



**ENTRINSICON**  
***LEVEL UP!***

September 26<sup>th</sup>-29<sup>th</sup>, 2023  
Raleigh, NC

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# Introduction to Calculated Columns

Variables, Conditions, and  
String Manipulation

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# Agenda

- 1 Template vs. Script
- 2 Variables and Methods
- 3 Template Examples
- 4 JavaScript Concepts
- 5 JavaScript Examples


# Creating a Calculated Column


## Edit Columns

Save Save and Close Cancel Reset Add Fields **Add Calculations**

 **Add a Calculation**  
Add a new calculated column to your report.

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 **Template**  
Embed html templates such as text, links, images, or videos

 **Script**  
Choose from a library of registered functions, or create your own

< Back Add Calculation Close

# Template v. Script

## Templates


- Written with plain text or HTML
- Used for formatting pre-existing data
- Does NOT permit data manipulation

## Scripts

- Written with JavaScript
- Does permit data manipulation

# Template Concatenation

First Name	Last Name
Pascale	Cartrain
Liz	Nixon
Liu	Wong
Karin	Josephs
Miguel	Angel Paolino
Anabela	Domingues
Helvetius	Nagy
Palle	Ibsen
Mary	Saveley
Paul	Henriot


 **New Template Column** x

Embed html templates such as text, links, images, or videos

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Header  
Full Name

Expression  
\${first\_name}



< Back Add Calculation Close

# Template Concatenation

Drag and Drop into the Expression Box

``${firstName} `${lastName}`

Creates:

First Name	Last Name	Contact Name
Pascale	Cartrain	Pascale Cartrain
Liz	Nixon	Liz Nixon
Liu	Wong	Liu Wong
Karin	Josephs	Karin Josephs

# JavaScript Concepts- Variables and Methods

- **Variables are containers for data values**
- **Similar data types interact with one another**
- **Methods are mini reusable programs for common tasks**



# JavaScript Concepts – Variable Data Types

Data Type	Example
Numeric	1037, 0, 0.05, -157
String	'Hello!' "", '5'
Boolean	True, False
Date	12/25/2000, 7-26-1990
Multi-value	['one', 'two', 'three']

# JavaScript Concepts – Arithmetic Operators for Numeric Data Types

Operator	Function
=	Assign value
+	Addition / Concatenation
-	Subtraction
*	Multiplication
/	Division
%	Modulo (Remainder)

# JavaScript Concepts – Conditionals

Used when you want output to change based off the value of something else

## Two types

- If/Else statement (based on logical compare)
- Switch statement (based on variable value)

# JavaScript Concepts – Conditional Comparisons

Operator	Function
==	Is equal to
!=	Is not equal to
>	Is greater than
<	Is less than
>=	Is greater than or equal to
<=	Is less than or equal to
&&	And
	Or
!	Not

# JavaScript Concepts – Conditionals

If Statement	Switch Statement
<pre>if(condition) {     statement; } else if(condition2) {     statement; } else {     statement; }</pre>	<pre>switch (n) {     case value1:         statement;         break;     case value2:         statement;         break;     default:         statement; }</pre>


# Script #1 – Seats Available

Class ID	Max Capacity	—	Students Enrolled	➔	Seats Available
10643	20		17		3
10692	35		16		19
10702	50		40		10
10835	30		13		17
10952	20		12		8
11011	25		7		18
10308	40		31		9
10625	30		24		6

# Script #1 – Seats Available

Subtract the two columns from one another

## Column Display Editor

OK	Apply	Cancel	Remove
Column Header *	<input type="text" value="Seats Available"/>		
Alias	<input type="text" value="seatsAvailable"/>		
Type	Script		
Expression	<input type="text" value="maxCapacity-studentsEnrolled"/> 		

# Script #2 – Color Coding

Class ID	Max Capacity	Students Enrolled	Seats Available	Low Seat Warning
10643	35	18	17	Seats Available
10692	25	1	24	Seats Available
10702	25	16	9	Running out of seats!
10835	40	31	9	Running out of seats!
10952	35	29	6	Running out of seats!
11011	50	49	1	Critically Low Seating!
10308	55	48	7	Running out of seats!



