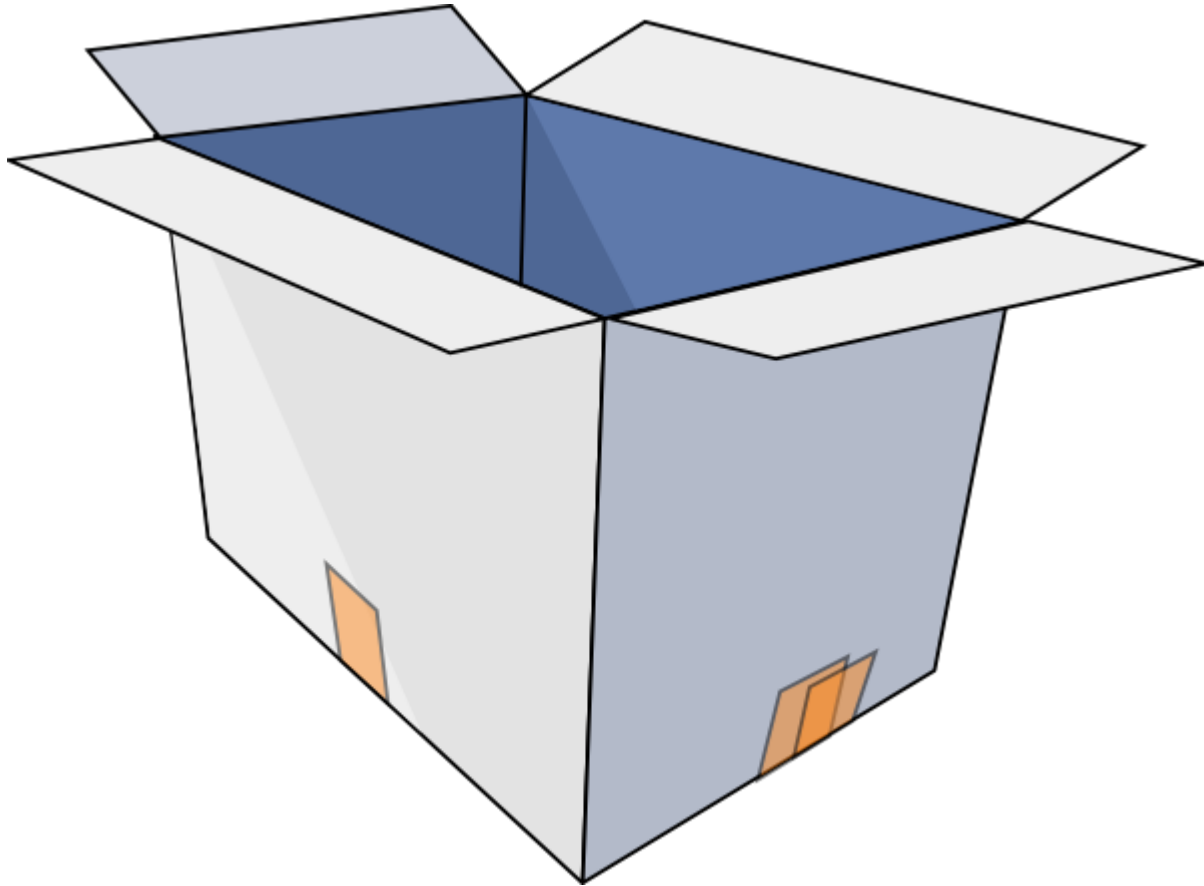


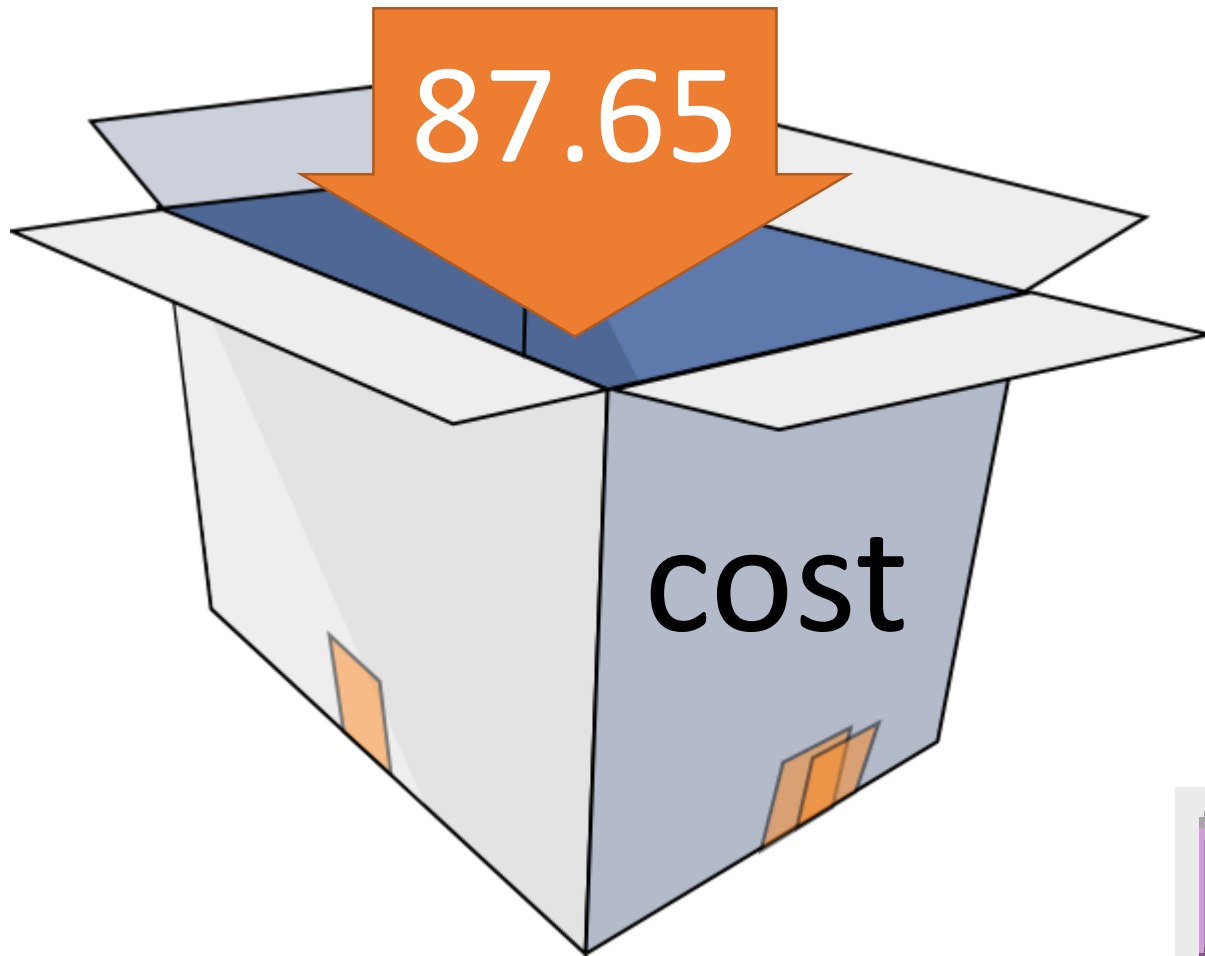
Variables and Types

Number, Text



A **variable** is used in programming to store a value until we need it again.

It is sort of like a box.



Variables have **names** so that you can call them again in your code.

