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App Building Best Practices

Formulas and Form Rule Use Cases

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Agenda

How to use Formulas and Form Rules to solve day-to-day workflow challenges

- ① Explore 17 Formulas
- ② Use 6 Form Rules
- ③ Test them
- ④ See how they work
- ⑤ Discuss best practices



KIRK TRACHY
SALES ENGINEER
INTUIT QUICKBASE

Long time QuickBase Evangelist and Sales Engineer. Kirk joined QuickBase in 2005 and hosts daily webinars about how to make the best of your QuickBase applications. Kirk is often heard saying, "You can do anything with QuickBase." and "If you can say it you can do it". Kirk has a broadcasting background having worked with CBS and Westinghouse Radio. Kirk lives in Stratham, NH and enjoys a large family, technology, computers and flying. Oh, he has a passion for wanting to live simply in a very tiny house.



CONNECT

SESSIONS I'M PARTICIPATING IN:

[Mastering Form Rules and Formulas](#)



CRAIG MCELROY

DATABASE DIRECTOR, J. LODGE, LLC

Craig has served in the database department at J. Lodge for over 6 years. During this time, he has built over 100 applications in QuickBase, managing tens of applications concurrently. In addition to application development, Craig has also provided administrative services to over 1000 users among a variety of clients for J. Lodge.

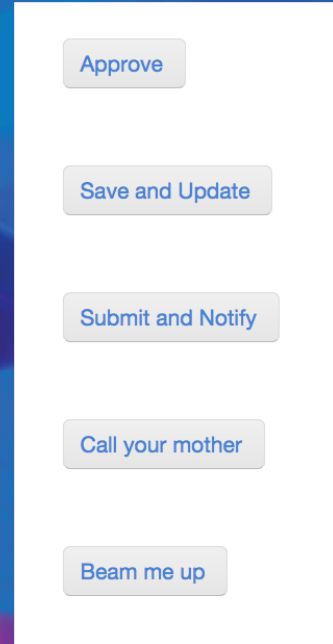
J. Lodge delivers premier contact center services to a variety of industries based in the United States.

SESSIONS I'M PARTICIPATING IN:

Mastering Form Rules and Formulas

Benefits of Buttons and Form Rules

- ① Automate complex processes
- ② Provide custom user experiences
- ③ Ease new user adoption
- ④ Save training time
- ⑤ Simplify use



Ten Buttons (Get “Magic Buttons” From Exchange)

- 1) Change status
- 2) Change status then dashboard
- 3) Check a checkbox
- 4) Check / Uncheck checkbox dr
- 5) Check / Uncheck checkbox er
- 6) Show/Hide Project Section
- 7) Change to a different form
- 8) Assign to self
- 9) Create a project snapshot
- 10) Edit record and return

1. Change status to completed then dr

Formula URL Button

```
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &  
"&rid=" & [Record ID#] &  
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r" &  
"&_fid_28=Completed" &  
"&rdr=" &  
URLEncode(URLRoot() & "db/" & Dbid() &  
"?a=dr&rid=" & [Record ID#])
```

Press the button and change status to "Completed" and then redirects to dr.

2. Change status to completed then dashboard

Formula URL Button

```
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &  
"&rid=" & [Record ID#] &  
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r" &  
"&_fid_28=Completed" &  
"&rdr=" &  
URLEncode(URLRoot() & "db/" & Dbid())
```

Press the button and change the status to "Completed". Then redirects to dashboard.

3. Check a checkbox then dr

Formula URL Button

```
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &  
"&rid=" & [Record ID#] &  
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r" &  
"&_fid_101=1" &  
"&rdr=" &  
URLEncode(URLRoot() & "db/" & Dbid() &  
"?a=dr&rid=" & [Record ID#])
```

Press the button and this changes the "Checkbox" to checked.

4. Check / Uncheck a checkbox then dr

Formula URL Button

```
If([Checkbox]=false,URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r"&
"&_fid_101=1" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=dr&rid=" & [Record ID#])
',
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r"&
"&_fid_101=0" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=dr&rid=" & [Record ID#]))
```

Press to check "Checkbox".

Press again and uncheck
"Checkbox".

Left in display mode **dr**.