# Script #2 – Color Coding

Assign HTML styling based on some condition

Expression

```
if(seatsAvailable<5){  
  "<div style='color:red'>Critically Low Seating!</div>";  
}  
else if(seatsAvailable<10){  
  "<div style='color:orange'>Running out of seats!</div>";  
}  
else{  
  "<div style='color:green'>Seats Available</div>";  
}
```



## Script #2 Code

```
if (seatsAvailable<5) {  
    "<div style='color:red'>Critically Low Seating!</div>";  
else if (seatsAvailable<10) {  
    "<div style='color:orange'>Running out of seats!</div>";  
else {  
    "<div style='color:green'>Seats Available</div>";  
}
```

# Script #2 Code – more rigorous

```
var seatsAvailable = your_column_alias_name;
var result = '';
if (seatsAvailable < 5) {
    result = "<div style='color:red'>Critically Low Seating!</div>";
} else if (seatsAvailable < 10) {
    result = "<div style='color:orange'>Running out of seats!</div>";
} else {
    result = "<div style='color:green'>Seats Available</div>";
}
result;
```

# String Manipulation

String types have special methods that work with all strings

- Technically, there are properties, methods, and functions but for simplification, call them methods
- Methods are like mini programs or i-descriptors (U2)
- Methods return a value based on the initial data and possibly other parameters
- Example: `string.function()`

# String Manipulation Method Examples

**length** total characters in string OR elements in array

**concat()** append one object to another

**substr()** extract part of a string

**toLowerCase()** convert text to lower case

**trim()** removes whitespace from both sides of a string

**indexOf()** find the first occurrence of a substring  
(only Java 8)

# Script #3 – String Manipulation – Create Username

First Name	Last Name	Username	Contact Name
Pascale	Cartrain	pcartrain	Pascale Cartrain
Liz	Nixon	lnixon	Liz Nixon
Liu	Wong	lwong	Liu Wong
Karin	Josephs	kjosephs	Karin Josephs
Miguel	Angel Paolino	mpaolino	Miguel Angel Paolino
Anabela	Domingues	adomingues	Anabela Domingues
Helvetius	Nagy	hnagy	Helvetius Nagy

# Script #3(a) – String Manipulation – Create Username

Don't forget edge cases. Example: Two Last Names

Multiple ways to accomplish the same thing

```
var firstInitial = firstName.substr(0,1);
var firstInitialLower = firstInitial.toLowerCase();
var lastLower = lastName.toLowerCase();

if (lastLower.indexOf(" ") > -1){ //if space is found, use 2nd last name
    firstInitialLower + lastLower.substring(lastLower.indexOf(" ")+1, lastLower.length);
} else {
    firstInitialLower + lastLower;
    // firstInitialLower.concat(lastLower); (alternative option)
}
```

# Script #3(b) – String Manipulation – Create Username

## Multiple ways to accomplish the same thing

```
var firstInitialLower = firstName.substr(0,1).toLowerCase();  
var lastLower = lastName.toLowerCase();  
var output = firstInitialLower + lastLower;
```

```
if (lastLower.indexOf(" ") > -1){ //space is found...  
    output = firstInitialLower +  
        lastLower.substring(lastLower.indexOf(" ")+1, lastLower.length);  
}  
output;
```



# Resources

[www.w3schools.com](http://www.w3schools.com)

- HTML: [http://www.w3schools.com/html/html\\_examples.asp](http://www.w3schools.com/html/html_examples.asp)
- JavaScript: [http://www.w3schools.com/js/js\\_examples.asp](http://www.w3schools.com/js/js_examples.asp)
- CSS (styles): [http://www.w3schools.com/css/css\\_examples.asp](http://www.w3schools.com/css/css_examples.asp)

## Informer 4 Help Center:

- Search for “Training and User Guides”
- and download [\*Informer JavaScript Guide\*](#)

# Learn to program in JavaScript

There are many resources on the internet to learn to program. This is a resource I have used and found helpful.

Programming Foundations with JavaScript, HTML and CSS

<https://www.coursera.org/learn/duke-programming-web>

There is a paid version to earn a certificate, but there is an option to take the course at no charge.



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Q & A



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Thank You