Lesson 21:

Strings and Classes

Java has two basic kinds of data types:

- Primitive
  - Holds only one piece of data at a time
  - Example: int and double

Strings and Classes

Java has two basic kinds of data types:

Class

- Holds more than one piece of data at a time
- Can hold data of different types
- Has built in methods (tools)
- Users can create their own classes
- Example: Strings

How are variables stored in memory?

Primitive types

The variable holds the actual value

```
int num1 = 17;
```

Strings and Classes

How are variables stored in memory?

Class types

The variable holds the memory location of the actual data – REFERS to it

```
String word1 = “Hello”;
```

Strings and Classes

```
String a = “what”;

String b = a;
```

What if there is no reference?

```
String word;
```

What does `word` hold?

null - special value that means “no reference”

Garbage Collection

```
String alpha = “The final frontier”;
alpha = null;
```

What happens to “The final frontier”?

It is garbage collected. Java goes through and “cleans up” any unattached values in memory.

What happens?

```
String alpha = "The final frontier“;
String beta = alpha;
alpha = null;
```

So why can't I use == ?

```
String a = “Howdy”;
String b = “Howdy”;
```

The == tests the value stored directly in `a` and `b`

These are two **different** memory locations