ā'pěks
(#orclapex)

Dynamic Actions for Superheroes

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APEX 19.2 EA

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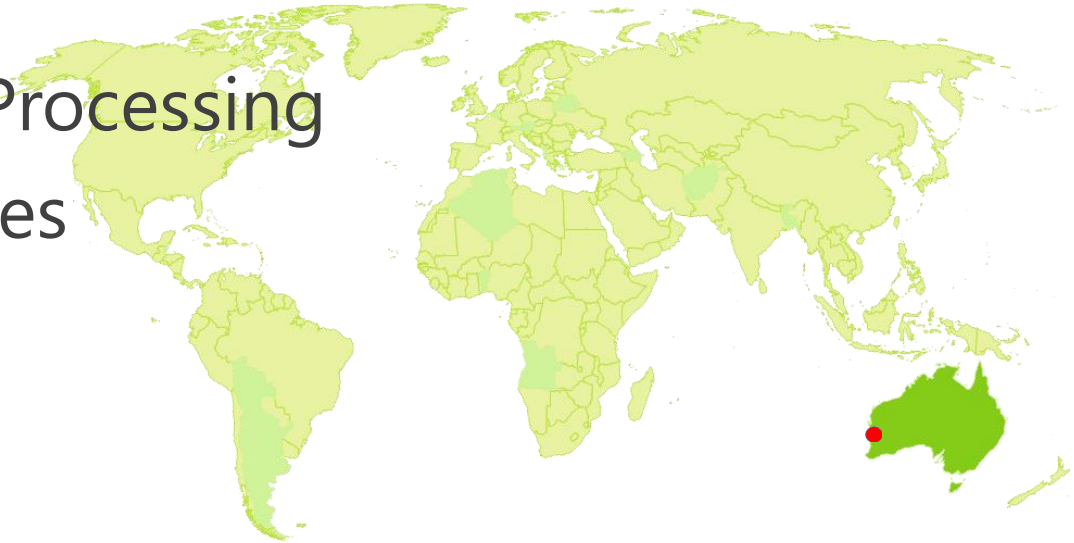
Agenda

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



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My Journey

- NZ APEX meetup organiser
- APEX Blogger
- AUSOUG APEX webinar series
- Conference speaker (KScope, ALPE Adria, AUSOUG Connect)

24. hroug
godišnja konferencija
15.-18.10.2019. - Rovinj

Make IT 2019
Konferenca MakeIT
14. - 15. OKTOBER 2019
Kongresni center Portus, Portorož
#makeitconf19

@LinoSchilde

ORACLE ACE

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Dynamic Actions FAQ

Gathered info from the field:

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

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Q#1

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

Rookie

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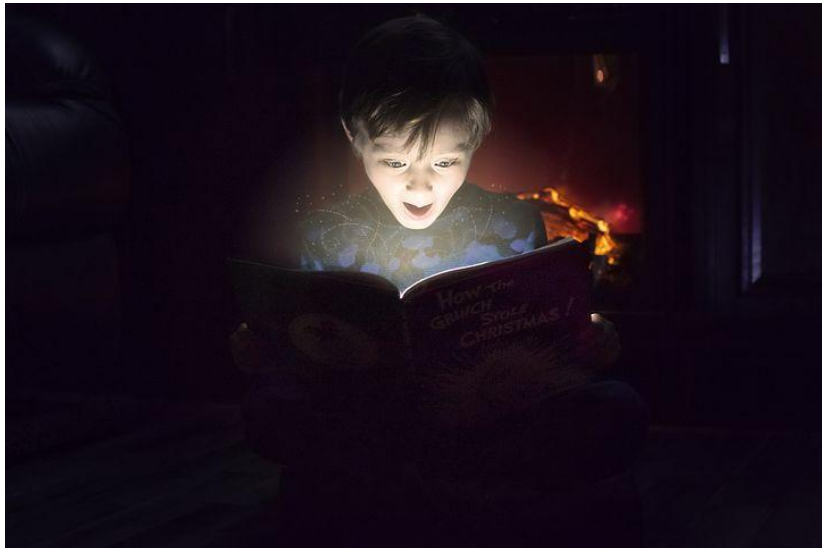
Definition

DA is a reaction to a page event!



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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

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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.

