|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Max/Min Vaue** | **Memory Use** | **Comment** |
| short | -32,768 / 32,768 | 2 bytes | Ideal for programs where small numbers will be enough |
| int | -2,147,483,648 / 2,147,483,648 | 4 bytes | Ideal for most programs where numbers may become larger |
| double | large, but employs scientific notation for larger numbers. Allows the use of decimals | 8 bytes | Ideal where you need to keep track of decimals |
| String | Stores an array of characters. This allows you to store a combination of letters, symbols, characters and numbers | large | For use when you need to track things like names. Size varies by length. Approx 1 byte per character. |

**Variable Types in Java:**

**Exercise:**

public class Variables

{

public static void main(String[] args)

{

double shoeSize;

String name;

shoeSize = 12;

name = "Mr. Cohen";

System.out.println();

System.out.println("Your name is " + name);

System.out.println("Your shoe size is " + shoeSize);

}

}

1. Enter the code above into a Java program in BlueJ. Compile and run your code. What is the output?

It outputs “Your name is Mr. Cohen”

And the line below it is “Your shoe size is 12”

2. Describe what the first two lines do (starting at double shoeSize).

We are declaring variables shoeSize and name (these variables have no value assigned to them yet)

3. Describe what the rest of the program does. Ensure that you include an explanation of the role that variables play in this program.

“shoeSize = 12;” is assigning the value of 12 to the variable shoeSize

“name=” Mr. Cohen”;” is assigning a string to the variable name

The rest “system.out.println(“your [name/shoesize] is” *varname*);” is basically printing out a string attached to the variables onto the console.

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**Variable Type Exercise**

For each situation, decide which variable type you would use to keep track of the information: *(String, short, int or double)*

|  |  |
| --- | --- |
| 1. The user’s shoe size | double |
| 1. The user’s full name | string |
| 1. The result of adding two round numbers which you expect to be no more than 1,000,000 | int |
| 1. The result of division to calculate a percentage | double |
| 1. A program written to calculate how many seconds there are in one million years. | int |
| 1. The user’s phone number | string |
| 1. The users average as a percentage – I.e. 67% would be represented as 0.67 | double |
| 1. The number of stars in the galaxy | Int (always changing) |
| 1. A home address | string |
| 1. A URL (link to a web page) | string |
| 1. The number of files in your student directory | short |
| 1. The name of a file | string |
| 1. The amount of money in a bank account | double |
| 1. A locker combination in the format 12-34-56 | string |
| 1. The number of centimeters of snow expected in a snowfall | double |

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