

COMPSCI 172

Scanner

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Learning Object

- System.out
- System.in
- Scanner Class



System.out

- System.out is a PrintStream object
 - Used to print texts in the console window
- Two commonly used methods:
 - print
 - `System.out.print("Input your text");`
 - Print text without changing the line
 - println
 - `System.out.println("Input your text");`
 - Print text and change a line



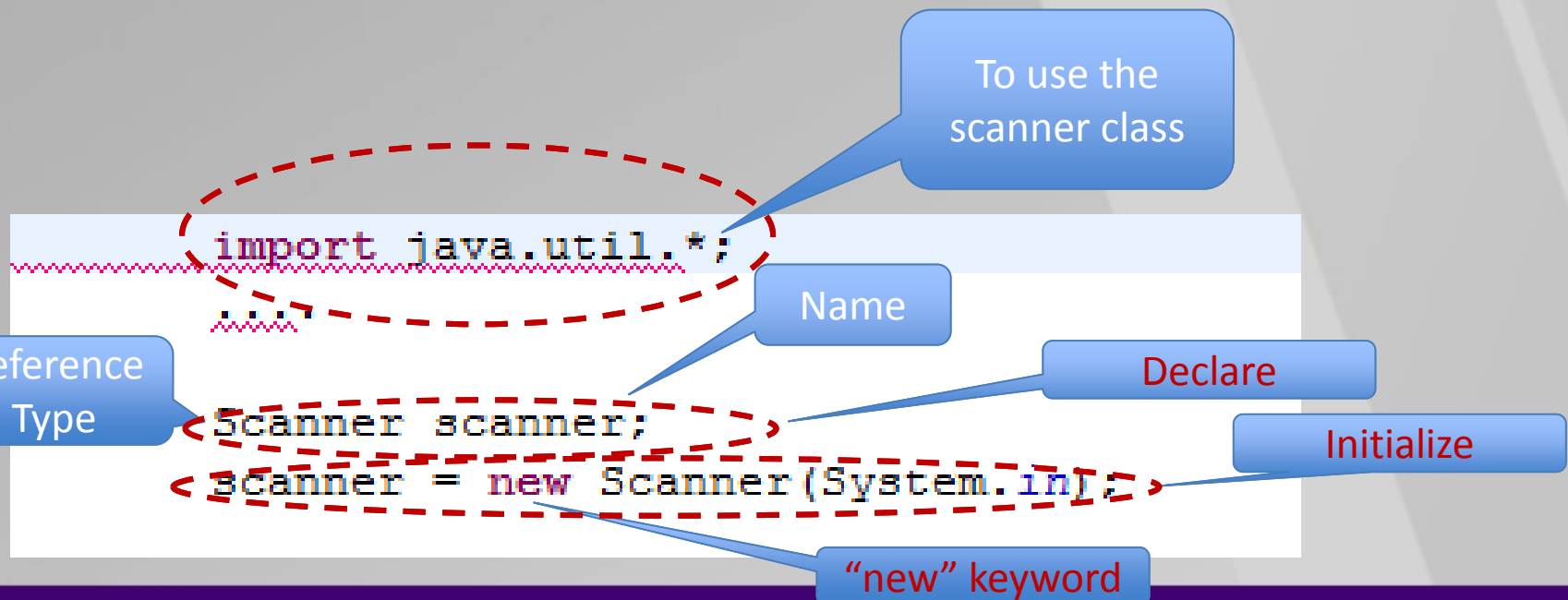
Standard Input

- Standard input accepts input from the keyboard
 - We use the term console input to refer to the standard input
 - We use `System.in` object for standard input
 - It is an instance of the `InputStream` class
 - `System.in` only provides a `read` method to input 1 byte at a time
 - `System.in` is seldom directly used
 - Reason of not using the `System.in`
 - Multiple bytes are usually required to represent common data types (e.g. strings)



