Dynamic Actions for Superheroes

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APEX 19.2 EA

Joel Kallman
SENIOR DIRECTOR, SOFTWARE DEVELOPMENT

New features in APEX 19.2
Major
Faceted Search
Enhanced Popup LOV
New Team Development
Medium
Improved Shared LOVs
UT dark style
Markdown item
Star rating item
Display switch as on/off
REST enabled IG
Data dictionary cache
Improved login page
Upload app logo
Multi edit template options
Minor
Data load into existing table
Code highlighting in SQL workshop
Extra features SQL workshop
Improved spotlight search
Set debug level from dev toolbar
Updated JS libs
Deprecated packaged apps
12

Oracle Cloud Infrastructure

New Free Tier

oracle.com/gbtour

Dimitri Gielis

Free Cloud - Create a 2nd Compute Instance and a Load Balancer - Part 12

Cloud, Free Cloud, Hosting, Installation

Link

05-Oct-2019 02:48:06 by: Maxime Tremblay

Always Free

Services you can use for unlimited time

+

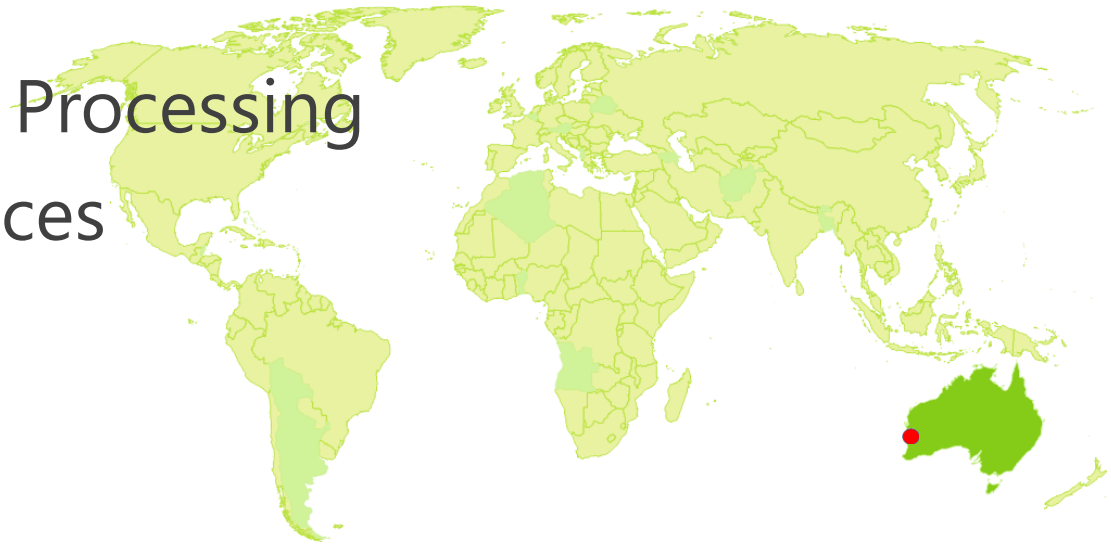
30-Day Free Trial

Free credits you can use for more services

Agenda

This is what we will do today

- Simple 'Hello World'
- DA Event Scope
- Custom Selectors
- Debugging
- Passing Data for Processing
- Good/Bad Practices
- Q&A



My journey

AUSOUG

- AUSOUG APEX webinars
- NZ APEX meetup organizer
- APEX blogger
- Conference speaker
- Developer since 2006

@LinoSchilde

www.linkedin.com/in/lschilde

Dynamic Actions FAQ

Gathered info from the field:

- Colleagues
- Mentored/trained people
- New developers
- From conferences

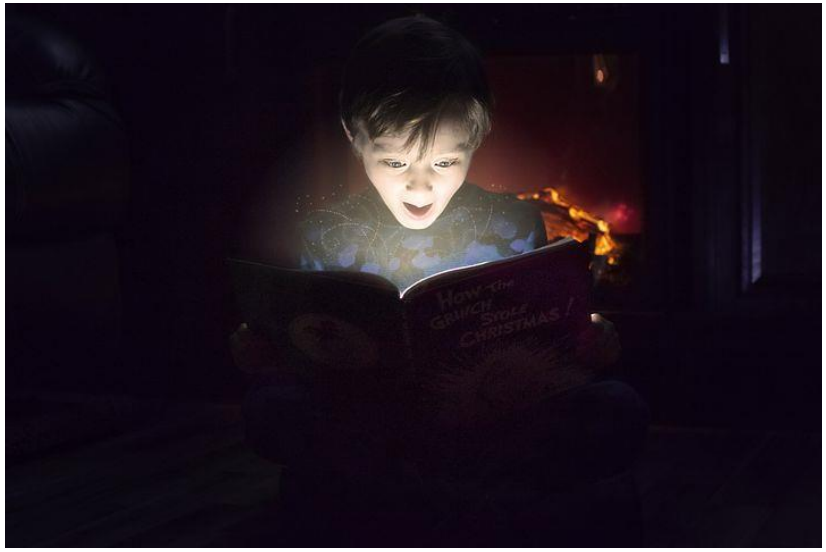
Q#1

What are DA? What do they allow me to do?