5. Check / Uncheck a checkbox then er

Formula URL Button

```
If([Checkbox]=false,URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r"&
"&_fid_101=1" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=er&rid=" & [Record ID#]))
,
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r"&
"&_fid_101=0" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=er&rid=" & [Record ID#]))
```

Press to check "Checkbox".

Press again and uncheck
"Checkbox".

Left in display mode **er**.

6. Show/Hide Project Section then dr

Formula URL Button

```
If([Show Project Section]=false,URLRoot()& "db/" &Dbid()& "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjsx2sesxkjccwgtq9r"&
"&_fid_105=1" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=dr&rid=" & [Record ID#])
,
URLRoot()& "db/" &Dbid()& "?a=API_EditRecord" &
"&rid=" & [Record ID#]&
"&apptoken=d9eascudwjsx2sesxkjccwgtq9r"&
"&_fid_105=0" &
"&rdr=" &
URLEncode(URLRoot() & "db/" & Dbid() &
"?a=dr&rid=" & [Record ID#]))
```

Uses formula URL to check and uncheck a checkbox that triggers a form rule to show/hide a form section.

7. Change to a different form dr

Formula URL Button

```
URLRoot() & "db/" & Dbid() &  
"?a=dr&rid=" & [Record ID#]&  
"&dfid=13"
```

When pressed this will display the record you are already on but with an alternate form (dfid=13).

8. Assign to self then dr

Formula URL Button

```
URLRoot() & "db/" & Dbid() & "?a=API_EditRecord"&  
"&AppToken=d9eascudwjxs2sesxkjccwgtq9r"&  
"&rid=" & [Record ID#]&  
"&_fid_97=" & URLEncode(User()) &  
"&rdr=" &  
URLEncode(URLRoot() & "db/" & Dbid() &  
"?a=dr&rid=" & [Record ID#])
```

Press a button and assign yourself as "Project Manager."

9. Create a project snapshot then dr

Formula URL Button

```
URLRoot() & "db/" & [_DBID_PROJECT_SNAPSHOTS] & "?a=API_AddRecord" &  
"&apptoken=d9eascudwjxs2sesxkjccwgtq9r"&  
"&_fid_6=" & [Project Name]&  
"&_fid_7=" & [Status]&  
"&_fid_8=" & [Priority]&  
"&_fid_9=" & [Est Start Date]&  
"&_fid_10=" & [Est End Date]&  
"&rdr=" &  
URLEncode(URLRoot() & "db/" & Dbid() &  
"?a=dr&rid=" & [Record ID#])
```

10. Edit record and return to starting point

Formula URL Button

```
var text url=
```

```
URLRoot()& "db/" &Dbid()& "?a=API_EditRecord" &  
"&rid=" & [Record ID#]&  
"&apptoken=d9eascudwjsx2sesxkjccwgtq9r"&  
"&_fid_28=Completed";
```

```
"javascript:" &  
"$$.get('" &  
$url &  
"',function(){" &  
"location.reload();"&  
"});" &  
"void(0);"
```

This formula sets a variable called url with an API_EditRecord and changes fid_28 to Completed.

The bottom of this formula then calls the url and reloads the page **from where you came**.

That means:

If launched from view form returns to view form

If launched from edit form returns to edit form

If launched from report – returns to report

If launched from dashboard- returns to dashboard

This formula is a derivation of a formula originally published in the community forum by QuickBase Solution Provider:

Mark Shnier, Your QuickBase Coach,
<http://www.yourquickbasecoach.com>.

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Resident QuickBase Guru



J.Lodge is a US based Quality Assurance Monitoring Provider

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12 Form and Formula use cases

- 1) Form Rule: Hide
- 2) Form Rule: Unrequire
- 3) Form Rule: Clear (or Change to Blank)
- 4) Form Rule: Current Time and Current User
- 5) Form Rule: Abort Save
- 6) Formula to check conditions to abort save
- 7) Formula to check conditions to apply fields
- 8) Formula for Fiscal Periods
- 9) Formula for Trending Percentage
- 10) Formula for Tagging records for Locks
- 11) Formula for Tagging records for Emails
- 12) Formulas for Archiving Records

Form Rule: Hide

Hide fields that are not needed on your forms based on conditional logic!

