

COMP 110 Introduction to Programming, Summer II, 2008  
 Recitation on Java Basics, Jun 25, 2008  
 Liangjun Zhang


## 1. A Complete Java Program

Type and compile this program

```
public class YourClass
{
    public static void main(String[] args)
    {
        int year = 2008;

        System.out.println("It is "+year);
    }
}
```

## 2. Expression and Operator Precedence

	Operator	Precedence
high  low	Postfix	expr++ expr--
	Unary	++expr -expr +expr -expr
	type conversion	(type) (double)
	Multiplicative	* / %
	Additive	+ -
	Assignment	= += -= *= %= /=

- Write down the order of the precedence for every operator in each expression.
- What's the value of variables after the evaluation in each expression?
- Verify these results by writing a Java program.

```
int x;
x = 3 * 7 - 6 + 2 * 5 / 4 + 6;
```

```
double f;
f = 4 * 3 + 7 / 5 - 25.5;
```

```
int m;
m = (int)(7.8 + (double)(15/2));
```

```
a = 23;
b = 5;
c = a+ b++;
d = a+( ++b );
```

### 3. String

- What's the value of str after the evaluation?
- Verify these results by writing a Java program.

```
int num1 = 10;  
int num2 = 2;  
String str = "The difference is"+ (num1 - num2);
```

- Write a program which can output the following information

```
If I had to live my life again,  
I'd make the same mistakes,  
Only sooner.  
"Tallulah Bankhead" 1903-1968
```

- What is the output?

```
int a = 11;  
int b = 22;  
int c = 33;  
int d = 44;  
  
s = "a=";  
s += a;  
s += '\n';  
  
s += "b="+b+'\n';  
s += "c="+c+'\n';  
s += "d="+d+'\n';  
System.out.println(s);
```

## 4. Input

1. Create a Scanner object and associate it with the standard input device: System.in  
`Scanner console = new Scanner(System.in);`
2. Input an integer  
`int i = console.nextInt();`
3. Input a double  
`double d = console.nextDouble();`

Write a program that prompts the user to input the radius of a sphere, then output the volume of the sphere.

$$v = \frac{4}{3} \pi r^3$$