Rookie

Definition

DA is a reaction to a page event!



DA at glance

Client side code

Change the look or content on a page without the need for page submit, providing a seamless user experience

Declarative low code behaviour

Without (or little) knowledge of JavaScript all you need to do is configure their properties

Event module manager

Event listener is part of Dynamic Actions. It attaches listener to an event

Expandable

Component have events that can be exposed with plugin architecture making it very flexible

Loved by end users and developers

Easy to learn and "must have" feature of any modern application today. They act as "bridge" in user interaction

FOEX survey 2018

A top 3 of the most appreciated APEX features / components by the community also includes the Interactive Grid and, on equal percentages, for the 3rd place: Dynamic Actions and APEX's low-code development capabilities.

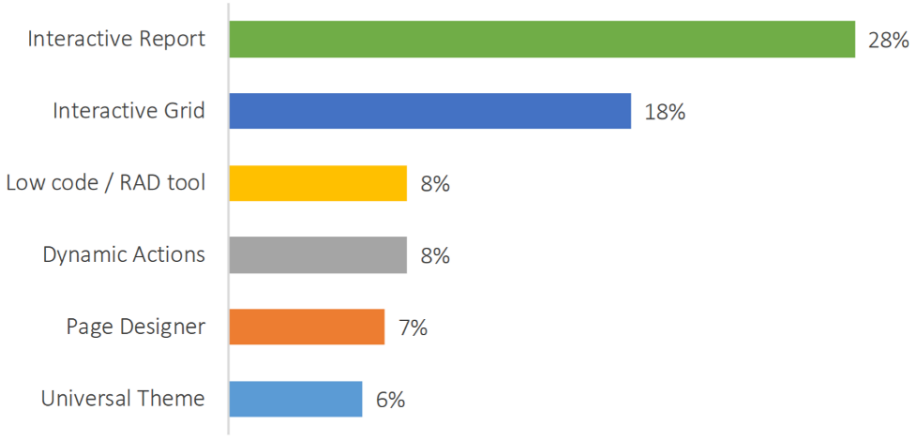


Figure 10: Favorite component / feature of APEX

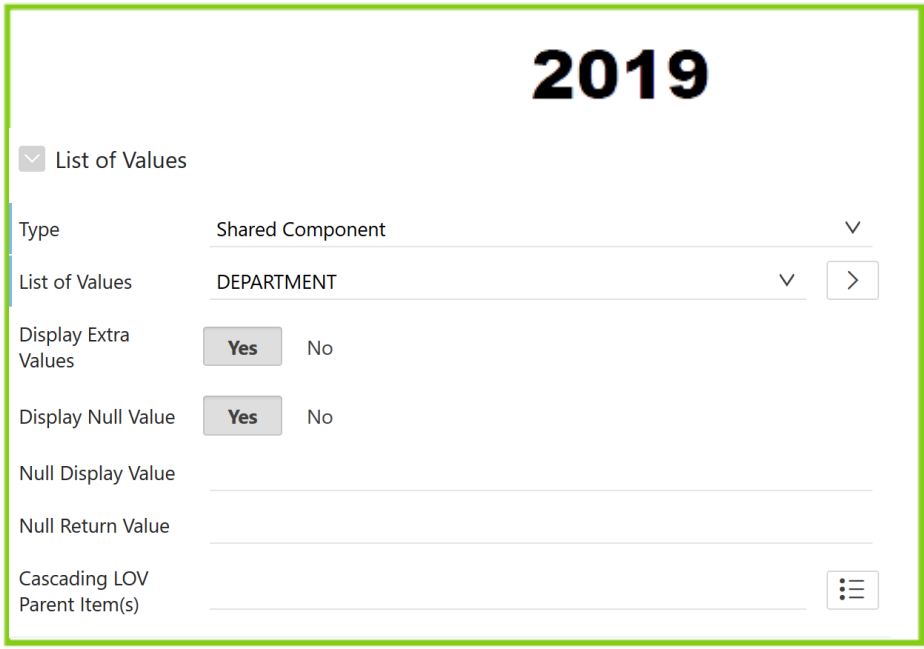
https://www.foex.at/c/The_State_of_Oracle_APEX_Development_Report_2018.pdf

3.2 vs today

2008

```
<script language="JavaScript1.1" type="text/javascript">
function getEmployeeList (narrowText, empSelect)
{
  var empSelectObj = document.getElementById(empSelect);
  var ajaxRequest = new htmldb_Get(null,&APP_ID.,'APPLICATION_PROCESS=getEmployees',0);
  ajaxRequest.add('P1_EMPLOYEE_NARROW',narrowText.value);
  ajaxResult = ajaxRequest.get();
  if(ajaxResult)
    {
      empSelectObj.options.length = 0;
      var empArray = ajaxResult.split("~empsep~");
      for(var i=0; i < empArray.length; i++) {
        var colArray = empArray[i].split("~colsep~");
        empSelectObj.options[i] = new Option(colArray[1], colArray[0]);
      }
    }
    else
    {
      empSelectObj.options.length = 0;
    }
  ajaxRequest = null;
}
</script>
```

