FORM BUILDER WEBINAR

FORM BUILDING 102: The Building Blocks of Smart Controls

Berit Weymers

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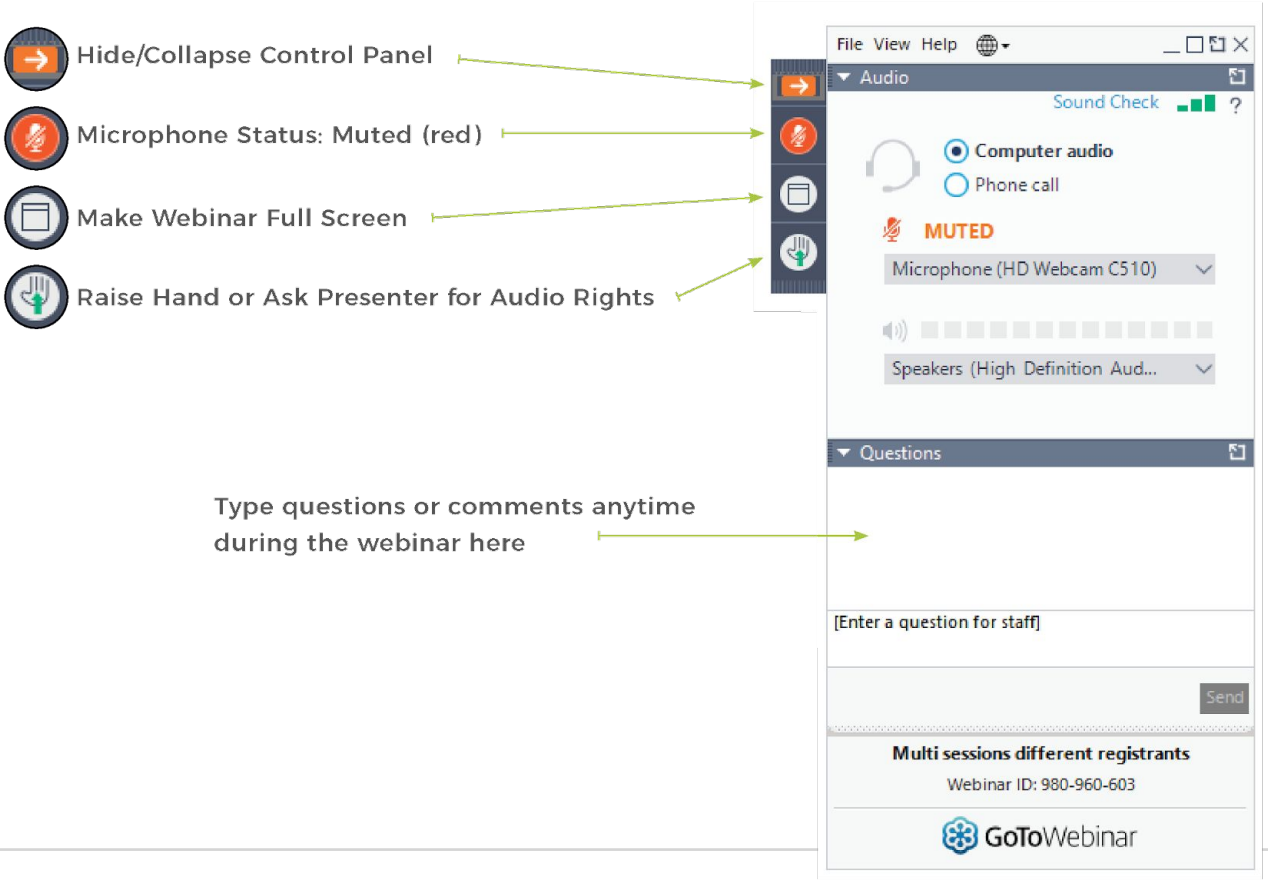


POLL

Agenda

- What are Smart Controls and how to use them
- iFormBuilder Built-in Functions
- Element Dynamic Attributes & Reference ID’s
- Form Dynamic Attributes & Reference ID’s
- Building a Smart Form Demo

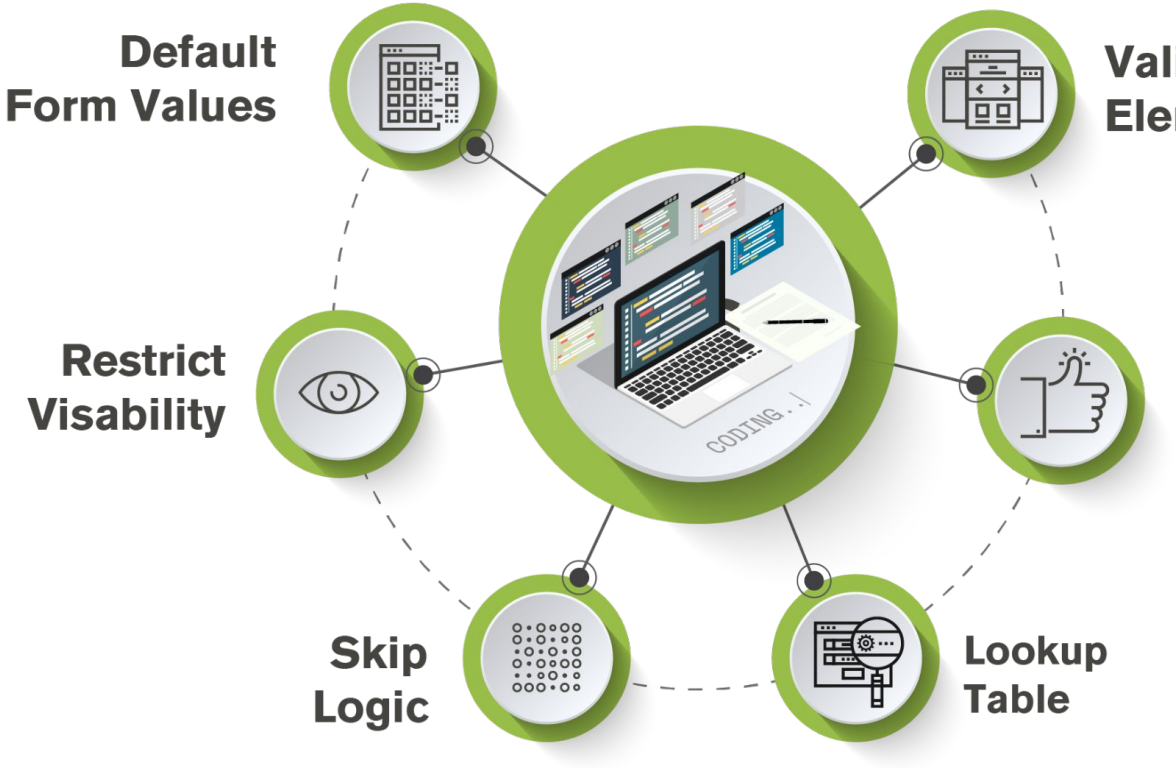
What are Smart Controls & How to Use Them

