

Introduction to Programming

Class 5, 16 January 2017

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Goals

Goal 1: Review full rubric for Unit 1

Goal 2: Practice, practice, practice

Vocabulary

Analogy

Magic Numbers

Modulo

Debugging

SyntaxError

ReferenceError

Code

%

Pair Up

Line up alphabetically by second (middle) name.

Fold: If you had your human body, but the head of an animal, what animal would you pick?

Review

What is an **ALGORITHM**?

Review

What is an **ALGORITHM**?

A **series** of **finite** steps that will **solve a problem**.

Review

What are the two **PRIMITIVES**?

Review

What are the two **PRIMITIVES**?

Strings and **Numbers**

Review

What is an example of an **OPERATOR**?

Review

What is an example of an **OPERATOR**?

+ is an operator. **Concatenation** for **Strings** and
addition for **Numbers**

Review

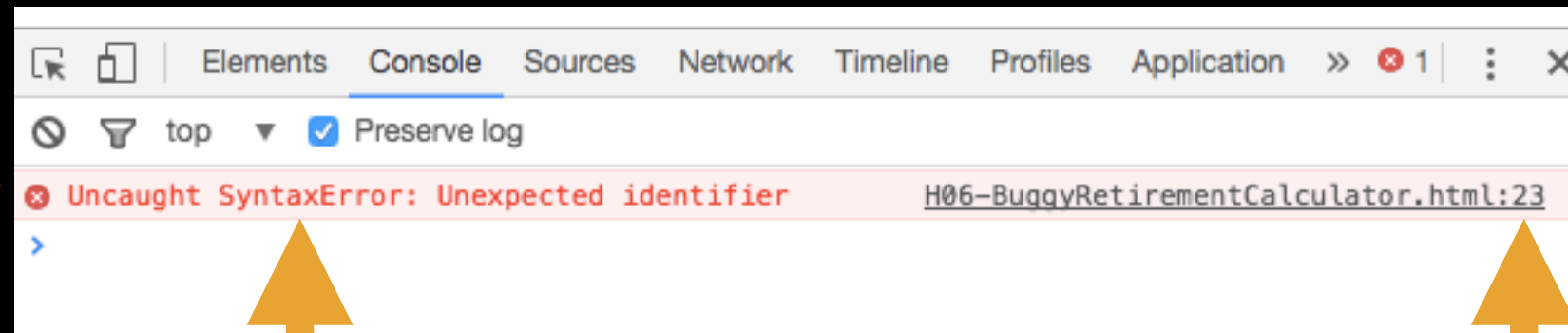
Complete the analogy:
Primitives : Operators as _____ : _____

\$ sync

Time to Grade

1. Open Task06-RetirementCalculator
2. Swap computer with partner
3. Use rubric to grade partner's program

Error!



Error Type: SyntaxError

Error Location : Best Guess Line Number

```
22  
23   Do the calculations to find how many years until  
    retirement and the year  
24   var yearsLeft = retirementage - currentage;  
25   var retirementYear = currentYear + yearsLeft;  
26
```

Time to Practice

1. Complete Task07 together. Switch after 5:00.
2. Complete assessment tasks on your own

New Operator

% is called the **Modulo** (or modulus) operator

 **% means remainder**

$20 \% 9$
evaluates to 2
remainder of $20 / 9$

Magic Numbers and Using Variables for Clarity

```
<script>
```

```
// Get input from user
```

```
var lengthString = prompt("What is the length of the room in feet?");
```

```
var widthString = prompt("What is the width of the room in feet?");
```

```
// Convert input from strings to numbers
```

```
var length = parseInt(lengthString);
```

```
var width = parseInt(widthString);
```

```
// Do the calculations to find the areas
```

```
var areaSqMeters = length * width * 0.09290304;
```

```
// Put together the output string
```

```
var output = "The area is\n" + areaSqFeet + " square feet\n" +  
areaSqMeters.toFixed(1) + " square meters";
```

```
// Print the output
```

```
alert(output);
```

```
</script>
```


Magic Numbers and Using Variables for Clarity

```
<script>
```

```
// Get input from user
var lengthString = prompt("What is the length of the room in feet?");
var widthString = prompt("What is the width of the room in feet?");

// Convert input from strings to numbers
var length = parseInt(lengthString);
var width = parseInt(widthString);

// Do the calculations to find the areas
var areaSqFeet = length * width;
var areaSqMeters = areaSqFeet * 0.09290304;
// Put together the output string
var output = "The area is\n" + areaSqFeet + " square feet\n" +
areaSqMeters.toFixed(1) + " square meters";

// Print the output
alert(output);
</script>
```

MAGIC NUMBER!



Magic Numbers and Using Variables for Clarity

```
<script>
var CONVERSION_FACTOR = 0.09290304;
// Get input from user
var lengthString = prompt("What is the length of the room in feet?");
var widthString = prompt("What is the width of the room in feet?");

// Convert input from strings to numbers
var length = parseInt(lengthString);
var width = parseInt(widthString);

// Do the calculations to find the areas
var areaSqFeet = length * width;
var areaSqMeters = areaSqFeet * CONVERSION_FACTOR;
// Put together the output string
var output = "The area is\n" + areaSqFeet + " square feet\n" +
areaSqMeters.toFixed(1) + " square meters";

// Print the output
alert(output);
</script>
```

Time to Practice

1. Complete Task08 together. Switch after 5:00.
2. Complete assessment tasks on your own

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