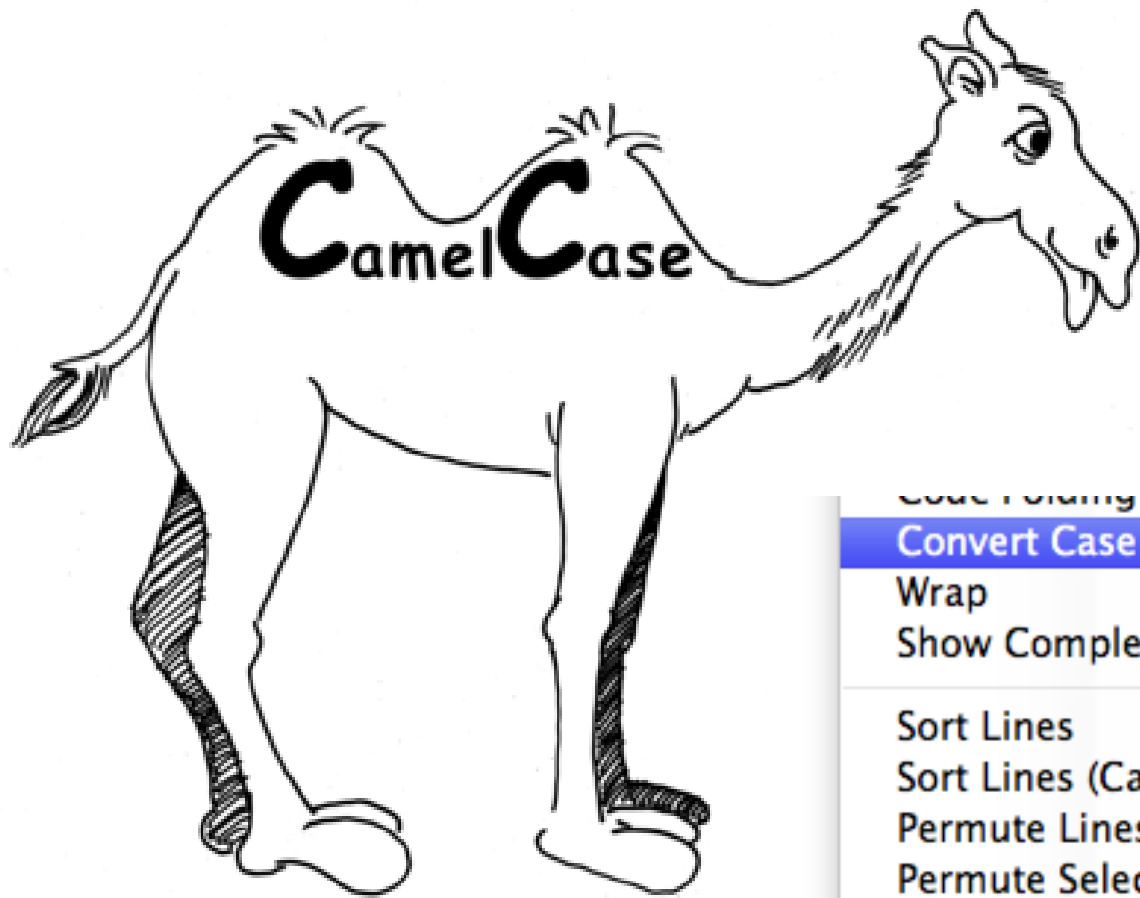
```
var cost = 87.65;
```

Variable Naming Rules:

Because variables are used in the code, they have to be named carefully so the computer can understand.



1. No spaces. Camel case or underscores are fine.
2. Meaningful is easier in the long run.
3. Cannot start with a number. Otherwise, numbers are fine.
4. Cannot contain odd characters.
5. Cannot contain reserved words. (eg. `setText` or `onEvent`).
These already have a purpose in javascript.



Code Folding

- Convert Case ▶
- Wrap ▶
- Show Completions ^ Space

- Sort Lines F5
- Sort Lines (Case Sensitive) ^ F5
- Permute Lines ▶
- Permute Selections ▶

- Special Characters... ⌘ T

| | |
|---------------------|-----------------|
| Title Case | |
| Upper Case | ⌘K, ⌘U |
| Lower Case | ⌘K, ⌘L |
| Swap Case | |
| snake_case | ^⌘C, ^⌘S |
| camelCase | ^⌘C, ^⌘C |
| PascalCase | ^⌘C, ^⌘P |
| dot.case | ^⌘C, ^⌘D |
| dash-case | ^⌘C, ^⌘H |
| separate_words | ^⌘C, ^⌘W |
| separate/with/slash | ^⌘C, ^⌘/ |



Which are valid variable names?

2many

impt*

T or F

tallTree

yOrN?

chicken

Naming Rules

1. No spaces.
2. Meaningful.
3. Cannot start with a number.
4. Cannot contain odd characters.
5. Cannot contain reserved words.

Javascript variables also have two types: **text** and **number**.