What are Smarter Forms?

**Adding logic to create custom forms,
eliminating human error and user interaction.**

- Limit characters through Data Size attributes
- HTTP Request Element (Online Required)
- Use of Smart Controls and/or Page Level JavaScript
- Location Element Smart Controls
- Segmented Option Lists
- iFormBuilder Built-in Functions
- Look-up Element
- Reference ID’s and Dynamic Attributes

What are Smart Controls?



Tools:

W3Schools.com

JSFiddle

JavaScript Tips and Tricks

What are Smart Controls?

- Smart Controls are created using Javascript statements.
- Statements include element Names (also called Data Column Names or DCN) and parent Form Name.
- Each Smart Control, Dynamic Value, Condition Value, Dynamic Label, Client Validation and Client Message has its own purpose.

What are Smart Controls?

Dynamic Value

Condition Value

Dynamic Label

Client Validation

Validation Message

Dynamic Values allow an element to…

- have a default value
- base its value on another element

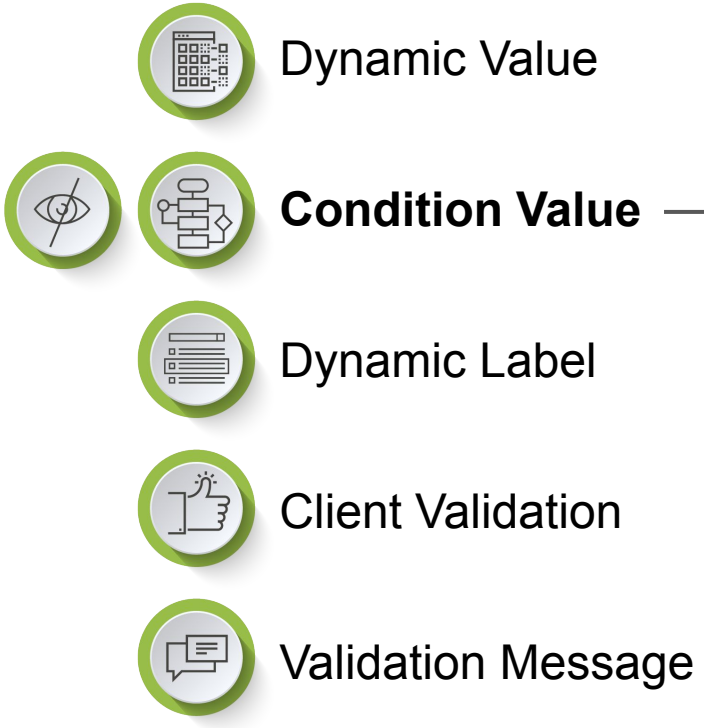
Tips and Tricks:

- refer to elements using their DCN
- use **Date()** to default to today's date

For more resources...

- Dynamic Value Articles
- Date Object Reference

What are Smart Controls?



Condition Values enable...

- an element to be hidden so it cannot be altered
- adaptive routing based on other form values

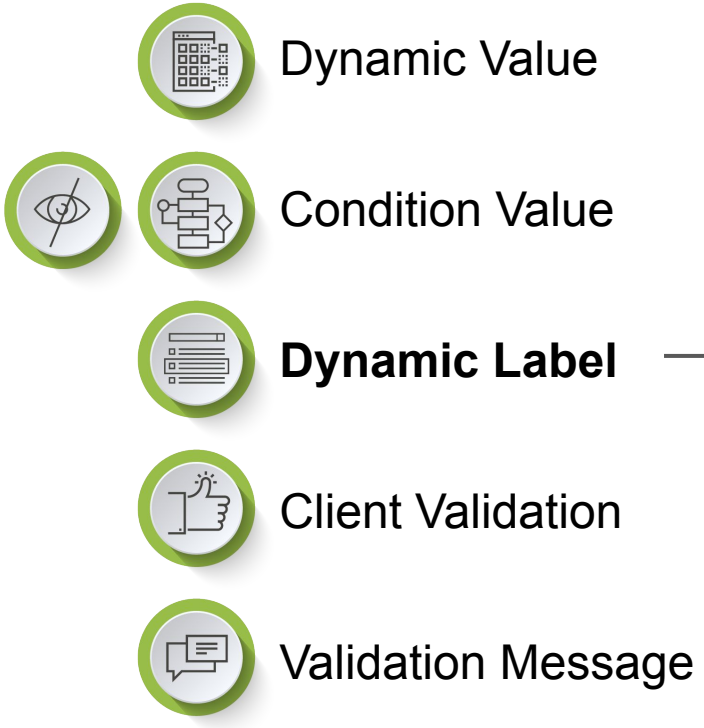
Tips and Tricks:

- use **false** to hide an element
- use **ZCDisplayKey** for option list key values

For more resources...

- Using Condition Values
- Skip Logic

What are Smart Controls?



Dynamic Label creates…

- Custom labels for elements, based off of a previous element's response.

Tips and Tricks:

- Use ZCDisplayValue_ built-in function when using a label from an option list selection.
- Personalize a label by configuring Smart Control statement with iformbuilder.FirstName

For more resources...