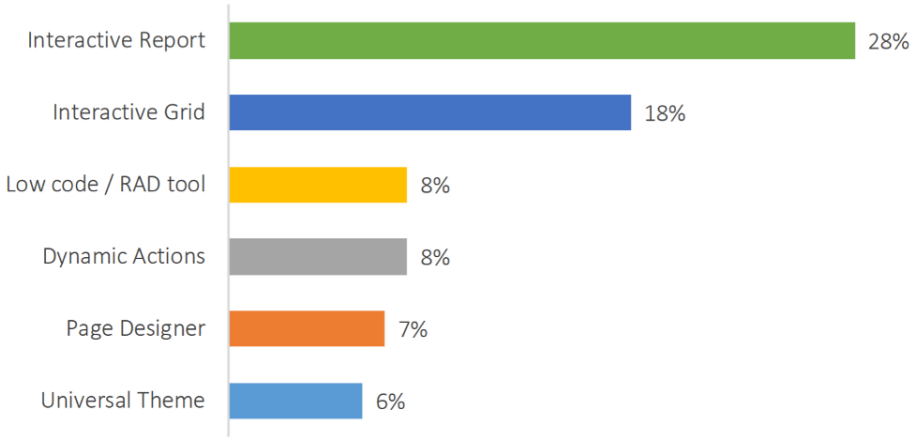
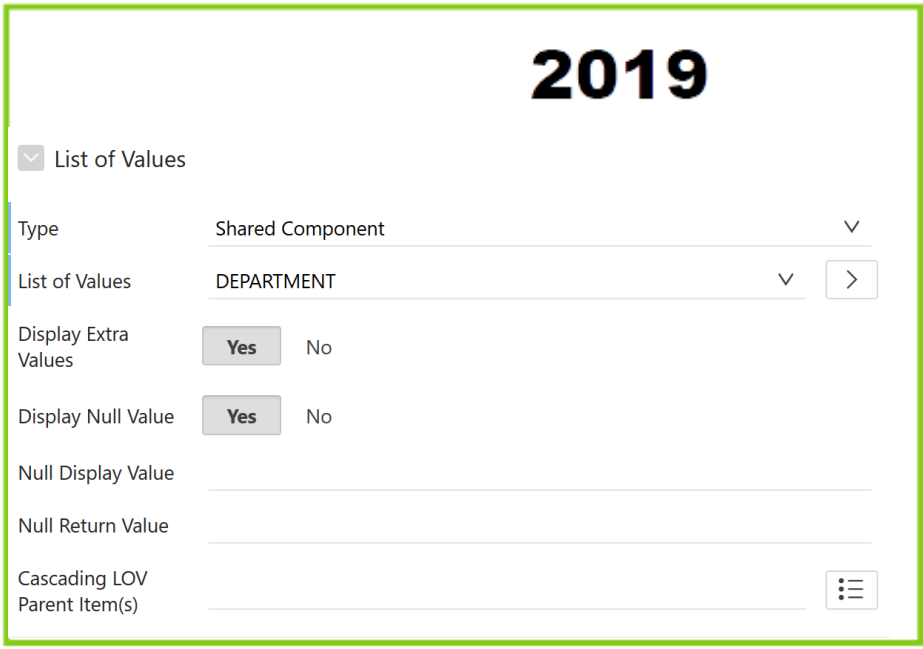