2019



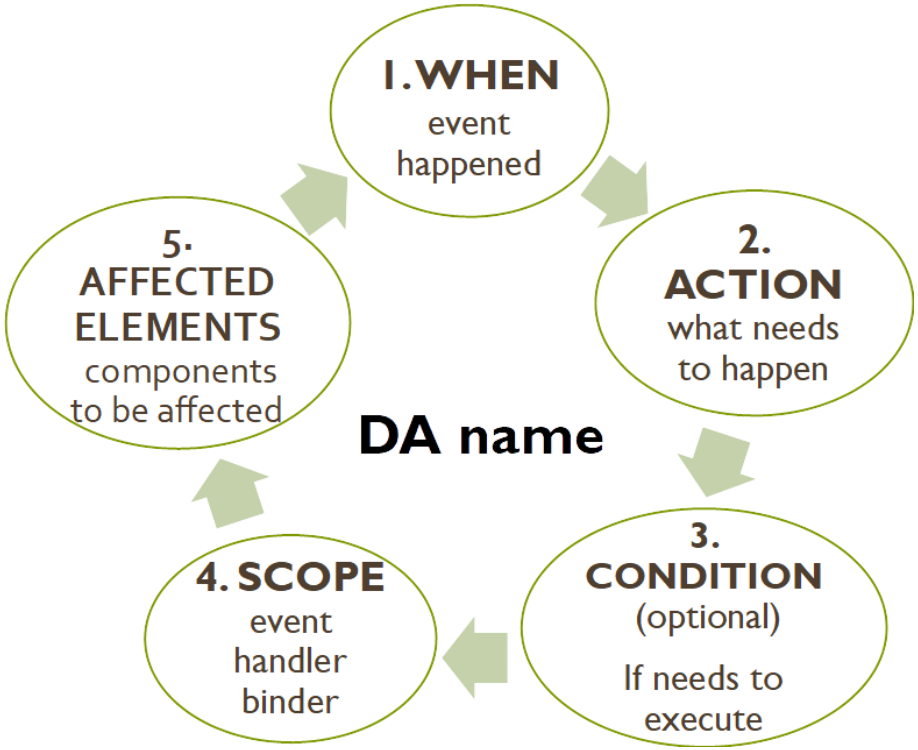
Let’s create our first DA

Q#2

When should I use a DA? How do I create one?

Rookie

DA Skeleton



EVENTS

24 Browser events

18 Component events

4 Framework events

* Custom events

ACTIONS

Component actions

Navigation actions

Style actions

Notifications

Execute actions

Q#3

What are most common DA?

Rookie

Examples

Events triggered by user interaction

EVENTS

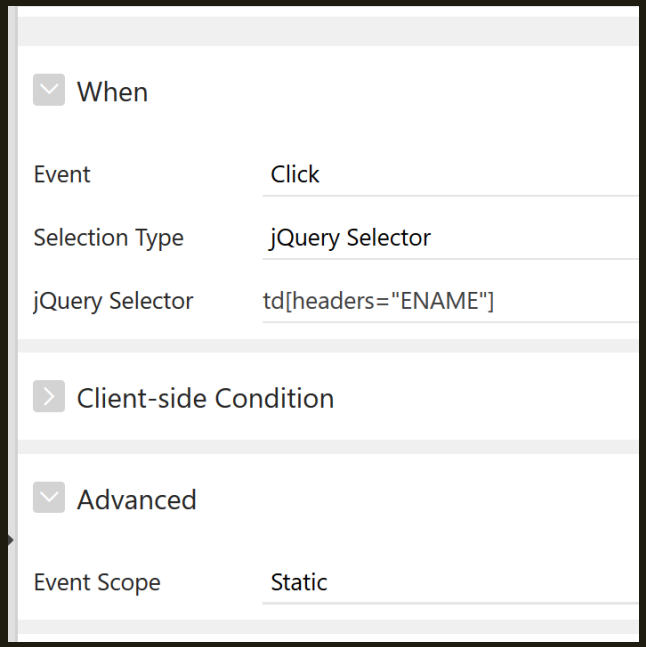
- On change
- On button click
- On page load
- On data save

ACTIONS

- Show/Hide
- Enable/Disable
- Set value
- Refresh report

Q#4

What is an Event Scope?