- Add Dynamic Label to your form

What are Smart Controls: Dynamic Label

Dynamic Label

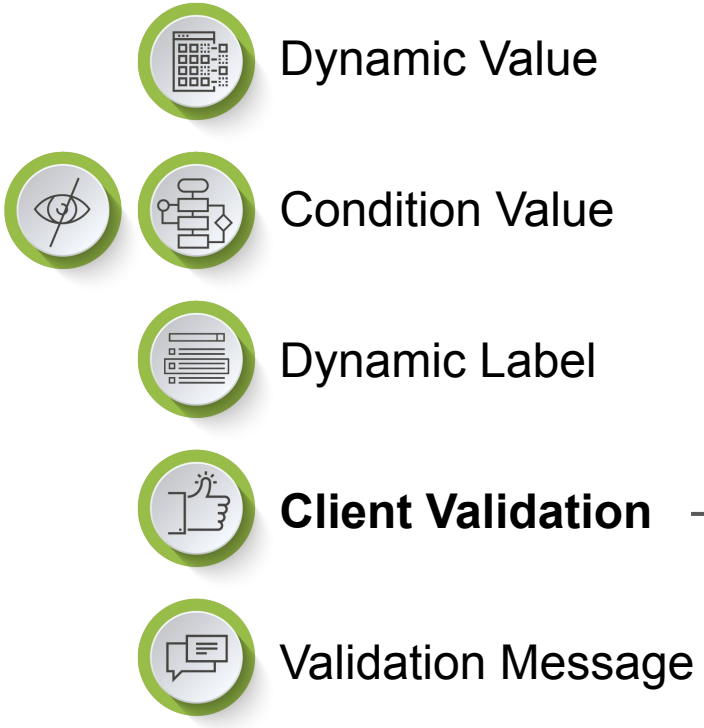
Displays user's answer from a previous element in another element.

Use elements data column names.

Example:

User's previous answer displayed in follow-up question.

What are Smart Controls?



Client Validation allows...

- form builders to prevent illegitimate elements
- for multiple validation criteria

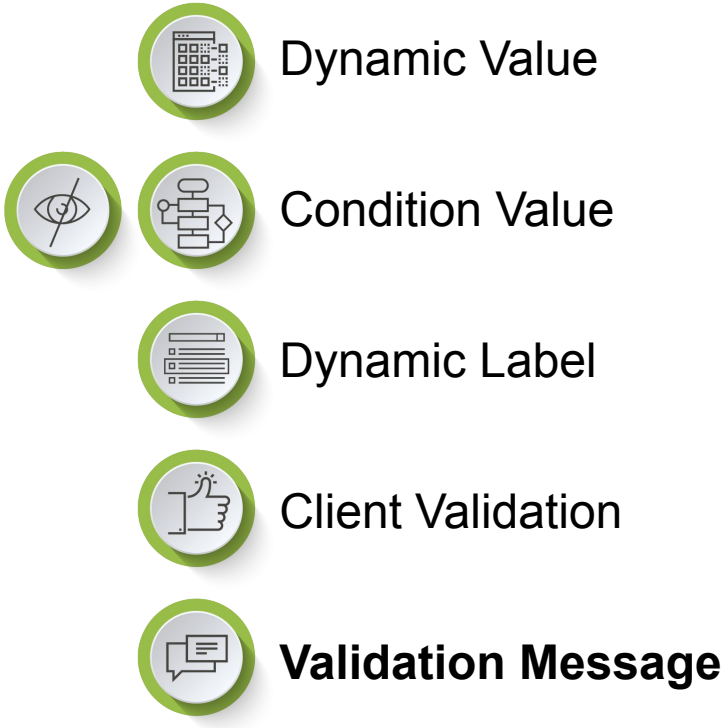
Tips and Tricks:

- use || for or and && for and

For more resources...

- Using Client Validation
- Date Validation

What are Smart Controls?



Validation Messages help...

- instruct data collectors
- enforce complex criteria

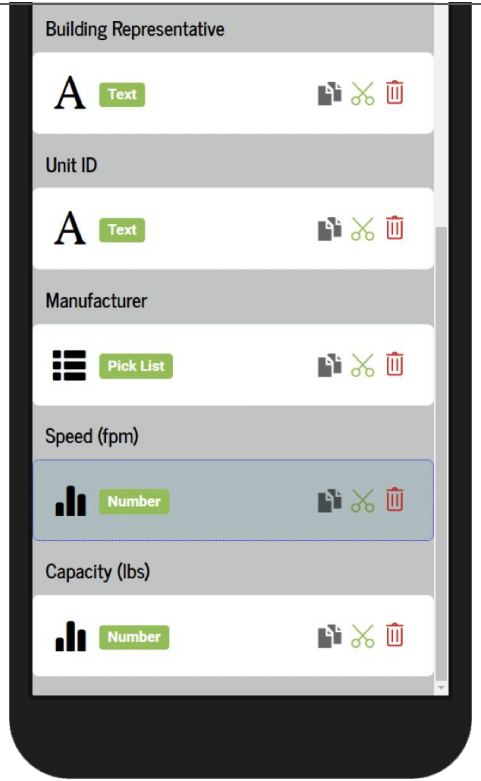
Tips and Tricks:

- use the DCN to include the value in the message
- text must be nested inside quotes
- not supported by localization

For more resources...

- Email Validation

Adding Client Validation



Client Validation:

speed_fpm > 0

Validation Message:

"The speed must be greater than zero"

Remember to put plain text inside quotation marks

New Smart Control Best Practice to clear Caching (September 2023)

https://support.zerionsoftware.com/hc/en-us/articles/18586281937563

WHAT ARE SEMANTIC REFERENCES?

With the release of iForm 10.8, we have implemented a new, more efficient way of implementing Javascript using semantic references or what we refer to internally as SPT (Self, Parent, Top).