Figure 10: Favorite component / feature of APEX

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

3.2 vs today

2019



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>
```

Let’s create our first DA

Q#2

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

Rookie

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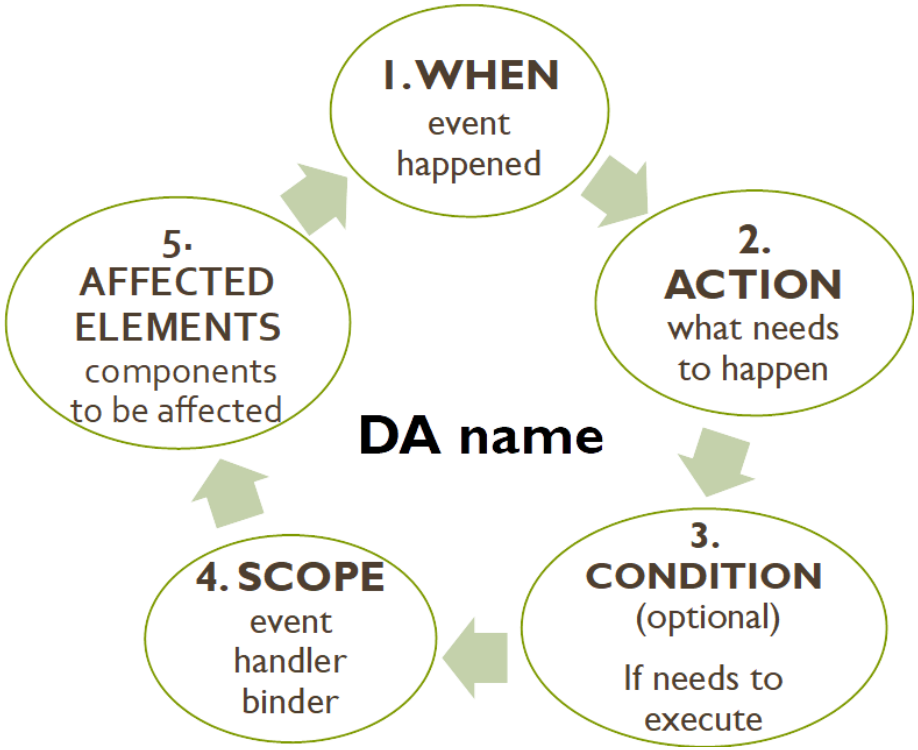
DA Skeleton



EVENTS

24 Browser events

18 Component events

4 Framework events

* Custom events

ACTIONS

Component actions

Navigation actions

Style actions

Notifications

Execute actions

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Q#3

What are most common DA?

Rookie

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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