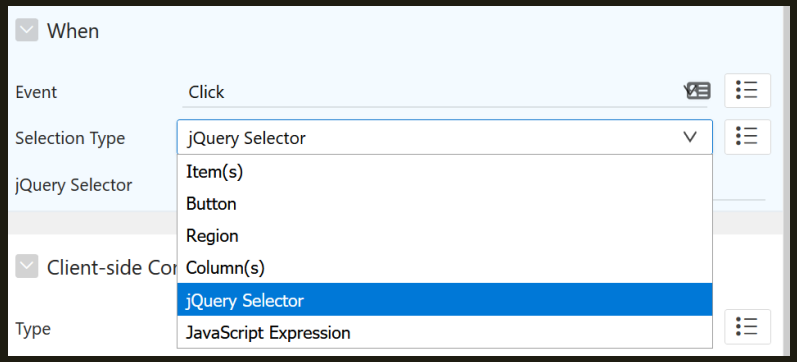
Q#5

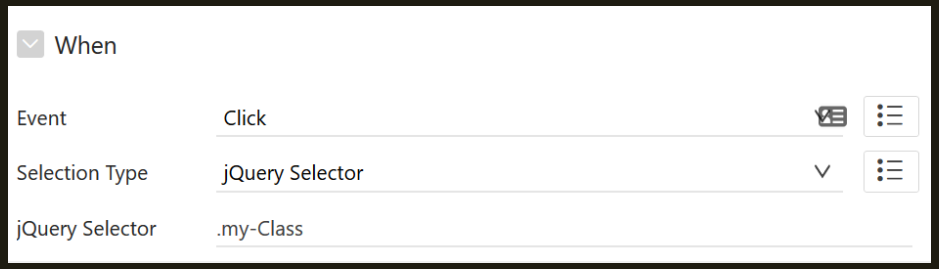
How to respond to any element on the page?

Seasoned

Demo time

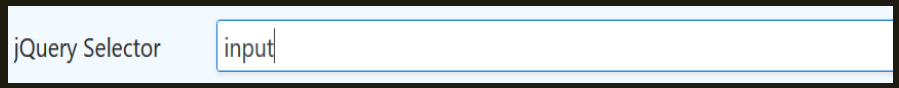
Learn your selectors…





Select a page element

With an DOM id → #my_id
With a class → .my_class
Or any HTML tag



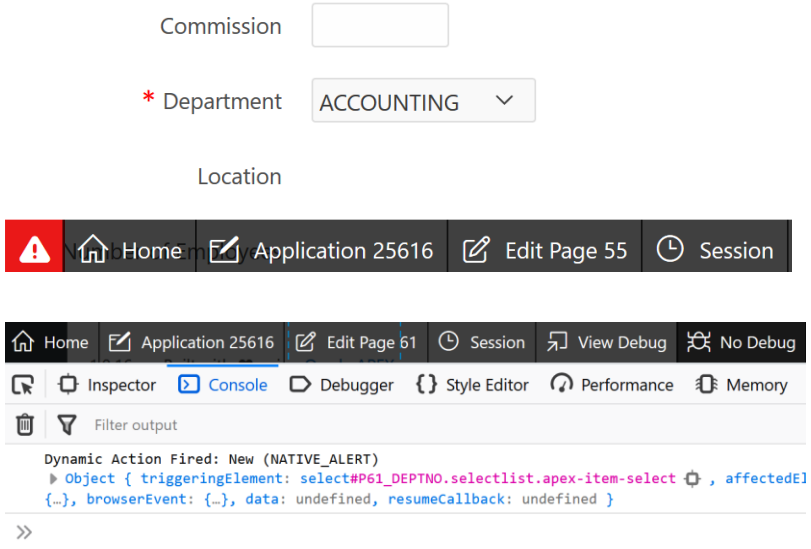
$("div.alert").parent()

Q#6

Why did my DA stop working?

Many reasons…. but no need to panic

101 Debugging



Step #01

To know what is happening click DEBUG on developer console

Step #02

Open Browser Console log (Chrome more tools -> Dev tools F12)

Step #03

You can see what happened and what triggered the event

Step #04

Check DA metadata and all details.

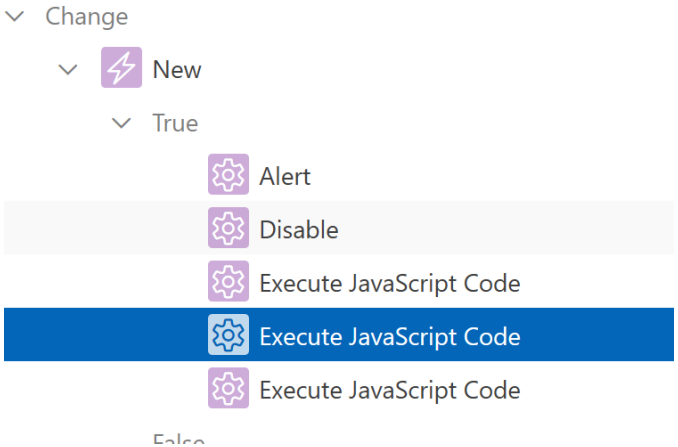
Open Network tab for traffic

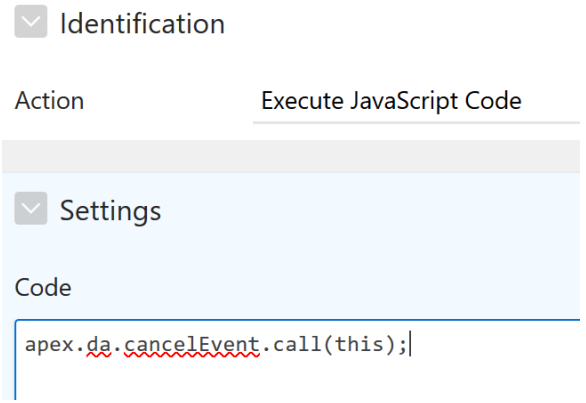
Q#7

How do I stop subsequent DA from triggering?