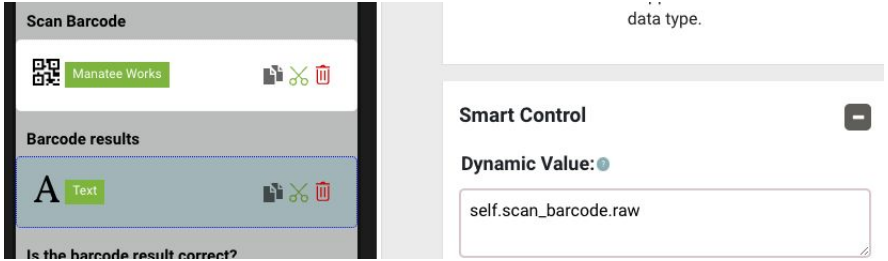
- self: references the value within the current record.
- parent: references the value within the direct parent record.
- top: reference the value within the top-most record.

WHAT ARE THE BENEFITS?

By using semantic references, there is no need to use the full-form path, which makes copying forms and writing long JavaScript functions more efficient while preventing caching issues.

Best Practice to clear Caching (September 2023)

Before	After
my_element_1	self.my_element_1
form.my_element_1	top.my_element_1
form.subform[form.subform.index].my_element_1	self.my_element_1
form.my_element_1 + form.subform[form.subform.index].my_element_2	parent.my_element_1 + self.my_element_2
my_element_1 + form.subform[form.subform.index].subform2[form.subform[form.subform.index].subform2.index].my_element_2	top.my_element_1 + self.my_element_2



A WORKING EXAMPLE

```
{
  "inspection_date": "2022-05-11",
  "buildings": [
    {
      "site_id": "ABC-4",
      "result": "Fail",
      "issues": [
        {
          "code": "032-1",
          "issue_id": "2022-05-11ABC-4032-1"
        }
      ]
    }
  ]
}
```

Old Dynamic Value for issue_id:

```
form.inspection_date +
form.buildings[form.buildings.index].site_id +
form.buildings[form.buildings.index].issues[form.buildings[form.buildings.index].issues.index].code
```

New Dynamic Value for issue_id:

```
top.inspection_date + parent.site_id + self.code
```

Any given view/record can only have one top, one parent, and one self. These objects can be populated on each record load based on the current view.

WILL MY CURRENT JAVASCRIPT CONTINUE TO WORK?

Yes. Any Javascript currently used on your forms will continue to work in the same capacity as it does now.

Form Package Download: https://support.zerionsoftware.com/hc/en-us/article_attachments/18706019529115

iFormBuilder Built-in Functions

iFormBuilder Built-in Functions

User, APP and back-end Information — Displays the user information, information on the app they are using and the details from the backend. Having these built-in functions added to a form can greatly improve user experience, help troubleshoot and assist in integrations.(Blue=Links)

- Username Logged-in: iformbuilder.username
- First Name of User Logged-in: iformbuilder.firstName
- Last Name of User Logged-in: iformbuilder.lastName
- Email of User Logged-in: iformbuilder.email
- OS Type — iformbuilder.osType
- OS Version — iformbuilder.osVersion
- App Version — iformbuilder.appVersion
- App Name — iformbuilder.appName
- Form Version — iformbuilder.formVersion
- Device Model — iformbuilder.deviceModel
- Device Language — iformbuilder.deviceLanguage
- Server Name: iformbuilder.serverName
- User ID: iformbuilder.userID — (Shows the User ID (ex. 12345) instead of the username.)
- Profile ID: iformbuilder.profileID
- Page ID: iformbuilder.pageID — (Shows the Page ID (form ID) of the form the user is entering data in.)
- Form Name: iformbuilder.formName — (Shows name with _'s)
- Form Label: iformbuilder.formLabel – (Shows the label of the form, as seen on the device)
- Import Form Package: https://5eae6d99ac972a7f9f39-bd6eca24a608a68763319e6efcdf3d9f.ssl.cf2.rackcdn.com/training/407235/built_in_form_template_22_p/field_1022348276650afba6db6cb.json

iFormBuilder Built-in Functions

Location Data

By placing iFormBuilder built-in functions into the Dynamic Value of an element, you can automatically capture a user's location data. The following is a list of the location data that can be captured.

- **iformbuilder.location.latitude:** This function will return the latitude data.
- **iformbuilder.location.longitude:** This function will return the longitude data.
- **iformbuilder.location.altitude:** This function will return the altitude data.
- **iformbuilder.location.speed:** This function will return the speed data.
- **iformbuilder.location.accuracy:** This function will return the accuracy data.
- **iformbuilder.location.horizontalAccuracy:** This function will return the horizontal accuracy data.
- **iformbuilder.location.verticalAccuracy:** This function will return the vertical accuracy data.
- **iformbuilder.location.time:** This function will return the time data.
- **iformbuilder.location.string:** This function will return all location data in one string.

iFormBuilder Built-in Functions

Subform Aggregation — Adds or finds the average of the values from the records taken in a Subform and displays the sum of those values in the Parent Form.

- iformbuilder.math.sum
- iformbuilder.math.avg

getNextSeqence() — Allows the user to keep track how many records they have provided.

iFormBuilder Built-in Functions: Subform Aggregation

Subform Aggregation: Sum and Average

Under the Subform element on the parent form, in the field in which you would like the Sum or Average to be displayed, place the following syntax in the Dynamic Value.

iformbuilder.math.sum(table_name.subform_element_dcn, ‘element_on_subform')
Or
iformbuilder.math.avg(table_name.subform_element_dcn, ‘element_on_subform')

Replace the above text with your DCN’s:

- table_name: Parent Form Table name
- subform_element_dcn: The Subform element's DCN on the Parent Form.
- element_on_subform: The element's DCN on the Subform.

Example: iformbuilder.math.sum(bj_smart_controls_demo_march2014_parent.subform_to_aggregate_totals, 'addition1')

iFormBuilder Built-In Functions: Option List

Best Practice: Use **ZCDisplayKey** to allow for changing the label or sort order without breaking Smart Controls.

ZCDisplayKey

This key is the recommended practice with Smart Controls. Much like ZCDisplayValue, but will use the key value instead of option label. This is recommended practice as it gives you the freedom of changing the order or labels of options within a list without breaking your smart control statement

Example:
In the Condition Value of a new text element, place **ZCDisplayKey_my_pick_list_dcn ==“other”** to have the text element displayed ONLY is other is selected from the picklist.