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

When

 is not equal to

Action

hide	A1 Other
unrequire	A1 Other
change	A1 Other to <input type="text"/>

Otherwise

when A1 *is equal to* Other, **show** A1 Other, and **require** A1 Other

Options

- ☒ Fire "change" actions only when a condition *changes* from false to true
- ☒ Collapse the space when hiding *fields*

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

A1 Other*

Form Rule: Unrequire

Require and Unrequire fields to make sure data is captured ONLY when you want it!

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

A1 Other*

When

is not equal to

Other

Action

A1 Other

to

Otherwise

when A1 *is equal to* Other, **show** A1 Other, and **require** A1 Other

Options

- ☒ Fire "change" actions only when a condition *changes* from false to true
- ☒ Collapse the space when hiding *fields*

Form Rule: Clear

Change field to blank when it is hidden so that it does not capture unwanted data.

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

A1. Reason for Call*

A2. Mood of Customer at Contact Start*

A1 Other*

When

is not equal to

Action

A1 Other

A1 Other

A1 Other

Otherwise

when A1 *is equal to* Other, **show** A1 Other, and **require** A1 Other

Options

- ☒ Fire "change" actions only when a condition *changes* from false to true
- ☒ Collapse the space when hiding *fields*

Form Rule: Current Time and Current User

Use Change rules to select user and date. This way they can be edited afterward as needed.

When

Evaluation Start Checkbox ▼ is equal to ▼ checked ▼

Action

hide ▼ Evaluation Start Checkbox ▼
show ▼ Section: Related Metadata ▼
change ▼ Evaluation Start ▼ to the current date/time ▼
change ▼ Evaluation By ▼ to the current user ▼

Otherwise

when Evaluation Start Checkbox *is not equal to* checked, **show** Evaluation Start Checkbox, and **hide** Related Metadata

Options

- ☒ Fire "change" actions only when a condition *changes* from false to true
- ☒ Collapse the space when hiding *fields*

Admin

☐ A7 Change

Evaluation By McElroy, Craig ▼

Evaluation Start 04-06-2015 1:27 PM 📅

Form Rule: Abort Save

Prevent records from being saved to your application when certain conditions occur or do not occur.

When

The record is saved

and all of the following conditions are true:

Conflict Check is not equal to

Action

abort the Save

A Conflict has been detected on this Evaluation. Please review.

Record not saved

Conflict Check is not equal to <blank>

A Conflict has been detected on this Evaluation. Please review.

OK

Formula to check conditions to abort save

Use a List formula in conjunction with If/Case formulas to trigger events which abort the saving of conflicts.

Basics

Label

Type [Text](#) [Change Type](#)

Unique ☐ Values in the field must be unique

Formula - Text field options

Allow HTML ☐ Allow some HTML tags to be inserted in the field

formula

```
List("/ ",
If([A2]="N/A",Case([A7],,"","N/A","Mood cannot start as N/A unless it also ends as N/A"),""),
If([A7]="N/A",Case([A2],,"","N/A","Mood cannot end as N/A unless it also starts as N/A"),""),
""))
```

Formula to check conditions to apply fields

Use a Case formula to cause a checkbox to be true or false, which determines when fields are applicable.

Basics

Label

Type ☐ Checkbox [Change Type](#)

Unique ☐ Values in the field must be unique

Formula - Checkbox field options

Totals ☐ Show a "totals" row in reports

formula

```
Case([A2],  
"Happy",Case([A7],"Indifferent",true,"Angry",true,false),  
"Indifferent",Case([A7],"Happy",true,"Angry",true,false),  
"Angry",Case([A7],"Indifferent",true,"Indifferent",true,false),  
false)
```

When

is not equal to

Action

to

Otherwise

when A7 Change **is equal to** checked, **show** A7 Details, and **require** A7 Details

Options

- ☒ Fire "change" actions only when a condition *changes* from false to true
- ☒ Collapse the space when hiding *fields*

Formula for Fiscal Periods

Format custom date ranges to sort alphanumerically, while also being clear on the range of dates included.

