

What you need to know about APEX validations

Matt Mulvaney



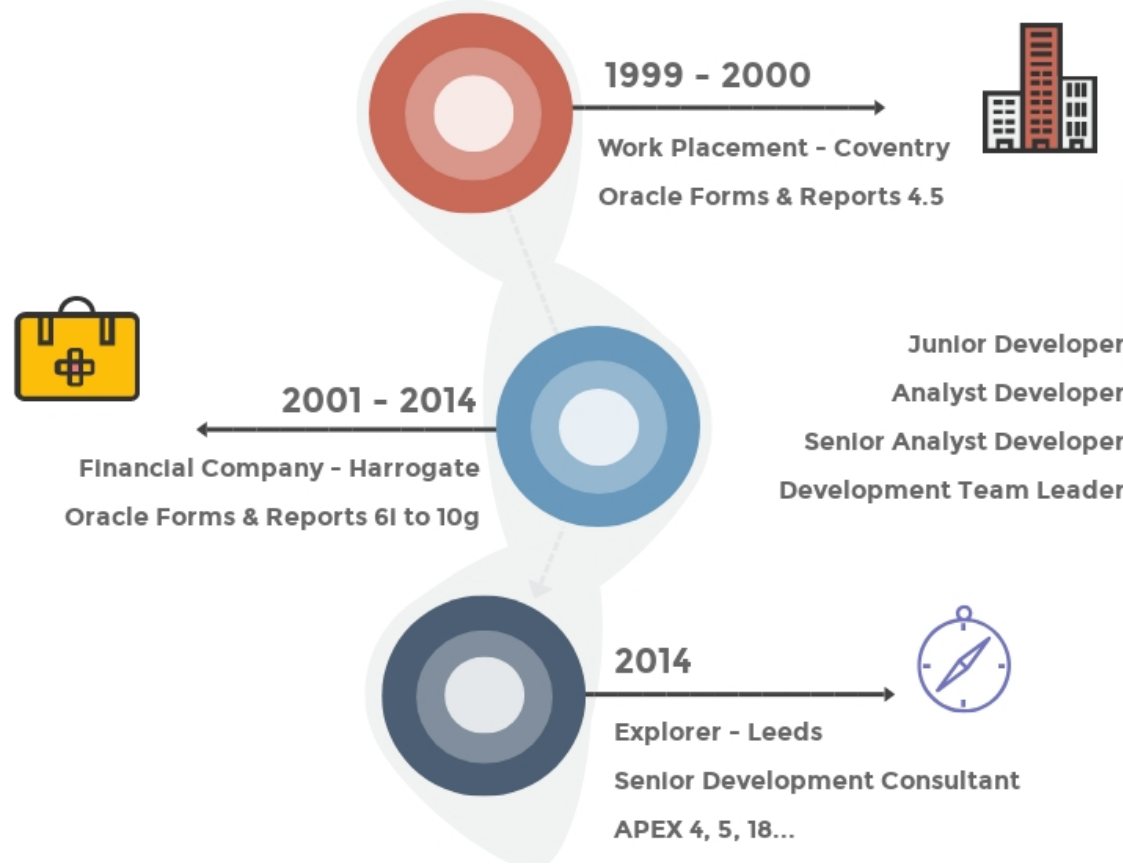
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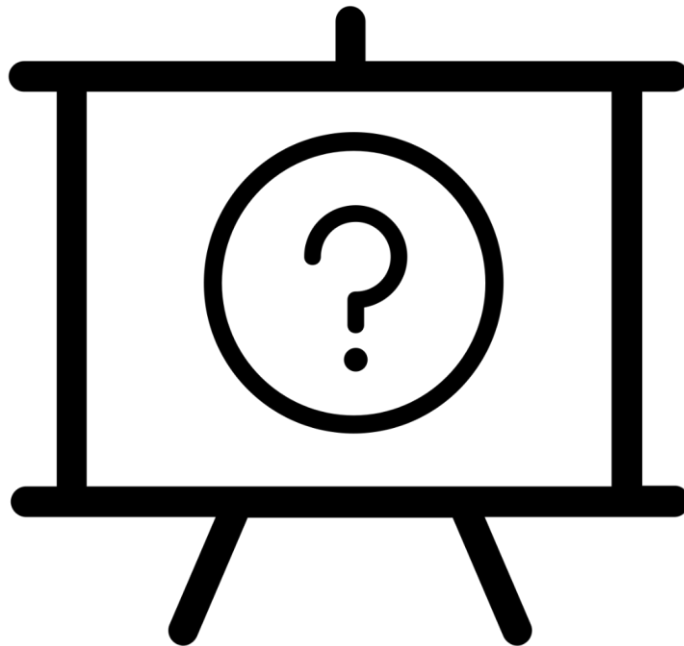