Why?

Since individual actions do not have conditions associated





Undocumented JS function

- apex.da.cancelEvent
- It will run all code in same action

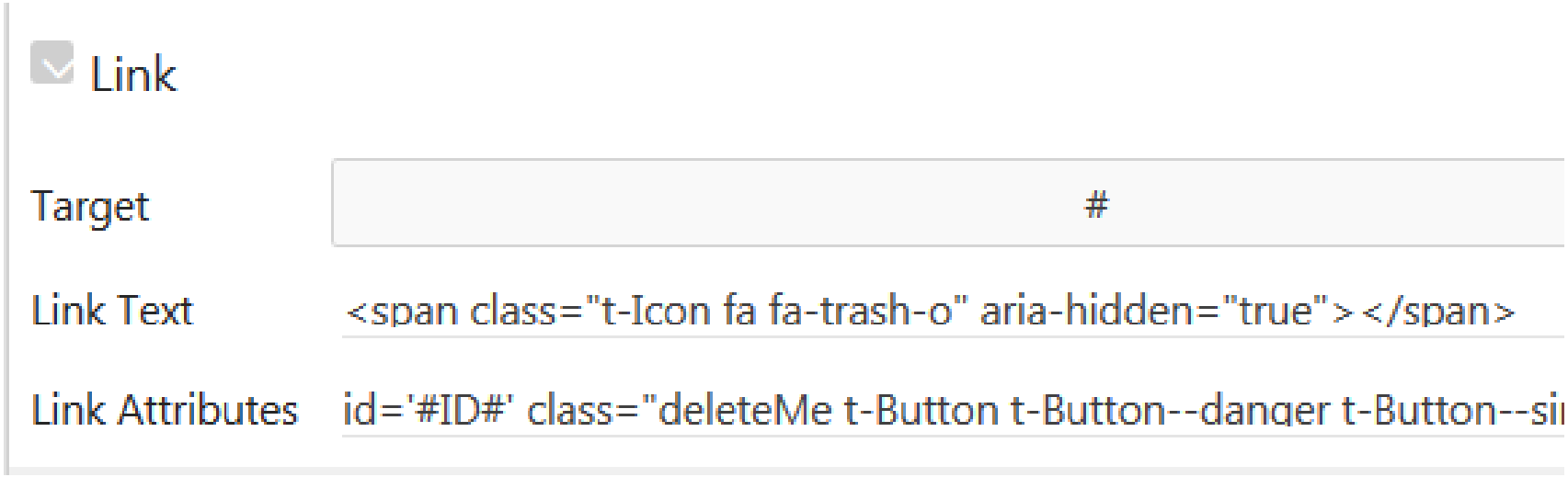
Q#8

How do I pass data to DA for processing?

