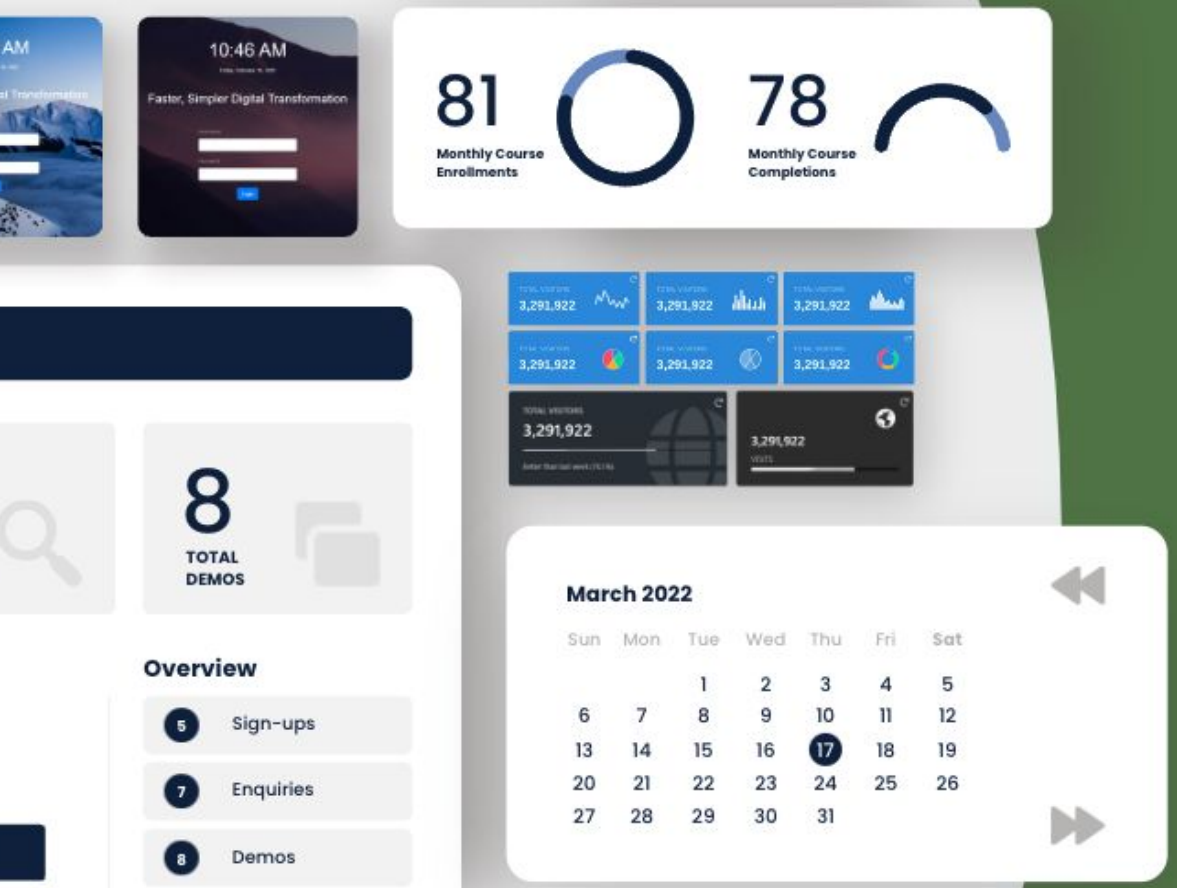
Joget



Joget DX8

Hash Variable

http://facebook.com/jogetworkflow

http://twitter.com/jogetworkflow

Last Revised on Jan 2023

Joget

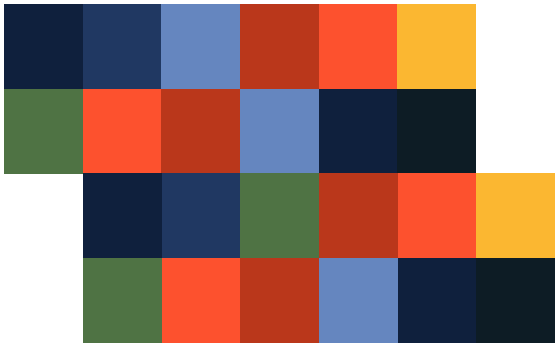
Prerequisites

- General understanding on how to design an App using the Joget platform (i.e. Process, Form, List, UI).