ZCDisplayValue

There may be times when you want to use or view the "Label" of an option list rather than the Key Value or Sort Order. This function could be used to give the user freedom to add more details to an option, or modify the selection(s) they made.

Example:
In the Dynamic Value of a new text element, place **ZCDisplayValue_my_pick_list_dcn== “other”** to have the label of the option selected displayed.

Note: Text in “quotes” must match case of key value or label in option list.

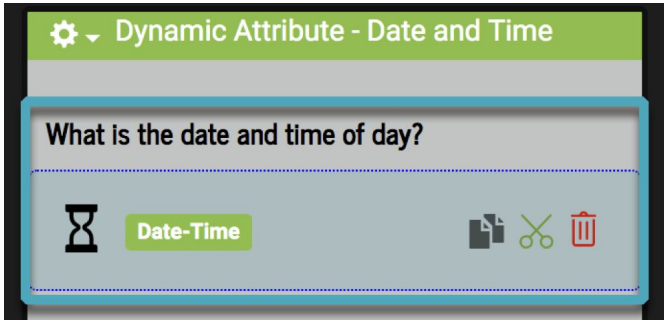
Element Dynamic Attributes & Reference ID’s

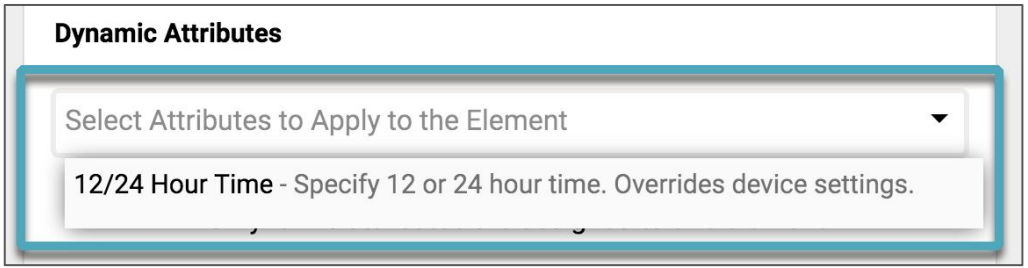
Element Dynamic Attributes

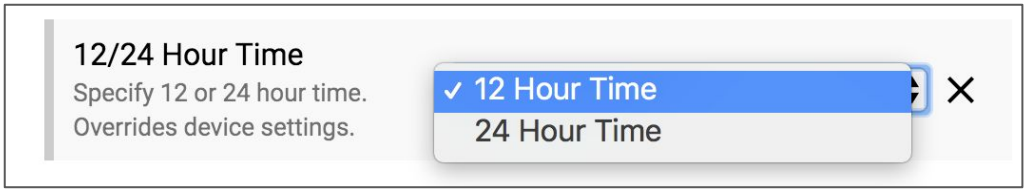
Customize the behavior of elements with the Dynamic Attributes.

Currently for Elements:

- Multi-Photo
- HTTP Request
- Look-up
- Time
- Date-Time







Dynamic Attributes of Multi Photo

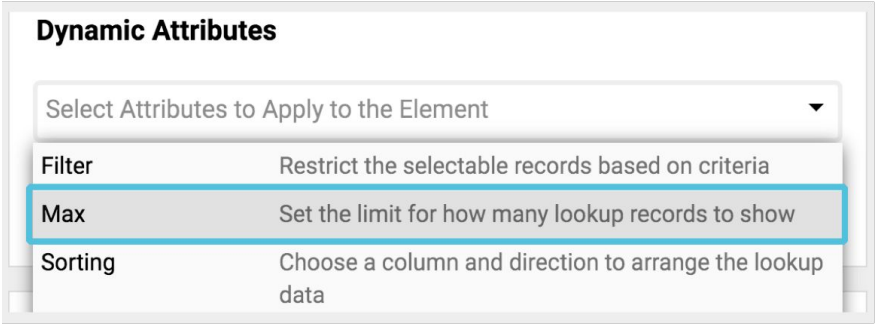
- Ability to take multiple photos quickly and in one element
- Add Dynamic Attributes to:
  - Force Camera
  - Force Library
  - Define number of photos (default is 6)
- Stores Data as JSON object
- Community request

Dynamic Attributes of Lookup Element

Sort: The Sort Dynamic Attribute will allow users to choose the order in which columns are displayed.
https://iformbuilder.zendesk.com/hc/en-us/articles/360029935672-How-do-I-sort-Lookup-data-

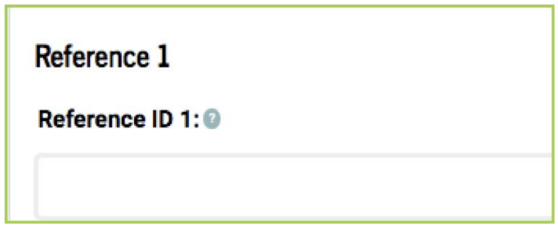
Filter: Filter attribute restricts the selectable/viewable records based on criteria you determine using filters such as equal to, like, greater than, less than, etc.
https://iformbuilder.zendesk.com/hc/en-us/articles/360029662312-How-do-I-filter-the-Lookup-element-data-table-

Read-Only: The Read-Only Dynamic Attribute allows users to only view the data included in the Lookup table. This can be useful in scenarios where users only need to view previous records and not actually populate a new record with the data.
https://iformbuilder.zendesk.com/hc/en-us/articles/360030264311-How-do-I-make-lookup-data-read-only-



Max: The Max Dynamic Attribute allows users to limit the number of rows returned when using the Lookup element. To implement this attribute, follow the instructions below.
https://iformbuilder.zendesk.com/hc/en-us/articles/360029478012-How-do-I-limit-the-number-of-rows-shown-in-the-Lookup-element-