Agenda

- APEX validations basics & inconsistencies
- Low(ish) Code Client Validations
- Client Validations vs. Server Validations
- A shift in how pages are submitted
- Interactive Grid – Cell, Row & Model Validations



What's the
easiest
validation you
can think of?



REQUIRED



Basics & popup LOV



Summary

- “Required” is Server side as well as Client Side. It doubles up using *Basic Validation Checks*
- Popup LOV, Check Box, Radios or Shuttles* inconsistencies

* Shuttles better in 18.2


Back to Basics

Q. What is a validation?

A. A validation is an edit check.

Source: APEX Documentation

- Page Item Validations
- Page Validations
- Column & Row (Tabular)

 **Note:**

Text entered for validations may not exceed 3,950 characters.

Even more... Client & Server Validations

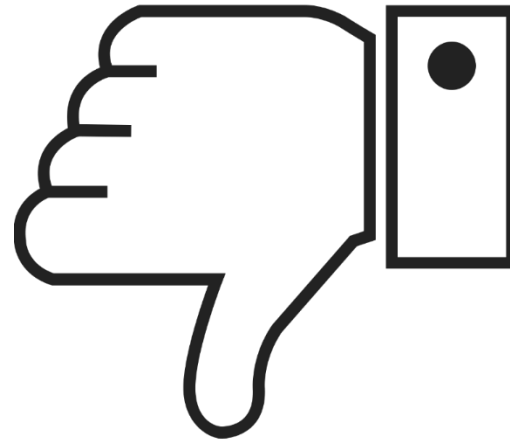


demo – Numbers

Summary

- ✓ “Required” is Server side as well as Client Side
- ✓ APEX layers up some validations also at Client Side
- ✓ Popup LOV, Check Box, Radios or Shuttles* inconsistencies
- Number validations have inconsistencies and don't support HTML5 validation attributes
- APEX Validations are always Server side
- Declarative APEX Client Side Validations are.....

Declarative APEX Client Side Validations are....
.... not very good at all... when Interactive
Grid requires it even more so



Q. Why am I hacking the page so much?
A. Web Clients cannot be trusted



... and it's a good security test

Low(ish)-Code Validations

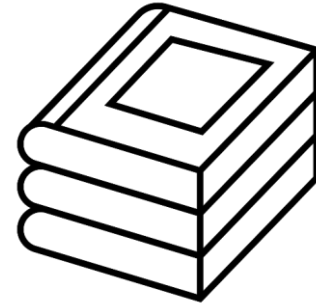


demo – more items & more items IG



Others...

- Required
- Subtypes
Note: APEX doesn't provide a server-side equivalent
- Pattern Matching (RegEx) e.g No Spaces
- Number Range (via RegEx)... but no Min/Max



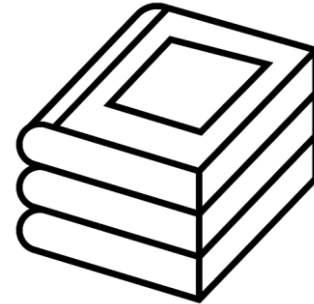
pattern="^[1-9][0-9]?|^100\$"
<http://gamon.webfactional.com/regexnumericrangergenerator/>

Triggered by...