Joget

Content

1. Introduction to Hash Variable
2. List of Hash Variable and Its Usages
3. Nested Hash Variable

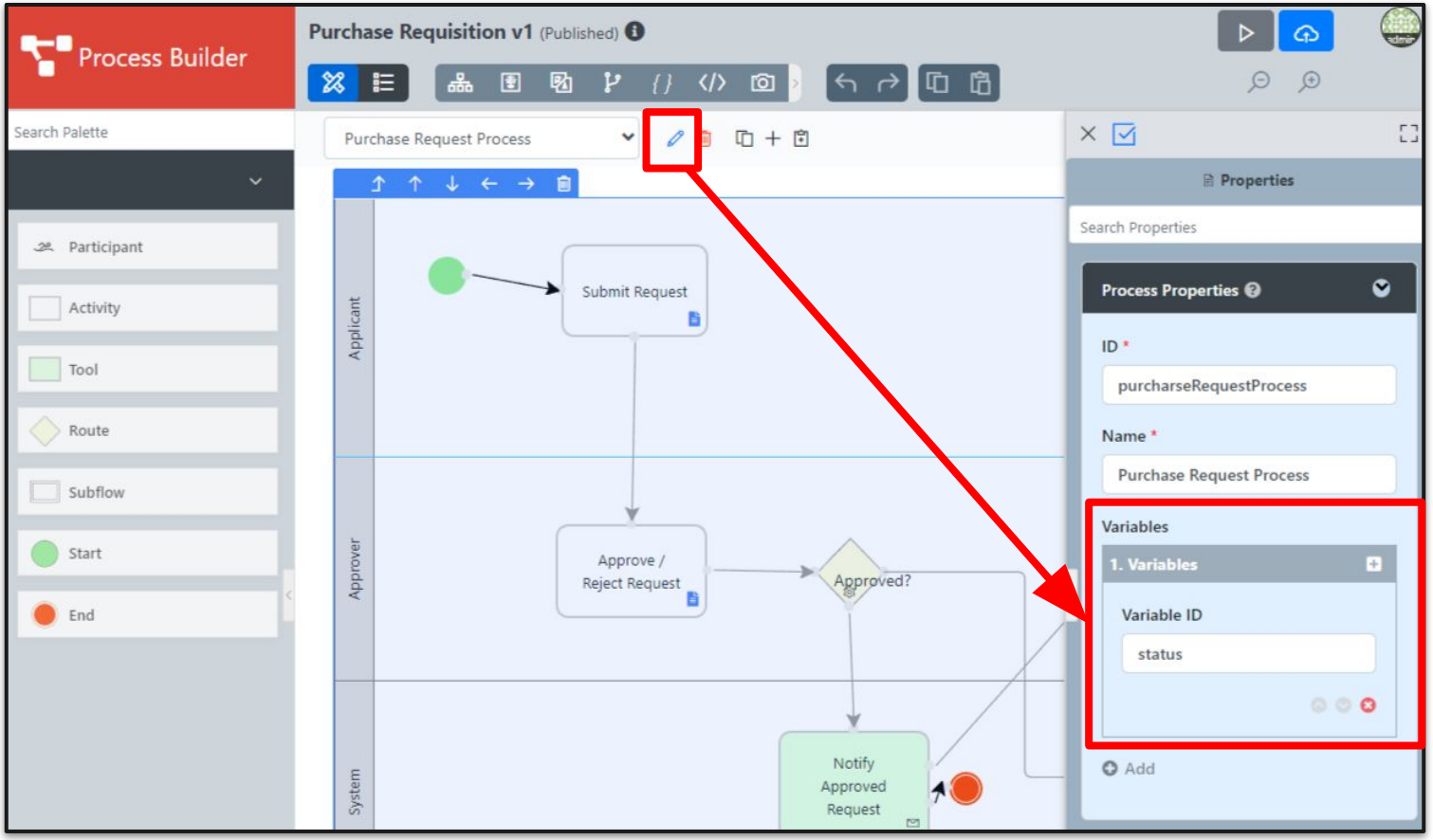


Chapter 1

Introduction to Hash Variable

What Is Hash Variable?

- Hash Variable **is not** Workflow Variable



Joget

What Is Hash Variable?

- Hash Variable is a special **hash-escaped keyword** that can be used in (but NOT limited to)...
  - Form Builder
  - List Builder
  - UI Builder
  - Supported plugin configuration properties
  - Activity name in Process Builder
  - External Form URL when mapping an activity to an external form

  ...to return the value of useful runtime variables from the (App) Variables.

