

**Wednesday, Aug
27**

I.4 Assignment Statements and Input

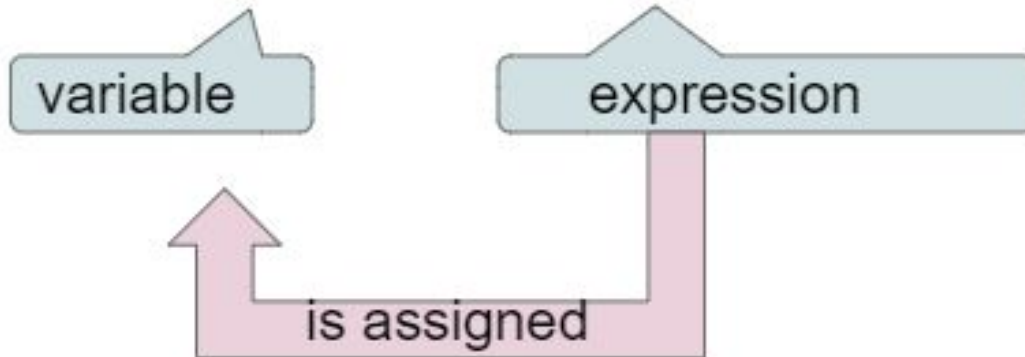
Agenda

- Assignment Statements
- Data Types in Assignments
- Adding 1 to a Variable
- Input with Variables

Assignment Statements

- Assignment statements initialize or change the value stored in a variable using the assignment operator =.

score = (10 * points) + 5;





How do we “copy” variables?

“Copy” a Value

```
public class Example
{
    public static void main(String[] args)
    {
        int x = 8;
        int y = 15;
        y = x;
        x = 0;
    }
}
```



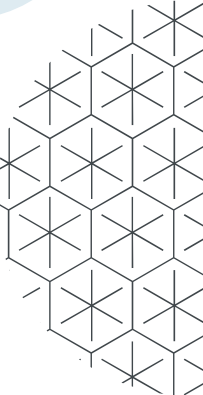
We know how to “copy” variables now.
**But how do we “swap”
variables?**

“Swap” Variables

- Based on the code to “copy” variables, write code that swaps the value two `int` variables `x` and `y`.
- Hint: you might need to create new variable(s).
- Create a new file.
- Open Schoology, copy n paste code Ms. Gee wrote for you in Swap file.

```
1  /*
2  AP CS A
3  Name: Ms. Gee
4  Date: August 26, 2024
5  */
6
7  public class Swap {
8      public static void main(String[] args){
9          /**
10           * Based on the code to "copy" variables, write code
11           * that swaps the value two int variables x and y.
12           * Hint: you might need to create new variable(s).
13           */
14
15           int x = 0;
16           int y = 9;
17
18           System.out.println("Before swap x: " + x);
19           System.out.println("Before swap y: " + y);
20
21           /* to be implemented */
22
23           System.out.println("After swap x: " + x);
24           System.out.println("After swap y: " + y);
25       }
26   }
```

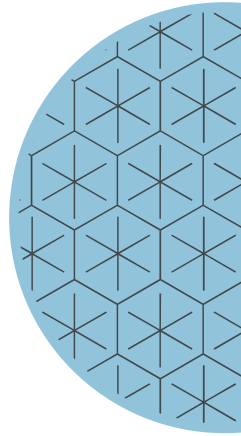




```
1 public class Swap
2 {
3     public static void main(String[] args)
4     {
5         /**
6          * Based on the code to "copy" variables, write code
7          * that swaps the value two int variables x and y.
8          * Hint: you might need to create new variable(s).
9          */
10
11         int x = 0;
12         int y = 9;
13
14         System.out.println("Before swap x: " + x);
15         System.out.println("Before swap y: " + y);
16
17         int temp;
18         temp = x;
19         x = y;
20         y = temp;
21
22         System.out.println("After swap x: " + x);
23         System.out.println("After swap y: " + y);
24
25     }
26 }
```


Input with Variables

- Input can come in a variety of forms, such as tactile for example by clicking on a button, audio with speech, visual using a webcam, or the most common form, text that the user types in.
- The **Scanner** class in Java is one way to obtain text input from the keyboard.



Input with Variables

```
1  /*
2  AP CS A
3  Name: Ms. Gee
4  Date: August 26, 2024
5  Description: The Scanner class is used to get user input,
6               and it is found in the java.util package.
7  */
8
9  import java.util.Scanner;
10
11 public class MyClass {
12     public static void main(String args[]) {
13         System.out.println("Please type in a name in the input box below.");
14         Scanner scan = new Scanner(System.in);
15         String name = scan.nextLine();
16         System.out.println("Hello " + name);
17         scan.close();
18     }
19 }
20
```

Input Types

In the example above, we used the `nextLine()` method, which is used to read Strings. To read other types, look at the table below:

| Method | Description |
|----------------------------|--|
| <code>nextBoolean()</code> | Reads a <code>boolean</code> value from the user |
| <code>nextByte()</code> | Reads a <code>byte</code> value from the user |
| <code>nextDouble()</code> | Reads a <code>double</code> value from the user |
| <code>nextFloat()</code> | Reads a <code>float</code> value from the user |
| <code>nextInt()</code> | Reads a <code>int</code> value from the user |
| <code>nextLine()</code> | Reads a <code>String</code> value from the user |
| <code>nextLong()</code> | Reads a <code>long</code> value from the user |
| <code>nextShort()</code> | Reads a <code>short</code> value from the user |

Challenge

- Go back to your Swap.java file
- Modify your code so that your program prompts user input for initial values of `int` variables `x` and `y`.



Let's do some practice!

- ONLY ONE partner open the 1.4 Assignment Statements and Input in Runestone CS Awesome.
- Let's work together to complete these coding problems. Alternate which partner takes the lead.



Assignments

- Project 0 due on Monday, Aug 25
- Progress Check 1A due on Monday, Sep 1
- Quiz 1A on Tuesday, Sep 2

Reminders!

- Help Ms. Gee prepare for the next class by leaving the space cleaner than you found it.
- Everyone please tidy up all materials you used.