Element Reference IDs



Reporting Reference IDs

- **ELEMENT_SKIP_REPORT**: Element will not show up on your reports PDF, Excel, etc.
- **ELEMENT_REPORT**: Will print "Label" widget on PDF and email reports
- **ELEMENT_SKIP_EMAIL_PDF**: Element will not show on PDF Reports and Email Reports but will show in Data Views and Data Feeds

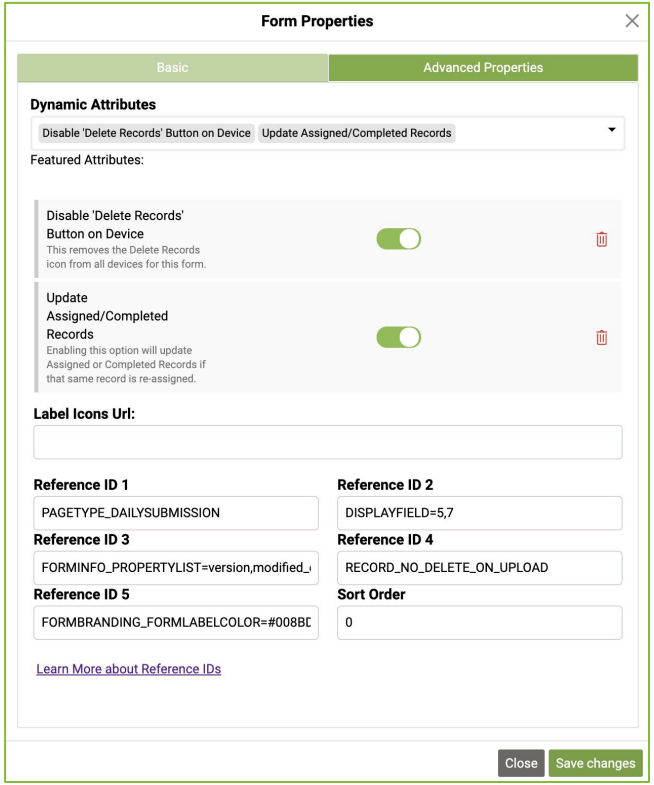
Specific Element Reference IDs

- **SUBFORM_BATCH_MODE:** Upon pressing done on a multi-paging subform, it will open up a new subform record. When you are finished adding subform records, press cancel to return to the parent form.
- **PHOTO_LIBRARY_DISABLED:** Limits the Image and Drawing widget to only leverage the camera.
- **CAMERA_DISABLED:** Limits the Image and Drawing widget to only leverage the image library.
- **COUNTER_STEPVALUE=X**: Changes the Counter widget's value (where X equals the number you want to increase the count by)
- **DISABLE_LIST**: Prefer to have users type information in, type in response instead of using a picklist in Smart Table Search.
- **LOCATION_CHANGE_ENABLED:** Ability to change a location in the Location element by clicking inside the element.

Form Properties: Dynamic Attributes & Reference ID's

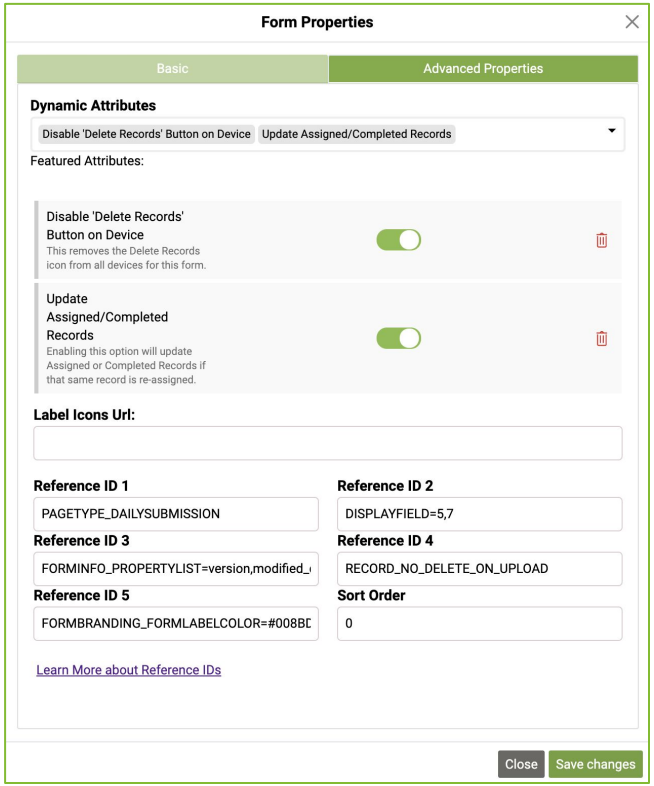
Form Properties: Advanced Properties

- **Dynamic Attributes:** Form/Page Dynamic Attributes allow for form functionality on the App.
- **Reference ID 1–5:** Configurations for form in iForm App. Reference ID Overview and Custom Form Menu Colors (Discussed in more detail in following slides.)
- **Label Icons URL:**
  Place URL path for adding images or icons to a form.
- **Disable Form**:
  Form is no longer available in Form Assignment and hidden in Form Builder.



Form Properties: Form/Page Dynamic Attributes

Dynamic Attribute	Description
Disable 'Delete Records' Button on Device	This removes the Delete Records icon from all devices for this form.
Update Assigned/Completed Records	Enabling this option will update Assigned or Completed Records if that same record is re-assigned.
Map Priority	Order of display on Map View
Map Top Location Disable	Disable the top location from being checked initially.



Form Properties: Reference ID 1

PAGETYPE_DAILYSUBMISSION	Only one record can be submitted for that specific date. *
PAGETYPE_TIMEAWARE=9:00-19:00	Form is only available on the device during this timeframe. *
PAGETYPE_SINGLESUBMISSION	Only submit one record per form. If this flag is applied to a form that has one or more records collected you will not be able to collect any records from the device.
PAGETYPE_NEWFROMLASTRECORD	Pre-populate field data from last submitted record in new record. *Need to have a local record on the device to create copy from. Turn off 'Delete on Upload' in Device Settings)
PDF_SUBFORM_NEW_PAGE	Create new page for subform(s) in PDF report
PAGETYPE_DWINDLINGOL=element_index	This flag removes options from a list after they have been selected. To use, define which element should assume this property (defined by the index value). *NOTE: Option is only removed after a successful sync with the server. *
PAGETYPE_INFO	No new record is created for the form and no data is uploaded from the device. Mainly for use with informative forms. **Requires 4.2 client**)

* Only available on iOS

Form Properties: Reference ID 2

Configure what fields are being displayed in list view on device.