- A type is a kind of data – for example, words are text.
- A type is also an amount of RAM allocated to a variable.
- A type is also the kinds of operations that can be done with a variable.

Text Data Examples

- Gorski
- cat
- Frogs are green
- (905) 567-9345

Number Data Examples

- 78.545
- -4
- 98
- 0

Name

Value

```
1 var cost = 87.65;  
2  
3 var name = "Gorski";  
4  
5 var count = 0;  
6  
7 var title = "Intro to CS";  
8  
9 var subtotal = 8.34;
```

Making a new variable is called **declaring** a variable.

To make a new variable, write:
`var variableName = startValue;`

What do you think 'var' is short for?

| | Name | Value |
|---|----------|---------------|
| 1 | cost | 87.65 |
| 3 | name | "Gorski" |
| 5 | count | 0 |
| 7 | title | "Intro to CS" |
| 9 | subtotal | 8.34 |

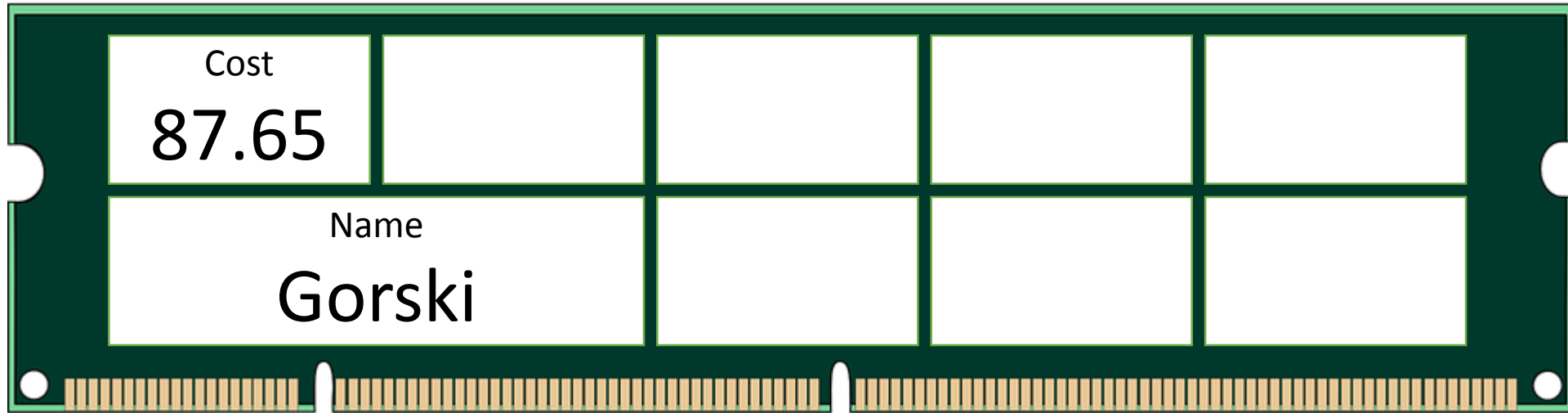
How many variables are declared here?

What are the variables' names and values?

| | Name | Value |
|----|--------------|------------------|
| 1 | var cost | = 87.65; |
| 2 | | |
| 3 | var name | = "Gorski"; |
| 4 | | |
| 5 | var count | = 0; |
| 6 | | |
| 7 | var title | = "Intro to CS"; |
| 8 | | |
| 9 | var subtotal | = 8.34; |
| 10 | | |

What type is each variable: Number or Text?

In the code, what goes around values in text variables?