All	
Fiscal Period	Number of Evaluations
2015-02-22 to 2015-03-21	4
2015-03-22 to 2015-04-21	1
Totals (2 groups)	5

Formula - Text field options

Allow HTML

☐ Allow some HTML tags to be inserted in the field

formula

```
if(
  Day(ToDate([Evaluation Date]))<=22,
  Case(Month(ToDate([Evaluation Date])),
    1,(Year(ToDate([Evaluation Date]))-1)&"-12-22 to "&Year(ToDate([Evaluation Date]))&"-01-21",
    2,Year(ToDate([Evaluation Date]))&"-01-22 to "&Year(ToDate([Evaluation Date]))&"-02-21",
    3,Year(ToDate([Evaluation Date]))&"-02-22 to "&Year(ToDate([Evaluation Date]))&"-03-21",
    4,Year(ToDate([Evaluation Date]))&"-03-22 to "&Year(ToDate([Evaluation Date]))&"-04-21",
    5,Year(ToDate([Evaluation Date]))&"-04-22 to "&Year(ToDate([Evaluation Date]))&"-05-21",
    6,Year(ToDate([Evaluation Date]))&"-05-22 to "&Year(ToDate([Evaluation Date]))&"-06-21",
    7,Year(ToDate([Evaluation Date]))&"-06-22 to "&Year(ToDate([Evaluation Date]))&"-07-21",
    8,Year(ToDate([Evaluation Date]))&"-07-22 to "&Year(ToDate([Evaluation Date]))&"-08-21",
    9,Year(ToDate([Evaluation Date]))&"-08-22 to "&Year(ToDate([Evaluation Date]))&"-09-21",
    10,Year(ToDate([Evaluation Date]))&"-09-22 to "&Year(ToDate([Evaluation Date]))&"-10-21",
    11,Year(ToDate([Evaluation Date]))&"-10-22 to "&Year(ToDate([Evaluation Date]))&"-11-21",
    12,Year(ToDate([Evaluation Date]))&"-11-22 to "&Year(ToDate([Evaluation Date]))&"-12-21",
    Case(Month(ToDate([Evaluation Date])),
      1,Year(ToDate([Evaluation Date]))&"-01-22 to "&Year(ToDate([Evaluation Date]))&"-02-21",
      2,Year(ToDate([Evaluation Date]))&"-02-22 to "&Year(ToDate([Evaluation Date]))&"-03-21",
      3,Year(ToDate([Evaluation Date]))&"-03-22 to "&Year(ToDate([Evaluation Date]))&"-04-21",
      4,Year(ToDate([Evaluation Date]))&"-04-22 to "&Year(ToDate([Evaluation Date]))&"-05-21",
      5,Year(ToDate([Evaluation Date]))&"-05-22 to "&Year(ToDate([Evaluation Date]))&"-06-21",
      6,Year(ToDate([Evaluation Date]))&"-06-22 to "&Year(ToDate([Evaluation Date]))&"-07-21",
      7,Year(ToDate([Evaluation Date]))&"-07-22 to "&Year(ToDate([Evaluation Date]))&"-08-21",
      8,Year(ToDate([Evaluation Date]))&"-08-22 to "&Year(ToDate([Evaluation Date]))&"-09-21",
      9,Year(ToDate([Evaluation Date]))&"-09-22 to "&Year(ToDate([Evaluation Date]))&"-10-21",
      10,Year(ToDate([Evaluation Date]))&"-10-22 to "&Year(ToDate([Evaluation Date]))&"-11-21",
      11,Year(ToDate([Evaluation Date]))&"-11-22 to "&Year(ToDate([Evaluation Date]))&"-12-21",
      12,Year(ToDate([Evaluation Date]))&"-12-22 to "&ToText(Year(ToDate([Evaluation Date]))+1)&"-01-21")
    )
  )
)
```

Formula for Trending Percentage

Use a Case formula to trend percentage of occurrences, excluding results which are not applicable.