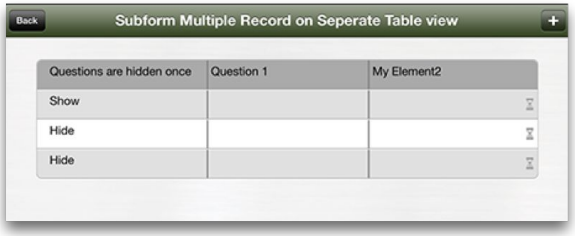
Reference ID 1

Reference ID 2

DISPLAYFIELD=1,5,6,7,9;SORTFIELD=6D

DISPLAYFIELD=0,1,2

(Shows data from specified fields in record view. The numbers represent the element index with the first element always beginning with 0) **Note:** When using this feature do not reference an element index value larger than the max element index on the form or you will not be able view data in record view.



SORTFIELD=0,1,2

The primary difference is that SORTFIELD will display and sort the record view of forms (including subforms) according to the element indexes that are defined. If you define more than one element index value then the rows are sorted in that order by the criteria specified. For instance, if an element “first name” has index of 0, and you apply “SORTFIELD=0” in Ref ID2, records will be sorted alphabetically according to the input for “first name” in the record view on the device.

EXAMPLES:

DISPLAYFIELD=0,1,2
SORTFIELD=0,1,2
DISPLAYFIELD=0,1,2;SORTFIELD=0,1,2 (Ascending)
SORTFIELD= 0,1D,2 (Ascending by 1st column, if same then Descending by 2nd column)
SORTFIELD= 0D

Form Properties: Reference ID 3

Configure what is displayed in the details section of a form.

Reference ID 3

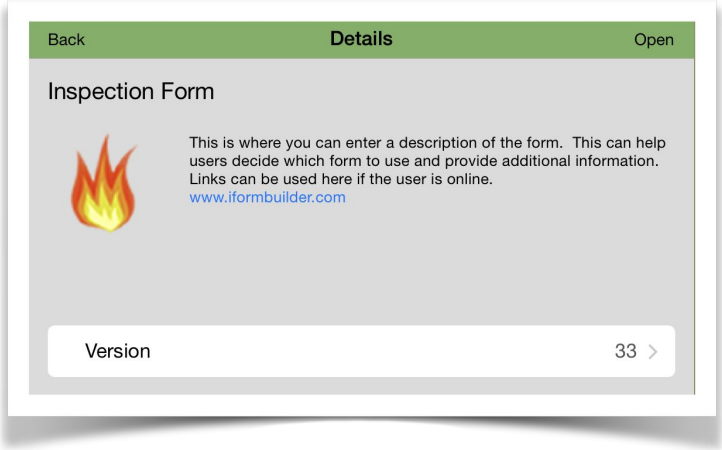
FORMINFO_PROPERTYLIST=modified_date

Reference ID 4

You can view more information about any form by pressing the ⓘ icon. A new screen will open where you can see the description and details such as version history.

Reference ID 3 EXAMPLE:
FORMINFO_PROPERTYLIST=version,modified_date,modified_by

version	*Version number of the form.*
created_by	*Who originally created the form.*
created_date	*When the form was originally created.*
modified_by	*Who was the last one to change the form.*
modified_date	*When the form was last changed.*



Taping “Version” will display all other details.

Form Properties: Reference ID 4

Override device “Delete on Upload” Settings.

Reference ID 3

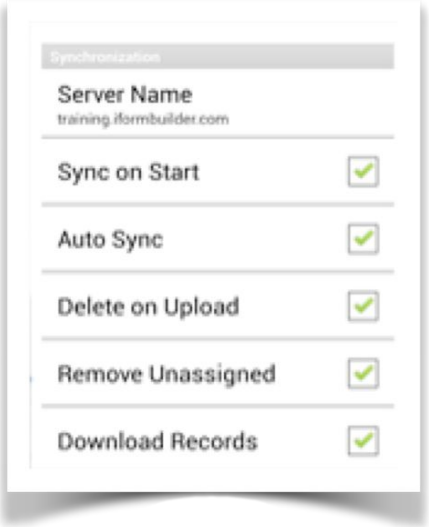
FORMINFO_PROPERTYLIST=modified_date

Reference ID 4

RECORD_DELETE_ON_UPLOAD

RECORD_DELETE_ON_UPLOAD
This will ensure every record created on this form is deleted when the device syncs the record.

RECORD_NO_DELETE_ON_UPLOAD
This will save every completed record on this form as a completed record on the device.



Form Properties: Reference ID 5

Reference ID 5

FORMBRANDING_FORMLABELCOLOR=#696865;FORMBR

Sort Order

0

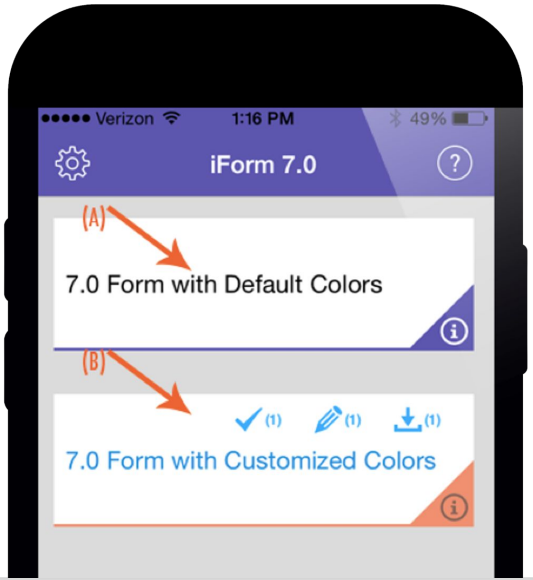
Adjust the color scheme for how each form displays in the Form Menu. There are five different ways you can customize the look of the form view.

