BIRZEIT UNIVERSITY

Selections

زي ما قلنا سي

By: Mamoun Nawahdah (Ph.D.)
2018

Comparison Operators

Java Operator	Mathematics Symbol	Name	Example (radius is 5)	Result
<	<	less than	`radius < 0`	`false`
<=	≤	less than or equal to	`radius <= 0`	`false`
>	>	greater than	`radius > 0`	`true`
>=	≥	greater than or equal to	`radius >= 0`	`true`
==	=	equal to	`radius == 0`	`false`
!=	≠	not equal to	`radius != 0`	`true`

2

if-else

```
if (radius >= 0) {
   area = radius * radius * 3.14159;
   System.out.println("The area for the " +
   "circle of radius " + radius +  " is " + area);
}
else {
   System.out.println("Negative input");
}
```

3

Common Errors

❖ Adding a **semicolon** at the end of an **if** clause is a common mistake.

```
if (radius >= 0) ;
{
   area = radius*radius*PI;
   System.out.println( "The area for the circle is " + area);
}
```

Wrong

❖ This mistake is hard to find, because it is not a compilation error or a runtime error, it is a **logic** error.

❖ This error often occurs when you use the next-line block style.

4

Logical Operators

Operator	Name
!	not
&&	and
||	or
^	exclusive or

5

switch Statements

```
switch (status) {
      case 0:  compute taxes for single filers;
               break;
      case 1:  compute taxes for married file jointly;
               break;
      case 2:  compute taxes for married file separately;
               break;
      case 3:  compute taxes for head of household;
               break;
      default: System.out.println("Errors: invalid status");
               System.exit(1);
}
```

6

Problem: Chinese Zodiac

Write a program that prompts the user to enter a year and displays the animal for the year.

year % 12 =
0: monkey
1: rooster
2: dog
3: pig
4: rat
5: ox
6: tiger
7: rabbit
8: dragon
9: snake
10: horse
11: sheep

7

Conditional Operator

```
if (x > 0)
    y = 1;
else
    y = -1;
```

❖ is equivalent to:

```
y = (x > 0) ? 1 : -1;
```

(boolean-expression) **?** expression1 **:** expression2

8

Conditional Operator

```
if (num % 2 == 0)
    System.out.println(num + “is even”);
else
    System.out.println(num + “is odd”);
```

```
System.out.println(  (num % 2 == 0)  ?
      num + “is even” :  num + “is odd” );
```

9

Formatting Output

❖ Use the **printf** statement:

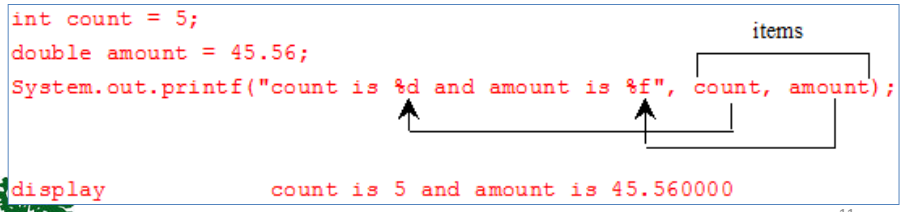
```
System.out.printf( format, items );
```

- Where format is a string that may consist of substrings and **format specifiers**.
- A format specifier specifies how an item should be displayed.
- An item may be a numeric value, character, boolean value, or a string.
- Each specifier begins with a **percent** sign.

10

Frequently-Used Specifiers

Specifier	Output	Example
%b	a boolean value	true or false
%c	a character	'a'
%d	a decimal integer	200
%f	a floating-point number	45.460000
%e	a number in standard scientific notation	4.556000e+01
%s	a string	"Java is cool"



11