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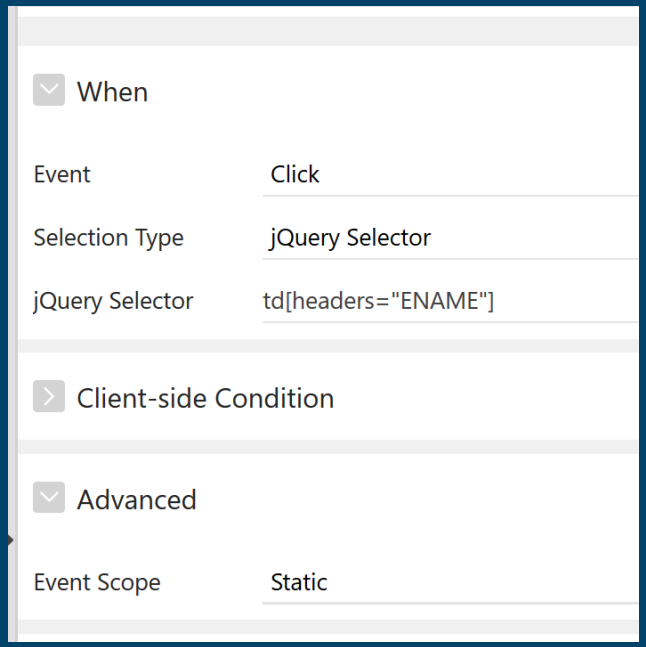
Q#4

What is an Event Scope?



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Q#5

How to respond to any element on the page?

Seasoned

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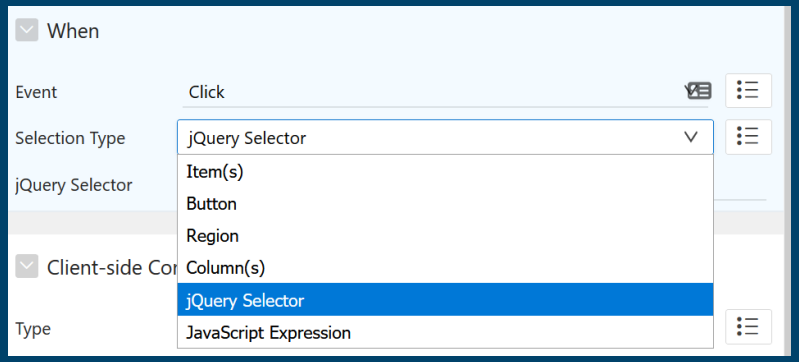
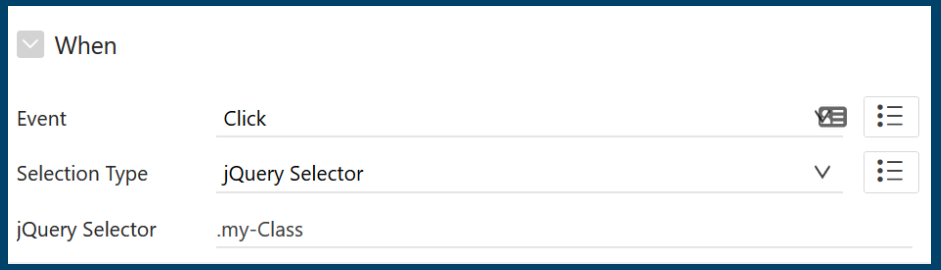
Demo time

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()

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Q#6

Why did my DA stop working?

Senior

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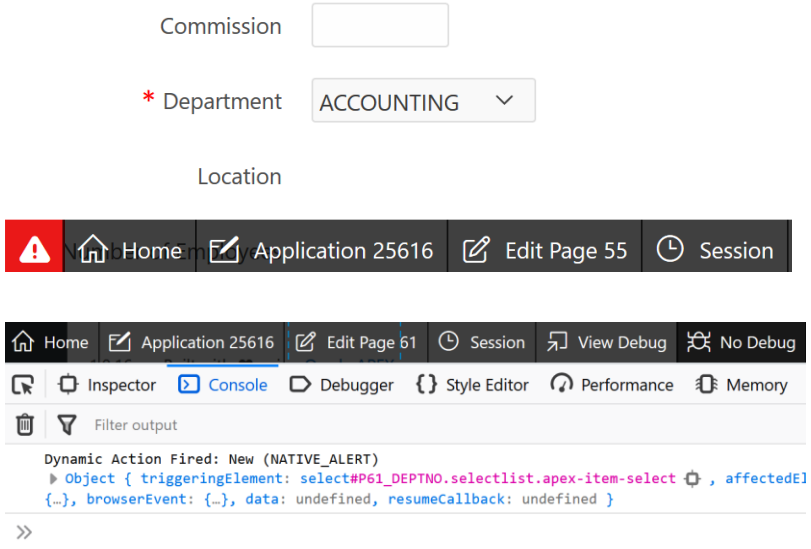
Many reasons…. but no need to panic

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