PLEASE NOTE:

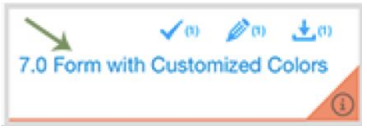
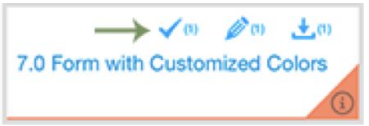
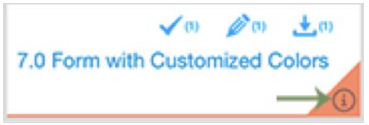
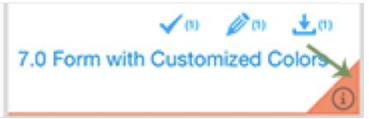
- Must use capital letters and hex values for colors.
- If adding more than one code be sure to enter a semicolon (;) after each code.

EXAMPLE:

FORMBRANDING_FORMLABELCOLOR=#008BDC;
FORMBRANDING_RECORDSTATUSCOLOR=# F29171;
FORMBRANDING_INFOTEXTCOLOR=#89655A;
FORMBRANDING_INFOBARCOLOR=#F29171;
FORMBRANDING_BORDERCOLOR=#89655A;



Form Properties: Reference ID 5

Description	Reference ID	Example	
Color of Form Label Text	FORMBRANDING_FORMLABELCOLOR={hexvalue};	FORMBRANDING_FORMLABELCOLOR=#008BDC;	
Color of Record Status Icons	FORMBRANDING_RECORDSTATUSCOLOR={hexvalue};	FORMBRANDING_RECORDSTATUSCOLOR=#F29171;	
Color of (i) Info Button	FORMBRANDING_INFOTEXTCOLOR={hexvalue};	FORMBRANDING_INFOTEXTCOLOR=#89655A;	
Color of bottom border and area surrounding (i)	FORMBRANDING_INFOBARCOLOR={hexvalue};	FORMBRANDING_INFOBARCOLOR=#F29171;	
Color of entire border and area surrounding (i)	FORMBRANDING_BORDERCOLOR={hexvalue};	FORMBRANDING_BORDERCOLOR=#89655A;	

Hex Value Color Picker Website: http://htmlcolorcodes.com/

Building a Smart Form: Demo

Building a Smart Form: Demo

During the demo, we practiced the following:

- Copy a form template
- Place false in Condition Value to hide iFB Built-in Functions
- Add a Multi-Photo element and configure Dynamic Attributes
- Add Option List with Other Text Element using ZCDisplayKey_
- Use Form/Page Reference ID 2 to configure Table view: **DISPLAYFIELD=**
- Connecting a Subform to a Parent form where number elements have limited characters and use self.element_dcn to clear cache.

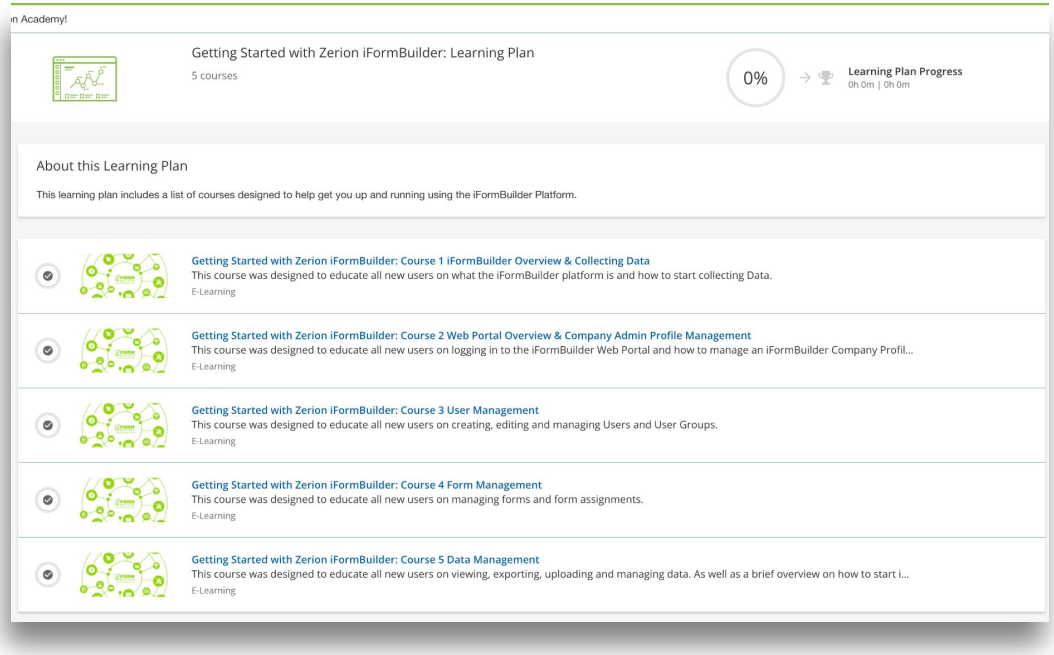
POLL

ANNOUNCEMENTS

- Zerion Academy Asynchronous Courses now available!
- Upcoming Webinars & Events
  - May 22: Zerion AI with CEO Sze Wong
  - June 11 - 14: Online Form Building Certification

How to Access Getting Started Asynchronous Courses

1. Create a user in Zerion Academy https://zerionsoftware.docebosaas.com/learn/register . We suggest creating a username that is your email address. (Already have one? Skip to step 3.)
2. Follow the steps in the email to confirm your account and change your password.
3. Log in to Zerion Academy. Once logged in, click on the following Learning Plan link. This enrolls you and brings you to the learning plan that contains the courses. https://zerionsoftware.docebosaas.com//lms/index.php?r=coursepath/deeplink&id_path=21&hash=34ca05d869b49e9dd58548a4417cfb1a98b7e83c&generated_by=13007



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THANK YOU!

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