- Page Submission via buttons
- `apex.page.submit({ validate: true });`
- `apex.page.validate();`
- `apex.page.validatePageItemsOnBlur();`

Special association
between

- Compatibility Mode
- Buttons



Validity obtained by...

```
apex.item( "P4_REQUIRED" ).getValidity()  
1. ValidityState {valueMissing: true, typeMismatch: false,  
patternMismatch: false, tooLong: false, tooShort: false, ...}  
  1. badInput: false  
  2. customError: true  
  3. patternMismatch: false  
  4. rangeOverflow: false  
  5. rangeUnderflow: false  
  6. stepMismatch: false  
  7. tooLong: false  
  8. tooShort: false  
  9. typeMismatch: false  
 10. valid: false  
 11. valueMissing: true  
 12. __proto__: ValidityState
```


Validity message obtained by...

```
> apex.item( "P4_REQUIRED" ).getValidationMessage()  
< "Please fill in this field."
```

Validity message set by...

```
apex.item( "P4_REQUIRED" ).node.setCustomValidity('No Spaces')
```

...unless the Item already has this attribute set

```
<input type="text" id="P4_DATA_VALID_MESSAGE" name="P4_DATA_VALID_MESSAGE" required class="text_field apex-item-text" data-valid-message="This is a required field" value size="30" maxlength>
```

Validation Comparison

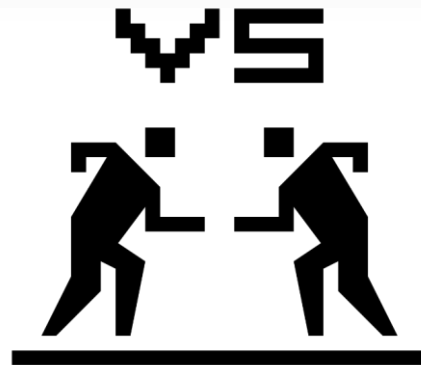


Client vs. Server

Server

- Server side is the last line of APEX defence to protect your data from processes.
- A Server side validation cannot be circumvented. Client side is quite easy.
- A Server side validation is slower

Examples:
PL/SQL Expression



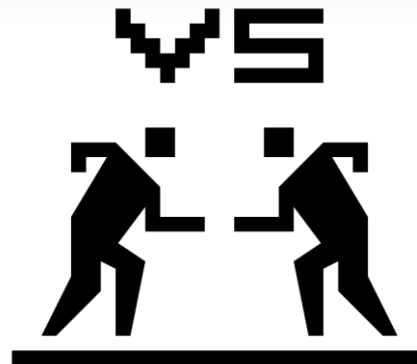
Client vs. Server

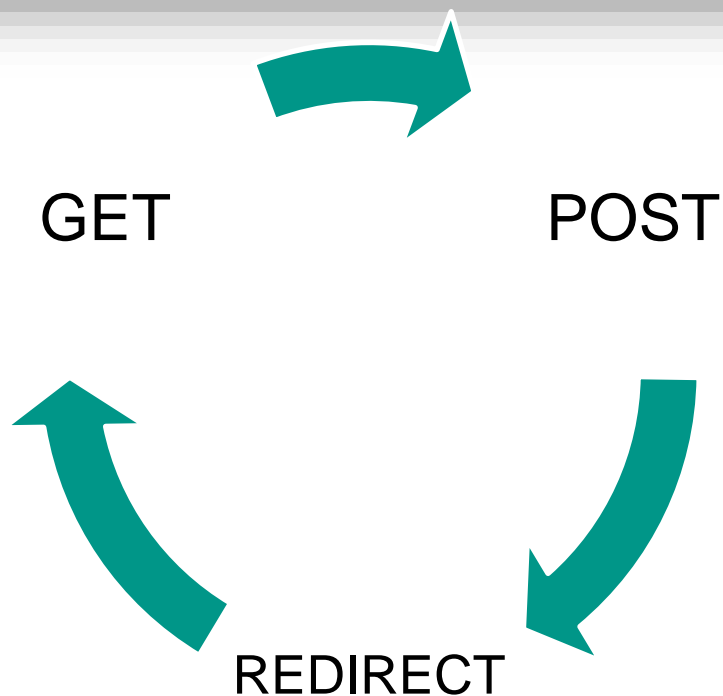
Client

- Faster Response times
- Reduced Network/Server Load
- Preservation of Client State

Examples:

Required (i.e Not Null)
Pattern Matching
Min/Max not available





Scroll Position, Focus, Selection State, File Upload, Password Fields, etc.