Demo time

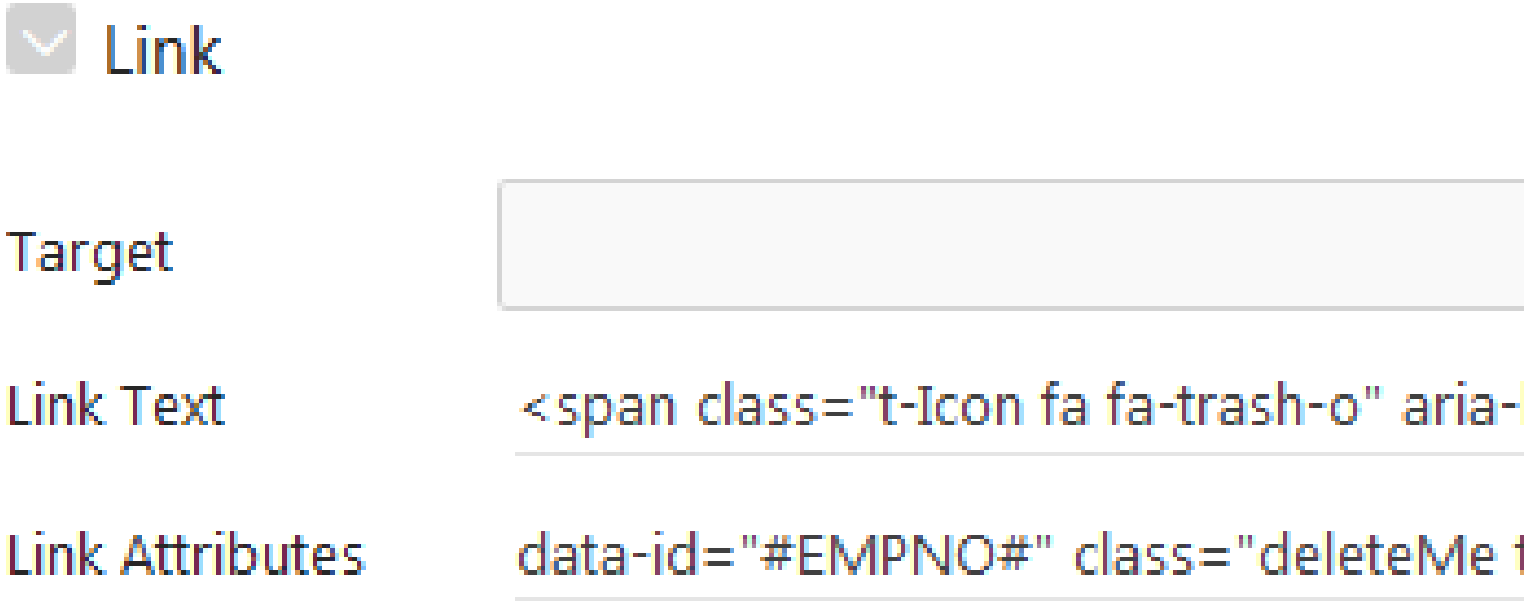
Passing data

1. Using element attributes and classes



Passing data

2. Using data attributes



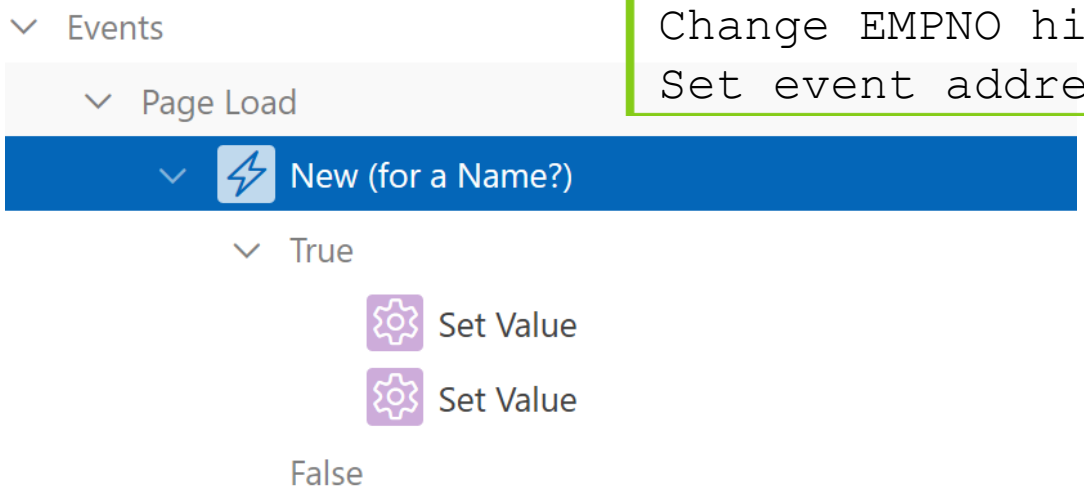
Passing data

3. Using APEX.event api

```
apex.event.trigger
(document,'deleteEmp',[{action:'rejecting',
id:'#ID#'}]);
```

Bad practices?

Example #1

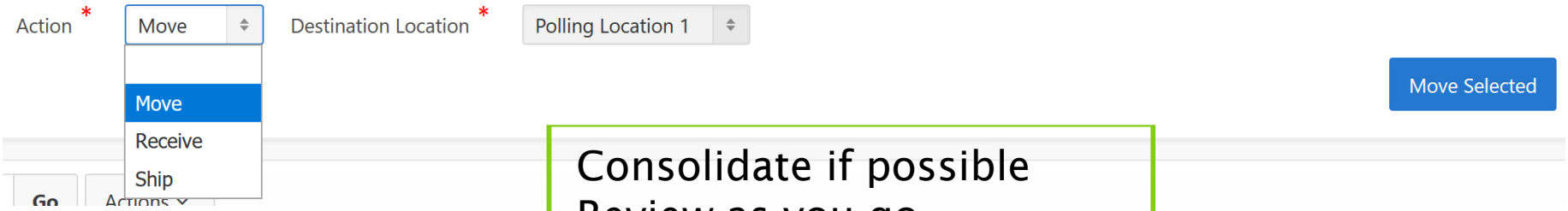


Good example

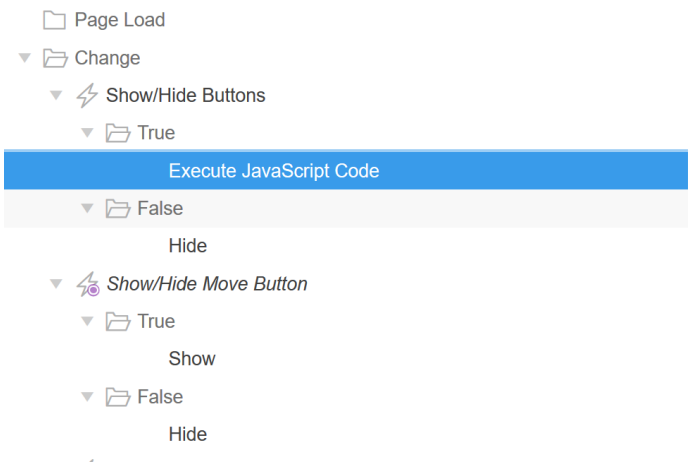
```
Change EMPNO hide summary report
Set event address from webservice
```