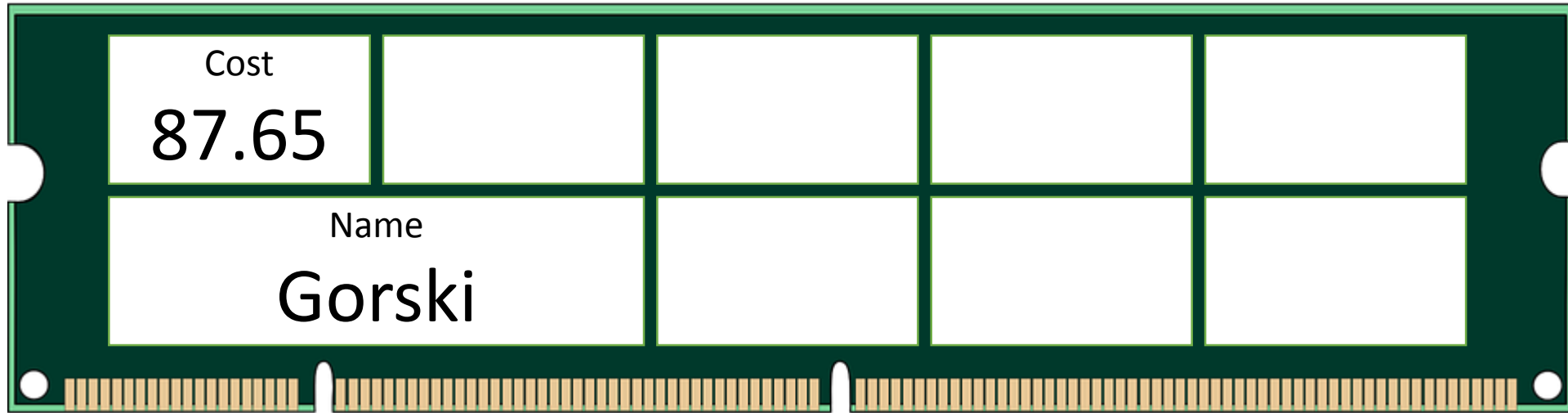


A **variable** is a space in RAM.
It has a name, a value, and a type.

Its value can change whenever you want. Its name and type cannot.

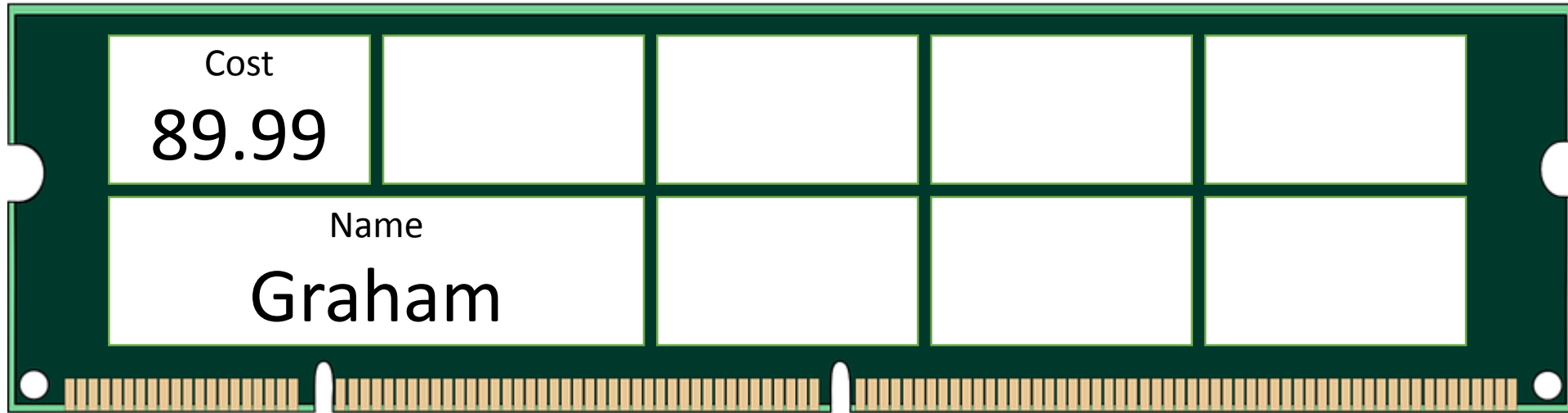
```
var cost = 87.65;
```

```
var name = "Gorski";
```



```
var cost = 87.65;  
var name = "Gorski";
```

Which type requires more RAM: number or text?



```
1 var cost = 87.65;  
2 cost = 89.99;  
3  
4 var name = "Gorski";  
5 name = "Graham";  
6
```

You can **assign** new values to a variable using an equal sign.

Only the most recent values are stored in RAM.

```
var size of circle = 150;  
var 1dimension = 100;  
var yLocation = 200;
```