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Q#7

How do I stop subsequent DA from triggering?

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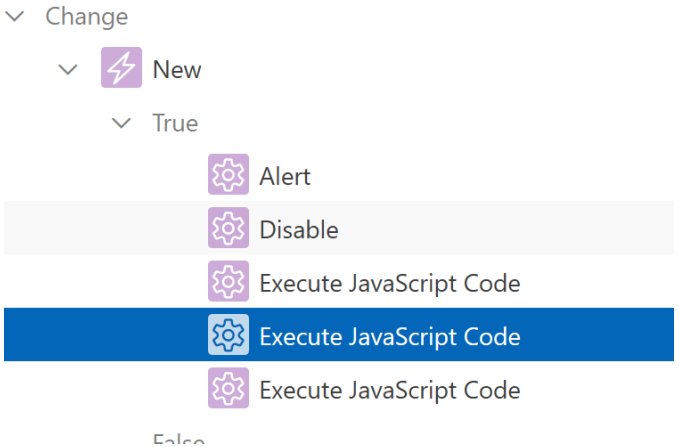
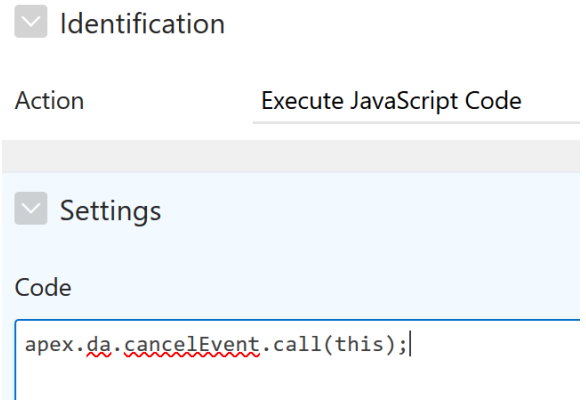
Why?

Since individual actions do not have conditions associated





Undocumented JS function

- apex.da.cancelEvent
- It will run all code in same action
- Or any HTML tag

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Q#8

How do I pass data to DA for processing?

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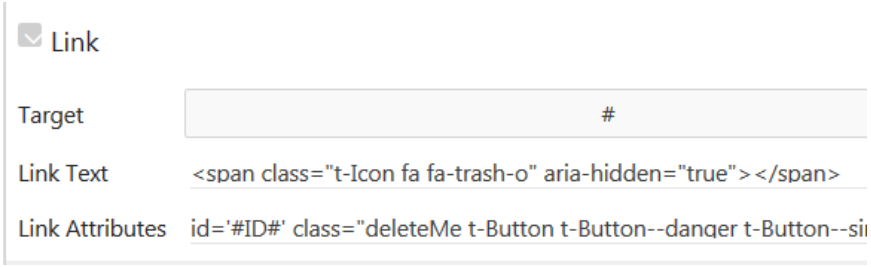
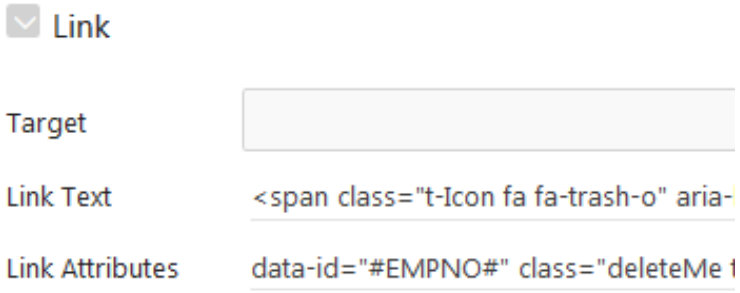
Demo time

Passing data

1. Using element attributes and classes



2. Using data attributes