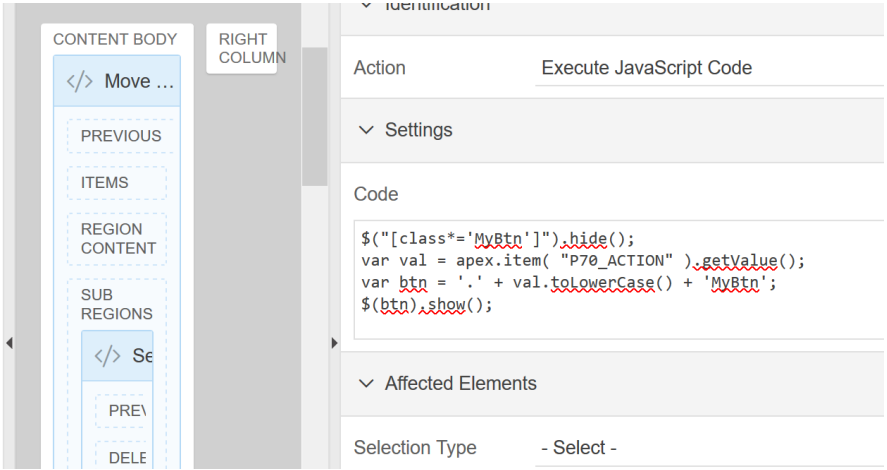
- Naming
- Multiple set value actions over using one single action

Example #2

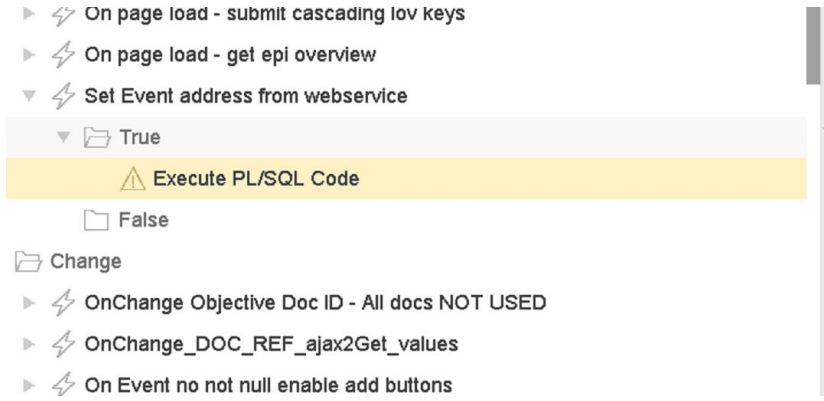


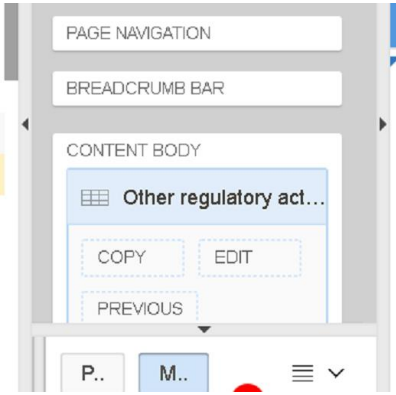
Consolidate if possible
Review as you go

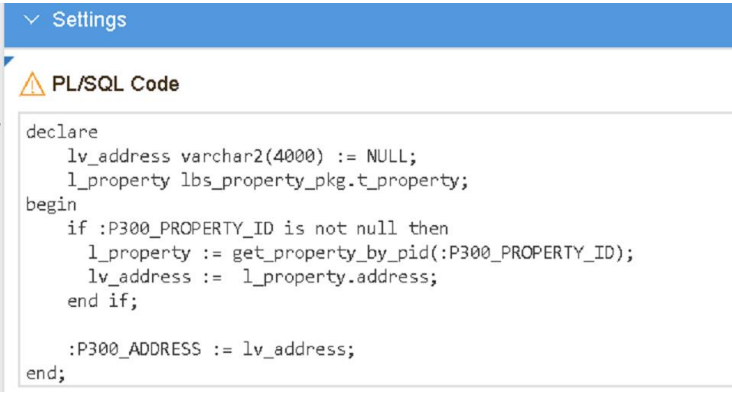




Example #3








```
l_response :=
    APEX_WEB_SERVICE.MAKE_REST_REQUEST (p_url                  => l_service_url,
                                        p_http_method          => 'GET',
                                        p_username             => NULL,
                                        p_password             => NULL,
                                        p_proxy_override       => NULL,
                                        p_transfer_timeout     => 180,
                                        p_body                 => EMPTY_CLOB (),
                                        p_body_blob            => EMPTY_BLOB (),
                                        p_parm_name            => l_vc_params,
                                        p_parm_value           => l_vc_values,
                                        p_wallet_path          => l_wallet,
                                        p_wallet_pwd           => NULL);

RETURN l_response;
```

- Slow loading code is better on page load JS than on PL/SQL process
- Better user experience where we do not have to wait for page to load

Example #4

I have got 2 applications one is working with 479 form items.

But the same 2nd application with extra 13 forms items is not working or populating data on the form.

- No sub regions
- Values loaded with page automatic DML process
- Same the save process
- Hundreds of DA's per single elements

For the records it does work using manual page PL/SQL code using a package!!!!!!