Scanner Class

- A class in the **java.util package**
 - Contains a lot of useful classes
- Provides an input facility to accommodate various input routine
 - E.g. input from keyboard (console), input from a file





Use of Scanner Class

- We use the **next** method of the Scanner class to input a **single** word
 - You end your input by clicking the “**Enter**” key
 - The values you input are displayed in the console window - Echo printing

```
String name;  
name = scanner.next();  
  
System.out.println("My name is "+ name);
```

Get your keyboard
typing and store it
in “name”

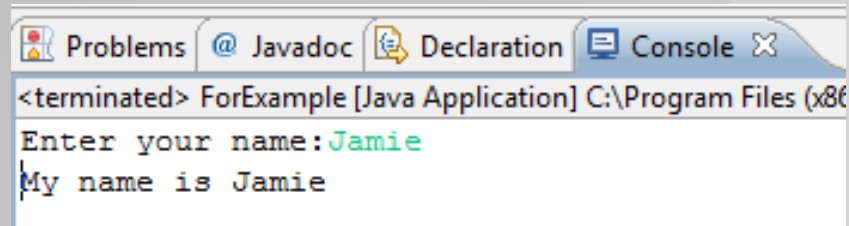
```
<terminated> ForExample [Java Application] C:\Program Files (x86)\Jav  
Jamie  
My name is Jamie
```



User-friendly Interface

- You might not know whether you should input
 - Or where to input
- Some friendly reminding words will help
 - Using the standard output
 - `System.out.print();`

```
String name;  
  
System.out.print("Enter your name:");  
name = scanner.next();  
  
System.out.println("My name is "+ name);
```





Input Several Words

- You will find that you can only get one input word displayed
 - How to input several words at one time?
 - Using next method for multiple times

```
String firstName, lastName;  
  
System.out.print("Enter your name:");  
firstName = scanner.next();  
lastName = scanner.next();  
  
System.out.println("My name is " + firstName + " " + lastName);
```

```
<terminated> ForExample [Java Application] C:\Program Files (x86)\Jav  
Enter your name:English Muffin  
My name is English Muffin
```




Input for Other Data Types

- For integer, using nextInt method

```
int j;  
j = scanner.nextInt();
```

- For double numbers, using nextDouble method

```
double y;  
y = scanner.nextDouble();
```

```
float z;  
z = scanner.nextFloat();
```



Practice IV – Scanner

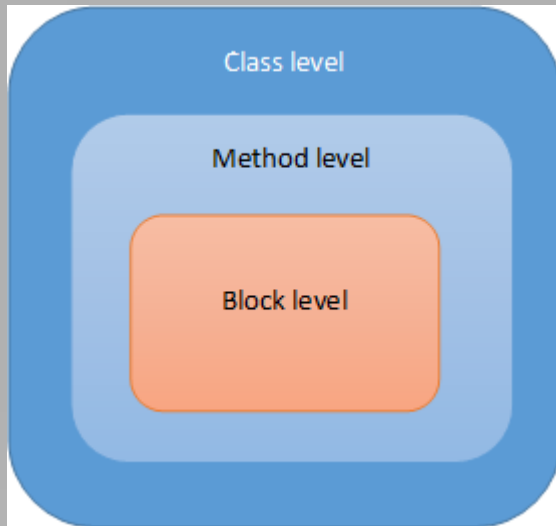
```
import java.util.*;

public class PracticeScanner{
    public static void main(String args[]){
        Scanner scanner; //declare
        scanner =new Scanner(System.in); //init
        String name;
        System.out.print("Enter your name:");
        //initialize "name" variable
        name = scanner.next(); // get user's typing
        System.out.println("My name is" + name);

    }
}
```



Summary



```
import java.util.*;  
.....  
  
Scanner scanner;  
scanner = new Scanner(System.in);  
  
String name;  
name = scanner.next();  
  
System.out.println("My name is "+ name);
```

- Scanner class
 - Import java.util.Scanner