3. Using APEX.event api

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

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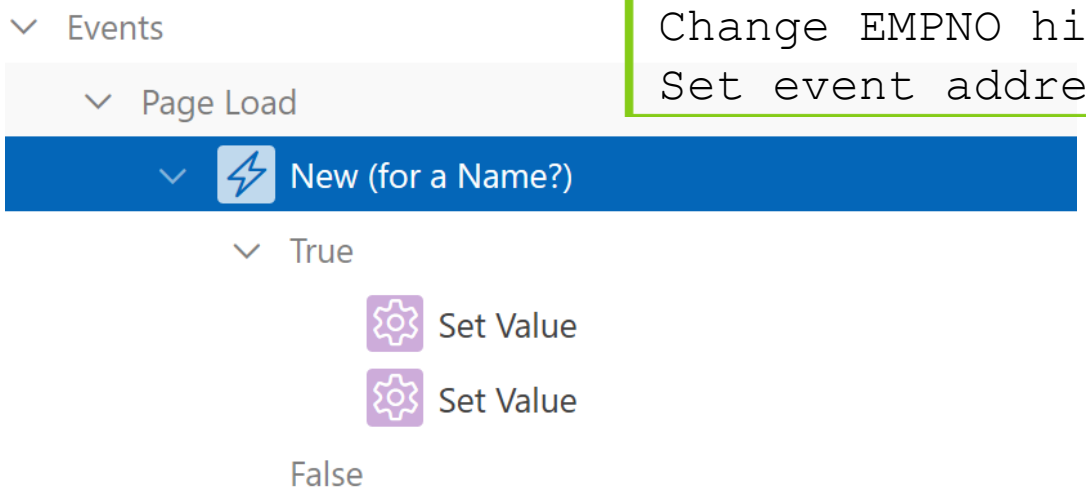
Bad practices?

Example #1



Good example

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

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

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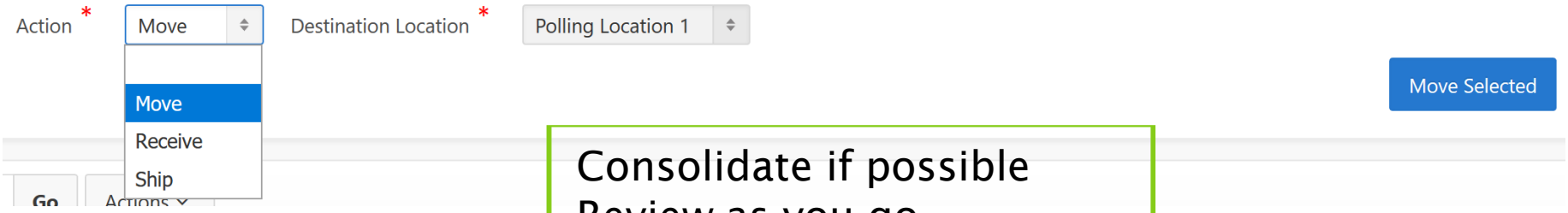
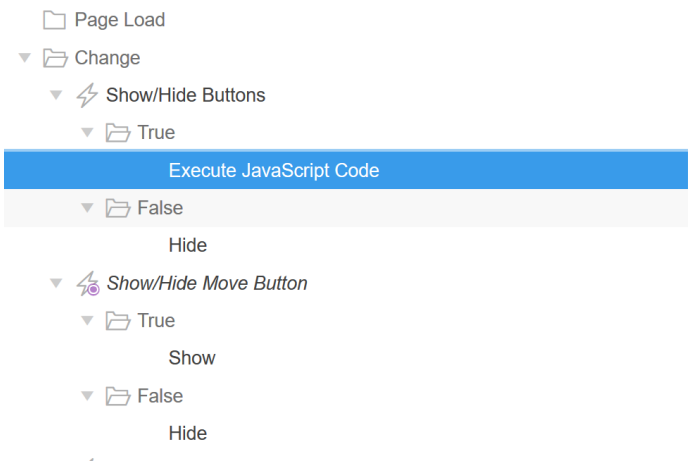
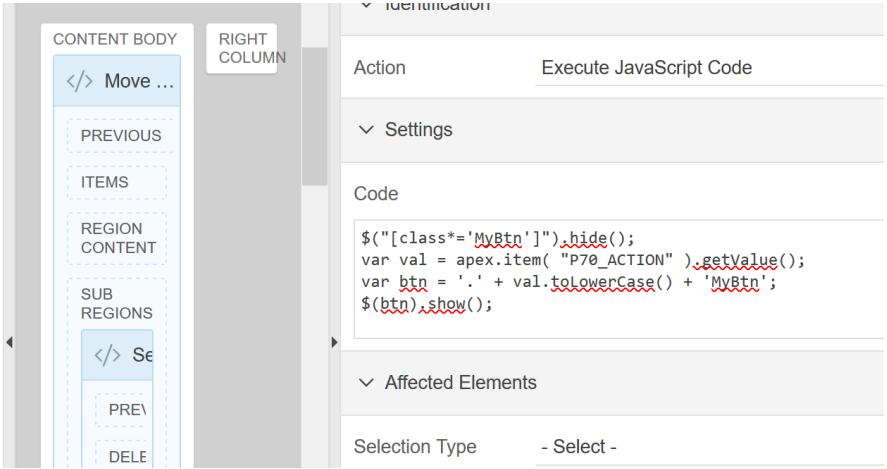
Example #2



Consolidate if possible
Review as you go





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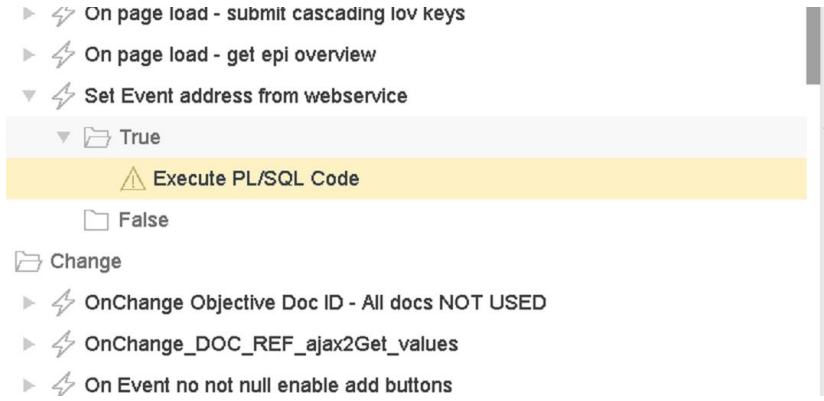
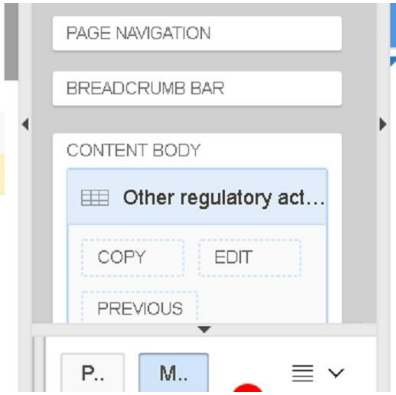
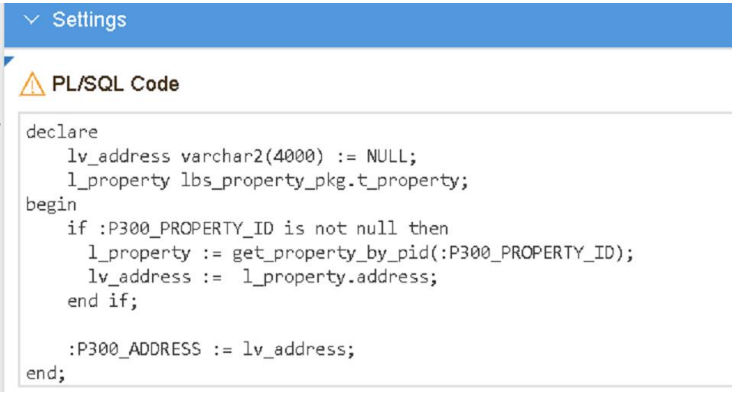
Example #3