Example #5

from FABE factory – too much custom JS is bad or is it?

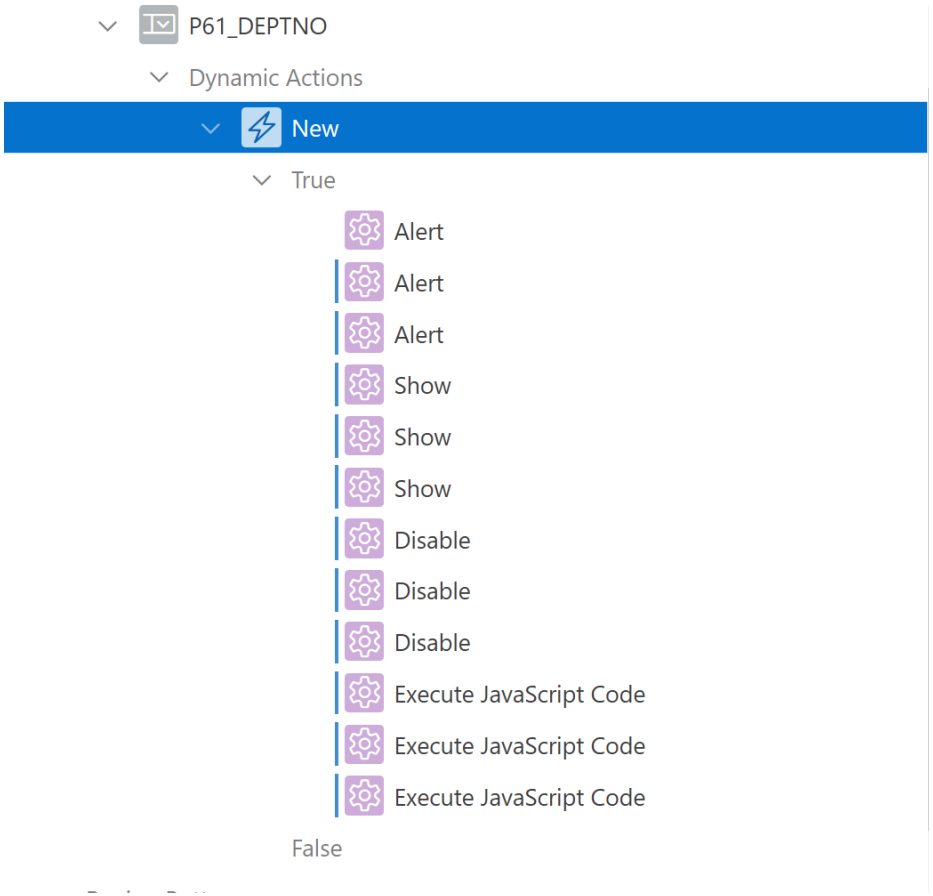
```
/**
 * @function show
 **/
show: function () {
    if (fabe.navigation.back.stack.length > 0 ||
        !apex.item("P0_BACK_URL").isEmpty()) {
        $(".fabe-back-all").show();
        $(".brand-logo img").hide();
    }

    if (!apex.item("P0_BACK_URL_MOBILE").isEmpty()) {
        $(".fabe-back-mobile").show();
        $(".brand-logo img").addClass("hide-on-med-and-down");
    }
},

/**
 * @function hide
 * @example
 * fabe.navigation.back.hide();
 **/
hide: function () {
    console.log(fabe.navigation.back.stack.length === 0,
        apex.item("P0_BACK_URL").isEmpty());

    if (fabe.navigation.back.stack.length === 0 &&
        apex.item("P0_BACK_URL").isEmpty()) {
        $(".fabe-back-all").hide();
        $(".brand-logo img").show();
    }

    if (fabe.navigation.back.stack.length === 0 &&
        apex.item("P0_BACK_URL_MOBILE").isEmpty()) {
        $(".fabe-back-mobile").hide();
        $(".brand-logo img").removeClass("hide-on-med-and-down");
    }
},
```



Summary

- Find balance
  - You still have to maintain and debug when issues arise
- Consolidate
  - if it can trigger on same event or global page
- Minimize custom code
  - Don’t be afraid to use it
  - Structure it well and have standards
- Think security
  - Apply server side security too
  - Don’t trust user inputs

Questions

Thank you for attending

Presentation challenge

https://emedcert.com/blog/thoughts-on-ALS-ice-bucket-challenge

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ORACLE ACE PROGRAM

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bit.ly/OracleACEProgram

Nominate yourself or someone you know: **acenomination.oracle.com**

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Free credits you can use for more services

Resources

- Documentation apex.oracle.com/JSAPI
- Sample Dynamic Actions application
- APEX office hours video - http://tiny.cc/nx0scz
- Jackie Mcilroy - http://tiny.cc/uz0scz
- Juergen Schuster - http://dynamic-actions.com
- DA by Explorer - http://tiny.cc/rf1scz
- Vincent Morneau - vmorneau.me/avoid-javascript-mess/
- 5.1 tutorial - http://tiny.cc/8m1scz

DEMO APP (download the application)

- https://apex.oracle.com/pls/apex/f?p=84111:13