Joget

Hash Variable

- Each Hash Variable element has its own **prefix**. E.g.:
  - #**date**.D-MMM-yyyy#
  - #**form**.purchase_requests.name#
  - #**variable**.status#
  - #**i18n**.smtpServer#
- A new Hash Variable (with its own unique prefix) can be built through Joget plugin architecture.

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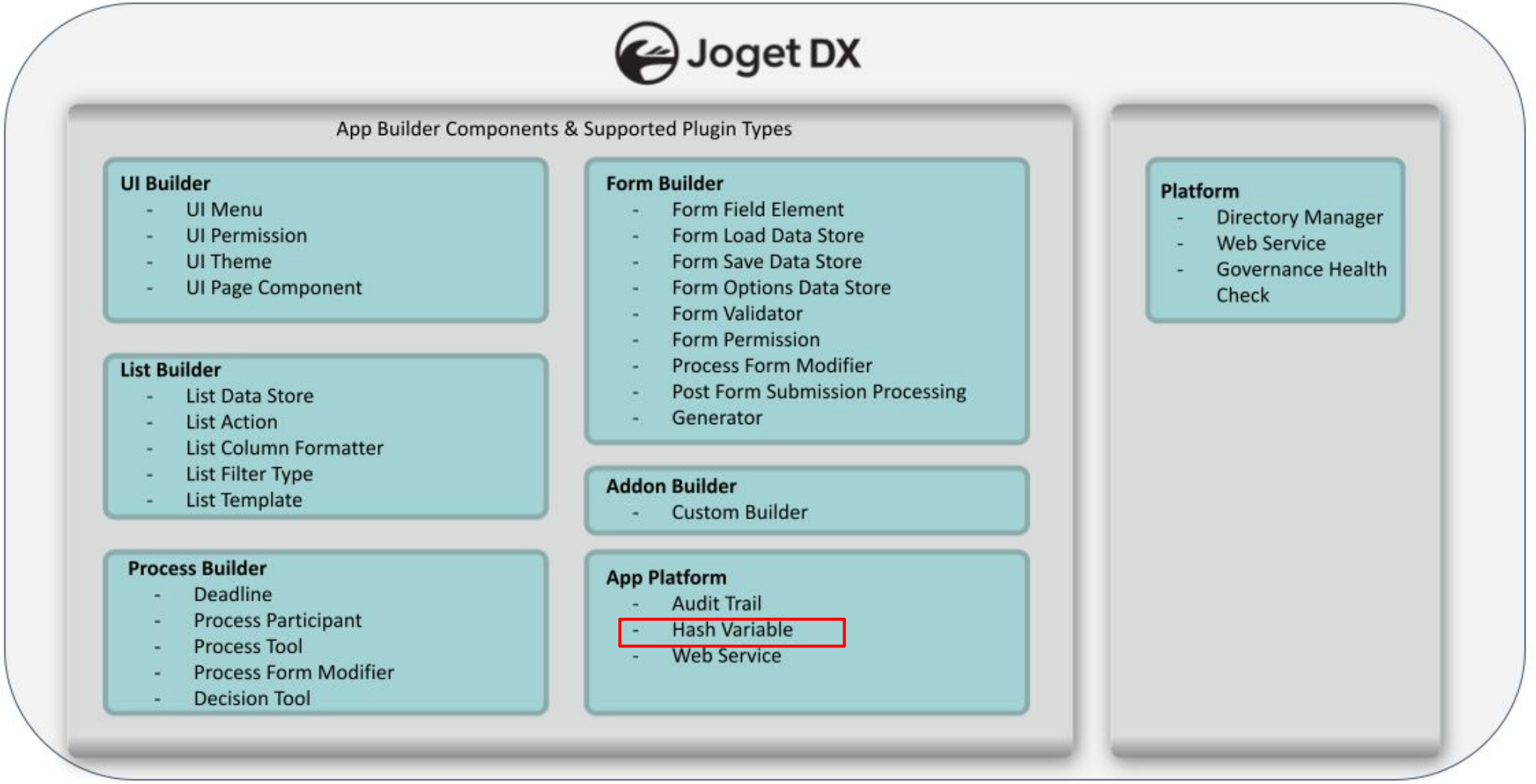
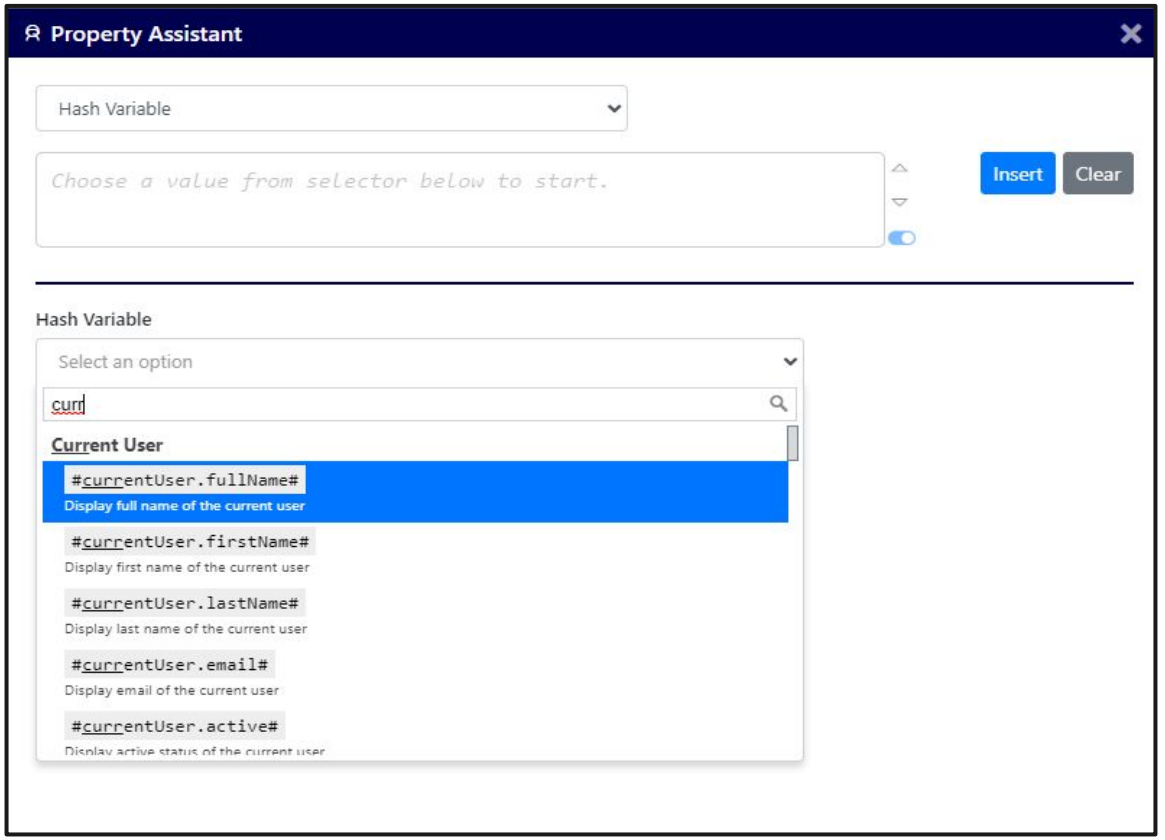
Plugin Types



