2.5 Variables

Key point: Variables are used to represent values that may be changed in the program.

2.5 Variables

1     // Compute the first area
2     radius = 1.0;          radius: 1.0
3     area = radius * radius * 3.14159;     area: 3.14159
4     System.out.println("The area is "+ area + " for radius "+ radius);
5
6     // Compute the second area
7     radius = 2.0;          radius: 2.0
8     area = radius * radius * 3.14159;     area: 12.56636
9     System.out.println("The area is "+ area + " for radius "+ radius);

• Variables store values of a particular type. Variables store only one value at a time.
• A type is like a set.
• The variable declaration tells the compiler to allocate storage for the variable based on
the type assigned to the variable

datatype variablename;

• Example declarations:

    int count;       //Declare count to be an integer variable
    double radius;      //Declare radius to be a double variable
    double interestRate;    //Declare interestRate to be a double variable

• Variables of the same type can be declared together.

datatype variable1, variable2, ..., variablen;

• Example declarations:

    int i,j,k;        //Declare i, j, and k as int variables

• Variables can be declared and initialized at the same time.

    int count = 1;

is the same as

    int count;
    count = 1;

• Variables of the same type can be initialized together.

    int i = 1, j = 2;
Tip: A variable must be declared before it can be assigned a value.

Scope: Every variable has a scope. The *scope of a variable* is the part of the program where the variable can be referenced.