Lesson 2

Primitive Variables

Today's Lesson Plan

1. What are variables?
2. Types of Common Variables
    a. Integers
    b. Doubles
    c. Boolean
3. Initiation + Modifying Variables
4. Naming Conventions
5. Simple Math Operators

What are variables?

- A piece of memory that can contain data
- Usually used to run Java functions and carry out tasks
- Each variable has a data type
  - Determines what can be stored in it
- Primitive Variables: The most common types of variables, stores simple information

Primitive Variable Types

- 8 Different Primitive Variables
- boolean, byte, char, short, int, long, float, double

Common Primitive Variables

- Most common primitive variable types are boolean, int, double

Boolean Variables

Boolean variables are variables that state whether a statement is true or false. The only two values for a boolean is true and false.

Examples:

```
boolean happy = true;

boolean sad = false;
```

Integer Variables

Integer variables are variables that can only store integers. It cannot store decimals. However, it can store both positive and negative integers.

Examples:

```
int num1 = 100;

int num2 = -100;
```

Double Variables

Double variables, like int variables, can store numbers. However, they are not limited to just integers. Doubles can store decimals with up to 16 decimal points.

Examples:

```
double decimal1 = 0.12345;

double decimal2 = 0.54321;

double decimal3 = 5.0;
```

String Variables

String variables store words, which are a “string” of characters. The words stored in String variables are usually surrounded by quotes. **S**tring is NOT a primitive variable type.

Examples:

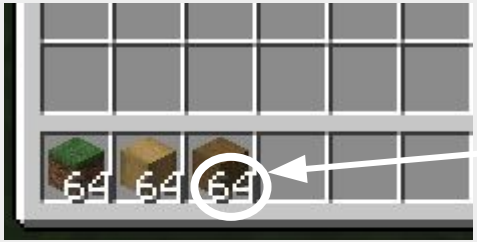
```
String name = “bob”;

String age = “15”;

String notMyName = “BOB”;
```

Match the Variable

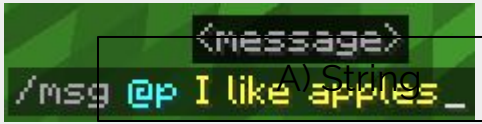
1)



2)

3)

4)



A) String

B) Integer

C) Double

D) Boolean

Creating Variables

In order to create a variable, the data type is listed followed by the name, an equal sign, and its value. At the end of the statement, a semicolon should be included. (this is true for all statements)

Examples:

```
int length = 24;

boolean isNice = true;

double money = 6.23;
```

Creating Variables Pt. 2

Another way is to create (declare) a variable and assign a value to it later.

```
int x;

x = 20;
```

It is also possible to create multiple variables at the same time.

```
int x,y;

x = 10;

y = 10;
```

How to Name Variables

There are certain rules you must follow when naming variables:

1. The first letter should always be lowercase
2. Must use Camel Case
    a. The beginning of new words should be capital
    b. Ex. `myNameIsKarina, isSunny`
3. Cannot contain spaces
4. Should always start with a letter

Remember: All variable names are case-sensitive!

Examples of Variable Names

Correct	Wrong
myNameIsBob	Myname isboB
monkey	Monkey
isFemale123	isfemale#&%
iLikePizza	I like pizza
sum5678	5678sum

Arithmetic Operations

- 5 basic math operations
  - Addition +
  - Subtraction -
  - Division /
  - Multiplication *
  - Mod %
    - Returns the remainder of one item divided by another number

Assignment Operators

- 5 basic assignment operators
  - `=, +=, -=, *=, /=`
- `num2 = num1;`
  - Assigns the value `num1` to the variable `num2`
- `num2 += num1;`
  - Is equivalent to `num2 = num2 + num1;`
- `num2 -= num1;`
  - Is equivalent to `num2 = num2 - num1;`
- `num2 *= num1;`
  - Is equivalent to `num2 = num2 * num1;`
- `num2 /= num1;`
  - Is equivalent to `num2 = num2 / num1;`

Kahoot

Use this link to start a kahoot game!

https://play.kahoot.it/v2/lobby?quizId=658a6bc1-245f-4bd4-beb3-daf3561b7bc1

Q & A Sessions

Join us this Sunday from 2:00 PM to 3:30 PM at Cerritos Library on the first floor East end to ask questions and play games!

If you cannot make it in person, join us through Zoom!
https://us02web.zoom.us/u/kc2XLcS6Hy

Questions?

Contact us here:

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