```
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

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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!!!!!!

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Example #5

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

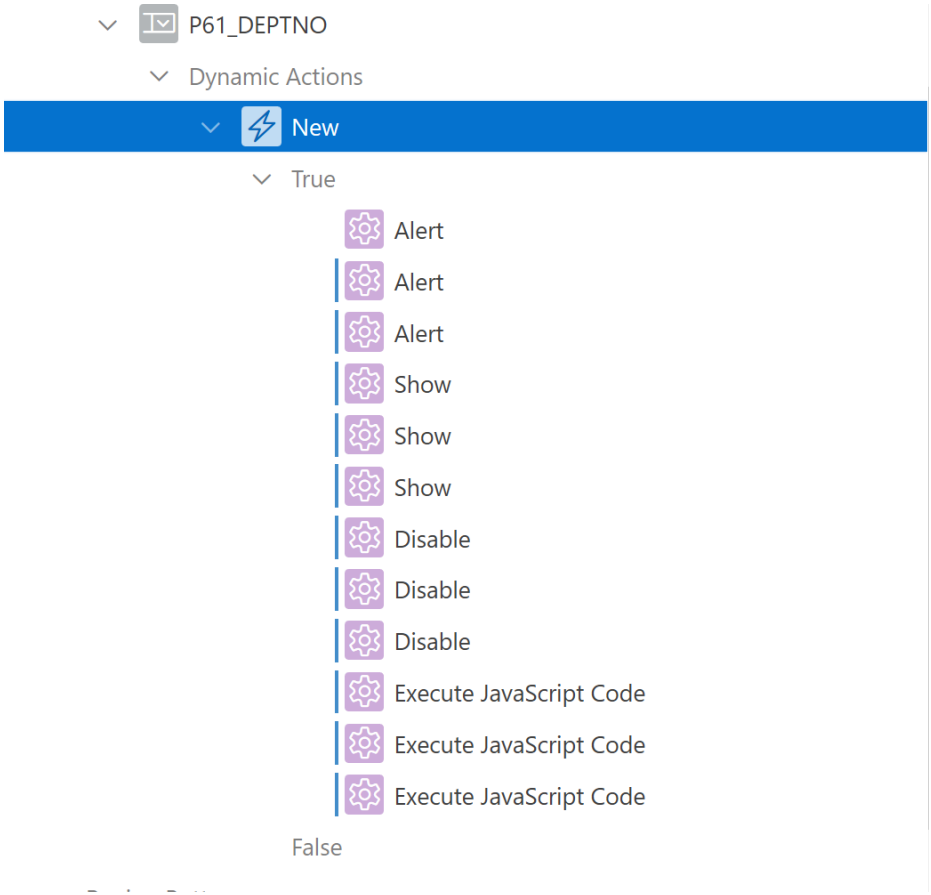
```
/**
 * @function show
 **/
show: function () {
    if (fabe.navigation.back.stack.length > 0 ||
        !apex.item("P0_BACK_URL").isEmpty()) {
        $(".fabe-back-all").show();
        $(".brand-logo img").hide();
    }

    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

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Questions

Thank you for attending

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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

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