
        Scanner scanner2 = new Scanner(input2).useDelimiter(",");
        while (scanner2.hasNextInt()) {
            System.out.println(scanner2.nextInt()); // 10 20 30
        }
    }
}
```

System.out.print(), System.out.println()

```java
public class SystemOutPrint {
    public static void main(String[] args) {
        System.out.print("Hello, "); // Hello,
        System.out.print("World!");  // Hello, World!
        System.out.println("Hello, World!"); // Hello, World!Hello, World!
        System.out.println("Welcome to Java programming.");
        // Welcome to Java programming.
        System.out.println("Number: " + 123); // Number: 123
        System.out.println("Boolean: " + true); // Boolean: true
        System.out.println("Character: " + 'A'); // Character: A
        System.out.println("" + false); // false
    }
}
```

Formatted Output: System.out.printf (1/2)

- Format Specifiers: %d: Integer %f: Floating-point %s: String %c: Character %b: Boolean

```java
public class SystemOutPrintf {
    public static void main(String[] args) {
        System.out.printf("Formatted number: %d\n", 123);
        // Formatted number: 123
        System.out.printf("Width 10: %10d\n", 123);
        // Width 10:        123
        System.out.printf("Two decimal places: %.2f\n", 123.456);
        // Two decimal places: 123.46
        System.out.printf("Left justified: %-10d|\n", 123);
        // Left justified: 123       |
```

Formatted Output: System.out.printf (2/2)

```java
        System.out.printf("%-10s %10s %10s\n", "Name", "Age", "Score");
        System.out.printf("%-10s %10d %10.2f\n", "Alice", 30, 88.5);
        System.out.printf("%-10s %10d %10.2f\n", "Bob", 25, 91.75);
        System.out.printf("Price: $%.2f\n", 19.99);
    }
}
```

```
Name              Age      Score
Alice              30      88.50
Bob                25      91.75
Price: $19.99
```