Fiscal Period						
2015-02-22 to 2015-03-21						
Contact - Region	Number of Evaluations	A3 % (avg)	A4 % (avg)	A5 % (avg)	A6 % (avg)	A8 % (avg)
Northeast	1	100.0%	100.0%	100.0%		100.0%
Southeast	1	0.0%	100.0%	100.0%	0.0%	100.0%
Central	2	100.0%	50.0%	100.0%		50.0%
Totals (4 groups)	4	75.0%	75.0%	100.0%	0.0%	75.0%

Basics

Label

A3 %

Type

Numeric [Change Type](#)

Unique

☐ Values in the field must be unique

Formula - Numeric field options

Units description

Describes the values in this field. Text is appended to the field name

Default sort order

Ascending ▼

Totals and averages

☐ Display a total of this field in reports
☒ Display an average of this field in reports

formula

Case([Evaluation Status],"Approved",Case([A3],"Yes",1,"No",0,"NA",null,"N/A",null,null),null)

Formula for Tagging records for Locks

Use a formula to select records which can or cannot be modified by certain user roles.

Custom Permissions for Evaluations

Analyst may edit Evaluations where:

Evaluation By	▼	is the current user	▼
Data Lock	▼	is not equal to	▼ checked ▼

Basics

Label	Data Lock
Type	Checkbox Change Type
Unique	<input type="checkbox"/> Values in the field must be unique

Formula - Checkbox field options

Totals	<input type="checkbox"/> Show a "totals" row in reports
formula	<code>If(Today()-Min(ToDate([Evaluation Date]),ToDate([Date Created]))>Days(14),true,false)</code>

Formula for Tagging records for Emails

Use a Case formula to show records in a report only on the days in which you want the report to be emailed.

Subscription Name

Select Report:

Deliver by Email: ☒ Daily
☐ Weekly
☐ Monthly

Deliver to: ☐ Me
☐ All users with access (3 total)
☒ Select Roles
☐ Analyst (0 total)
☒ Manager (1 total)
☐ Administrator (2 total)

☐ Send an email even if there are no records found for this report

Basics

Label

Type ☐ [Change Type](#)

Unique ☐ Values in the field must be unique

Formula - Checkbox field options

Totals ☐ Show a "totals" row in reports

formula

```
Case(Day(Today()),
8,ToDate([Evaluation Date])-Today()>=Days(2) and [Fiscal #]=0,
23,ToDate([Evaluation Date])-Today()>=Days(2) and ToDate([Evaluation Date])-Today()<=Days(16),
false)
```

Formulas for Archiving Records

Convert your records into text strings to store in another table where formula fields extract the original record's results.

Basics

Label	<input type="text" value="Archive Code"/>
Type	Text Change Type
Unique	<input type="checkbox"/> Values in the field must be unique

Formula - Text field options

Allow HTML	<input type="checkbox"/> Allow some HTML tags to be inserted in the field
formula	<pre>Case([Evaluation Status], "Approved","A","Pending","P","Abandoned","X","_")& Case([Contact - Region], "Northeast","NE","Southeast","SE","Central","CL","Northwest","NW","Southwest","SW","_")& If(Year(ToDate([Evaluation Date]))>=2001, Year(ToDate([Evaluation Date]))& If(Month(ToDate([Evaluation Date]))<10,"0","")& Month(ToDate([Evaluation Date]))& If(Day(ToDate([Evaluation Date]))<10,"0","")& Day(ToDate([Evaluation Date])), "_____"& If(Year(ToDate([Contact Date/Time]))>=2001, Year(ToDate([Contact Date/Time]))& If(Month(ToDate([Contact Date/Time]))<10,"0","")& Month(ToDate([Contact Date/Time]))& If(Day(ToDate([Contact Date/Time]))<10,"0","")& Day(ToDate([Contact Date/Time])), "_____"&"/"&</pre>

Formulas for Archiving Records

Case and Mid formulas are used to convert text string characters into original results.

Formula - Text field options

Allow HTML

☐ Allow some HTML tags to be inserted in the field

formula

```
Case(Mid([Archive Code],2,2),"NE","Northeast","SE","Southeast","CL","Central","NW","Northwest","SW","Southwest","")
```

Formula - Date field options

Default sort order

Ascending ▾

Formula

- ☒ Edit formula using a text field
☐ Use the End Date formula builder

```
Date(ToNumber(Mid([Archive Code],12,4)),ToNumber(Mid([Archive Code],16,2)),ToNumber(Mid([Archive Code],18,2)))
```

Sample Application

<https://ilodge.quickbase.com/db/bjswdmwdv>

Application designed to capture Evaluations.

Entire application designed in less than 5 hours.

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Questions

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