Enter the Interactive Grid

Departments

Save

Search: All Text Columns Go [Grid Icon] [Table Icon] Actions Edit Add Row Reset

<input type="checkbox"/>	<input type="checkbox"/>	Department Name	Location	Notes
<input checked="" type="checkbox"/>	<input type="checkbox"/>	ACCOUNTING	NEW YORK	-
<input type="checkbox"/>	<input type="checkbox"/>	RESEARCH	DALLAS	-
<input type="checkbox"/>	<input type="checkbox"/>	SALES	CHICAGO	-
<input type="checkbox"/>	<input type="checkbox"/>	OPERATIONS	BOSTON	-

1 rows selected Total 4

Employees

Search: All Text Columns Go [Grid Icon] [Table Icon] [List Icon] Actions Edit Add Row Reset

<input type="checkbox"/>	<input type="checkbox"/>	Name	Job	Manager	Hire Date	Salary	Comm	C
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MILLER	Clerk	CLARK	23-JAN-1982	1300	-	M
<input type="checkbox"/>	<input type="checkbox"/>	KING	President		17-NOV-1981	5000	-	M

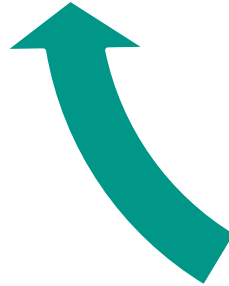


Reload on
Success

AJAX
Submit

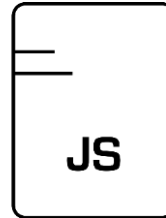
Display
Error

apex.message



Interactive Grid Validations

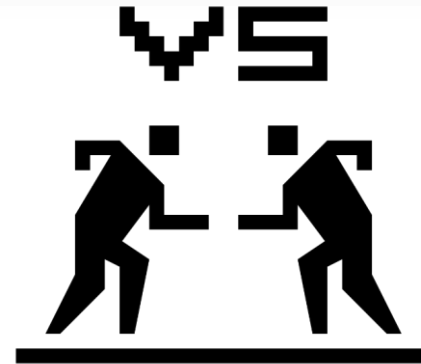
- It requires custom JS code generally
- Doesn't tie in directly with declarative server side validations
- Messages are not localized
- Issues with IG master detail where it is hard to find the errors (client or server side validation).



Still Worth it.....?

Client

- Faster Response times
- Reduced Network/Server Load
- Preservation of Client State



...definitely & especially with the grid

Application to the Grid & The Grid Localisation Issue

... and workaround



Localisation Summary

- apex.message.addVisibilityCheck **can** help for localisation issues when
 - ✓ Using apex.message.showErrors
 - ✓ Server side validations
- apex.message.addVisibilityCheck **cant** help for HTML5 client side validation
- Not a lot can help with Master Detail Regions

The Popup LOV issue again

... and date validations
... and single row view



Row Validations

... warnings and workarounds



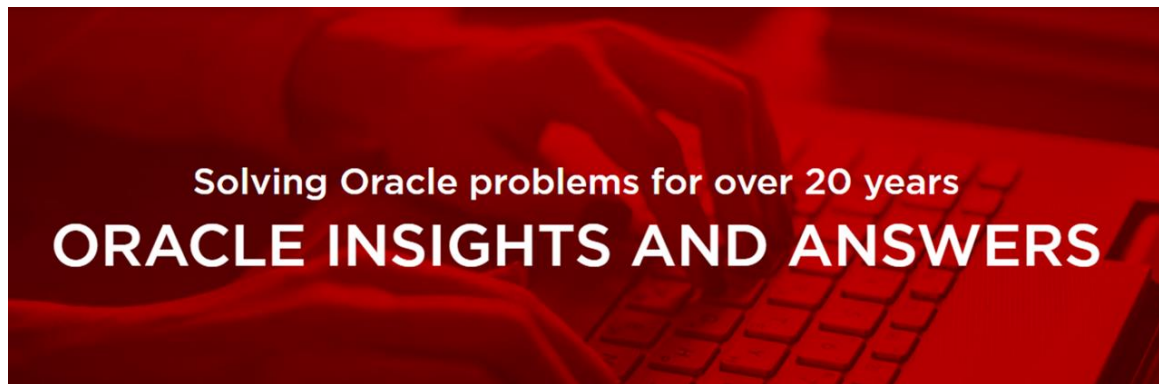
Model Validations

... and workarounds



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