Property Assistant

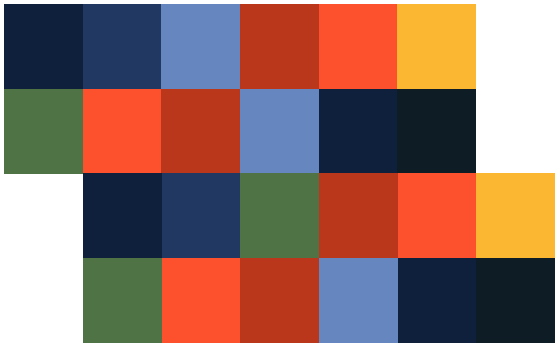
- Use **CTRL+SHIFT+3 (CTRL + #)** to open up the property assistant to help you autocomplete using hash variable.



Joget

Chapter Review

- Brief understanding on the purpose that Hash Variable serves.

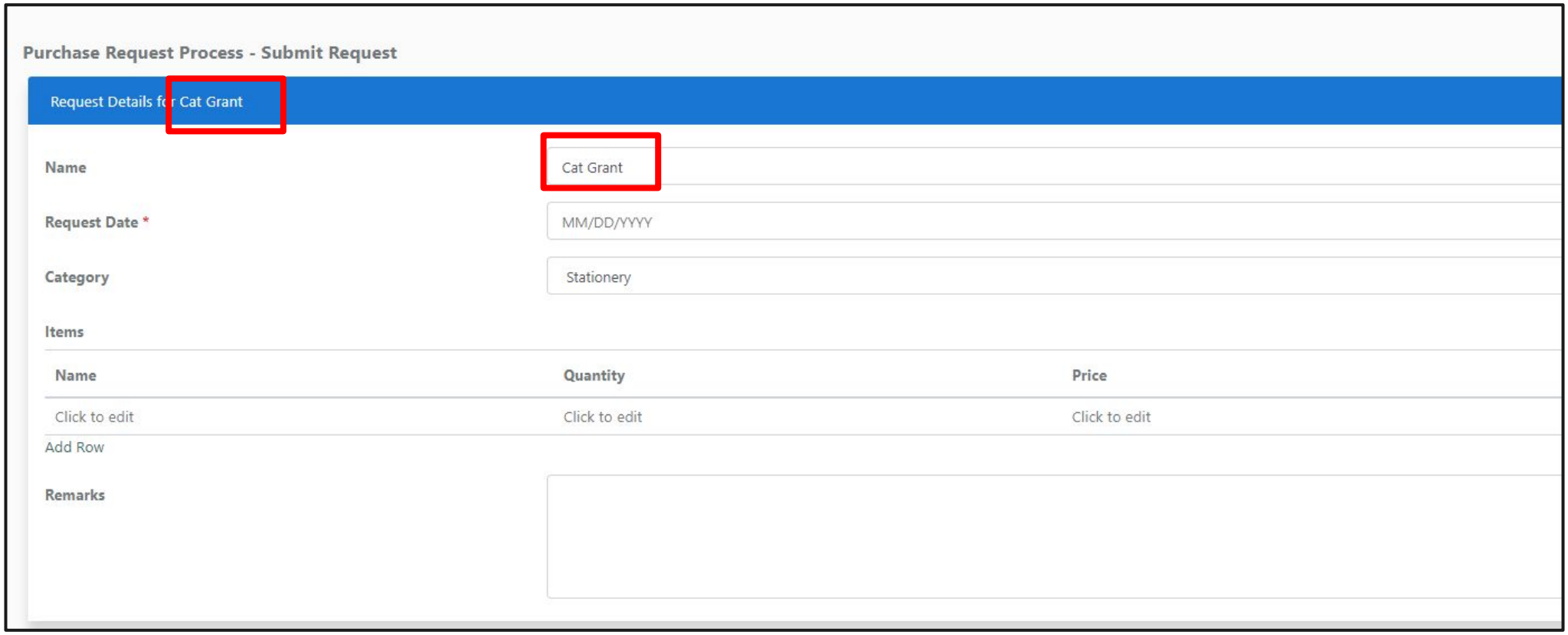


Chapter 2
List of Hash Variables & Its Usages

Joget

Sample Use Case

- How to automatically display requestor's full name in a form?



Sample Use Case

- How to display requestor's full name in task / activity name instead of just "Approve / Reject Request"?

Activity Name	Process Name	Date Created	Service Level Monitor	Due Date
Approve / Reject Request Admin Admin	Purchase Request Process	29-09-2022 09:32 AM	-	-
Acknowledge Approval	Purchase Request Process	29-09-2022 09:30 AM	-	-
Submit Request	Purchase Request Process	29-09-2022 09:25 AM	-	-
Submit Request	Purchase Request Process	29-09-2022 09:24 AM	-	-
Submit Request	Purchase Request Process	29-09-2022 09:24 AM	-	-
Approve / Reject Request admin	Purchase Request Process	29-09-2022 09:23 AM	-	-
Submit Request	Purchase Request Process	29-09-2022 09:15 AM	-	-
Submit Request	Purchase Request Process	29-09-2022 09:15 AM	-	-

Joget

List of Hash Variables

- List Of Joget DX Hash Variables
  - Workflow Assignment Hash Variable
  - Workflow Process Hash Variable
  - Current User Hash Variable
  - Date Hash Variable
  - Environment Variable Hash Variable
  - App Variable Hash Variable
  - Form Data Hash Variable
  - Form Binder Hash Variable
  - App Definition Hash Variable
  - App Message Hash Variable (Internationalization)
  - Performer Hash Variable
  - Request Parameter Hash Variable
  - User Hash Variable
  - Userview Key Hash Variable
  - Workflow Variable Hash Variable
  - Request Hash Variable
  - Platform Hash Variable
  - Users Hash Variable
  - Bean Shell Hash Variable
  - Datalist Hash Variable
  - Expression Hash Variable
  - Report Builder Hash Variable
  - Code Builder Hash Variable

Reference:
https://dev.joget.org/community/display/DX8/Hash+Variable

Joget

Take 10~15 Minutes

Skim through all the hash variables in our Joget Community - Knowledge Base →

https://dev.joget.org/community/display/DX8/Hash+Variable

OR

Go through slides 16 to 44 for the essentials.

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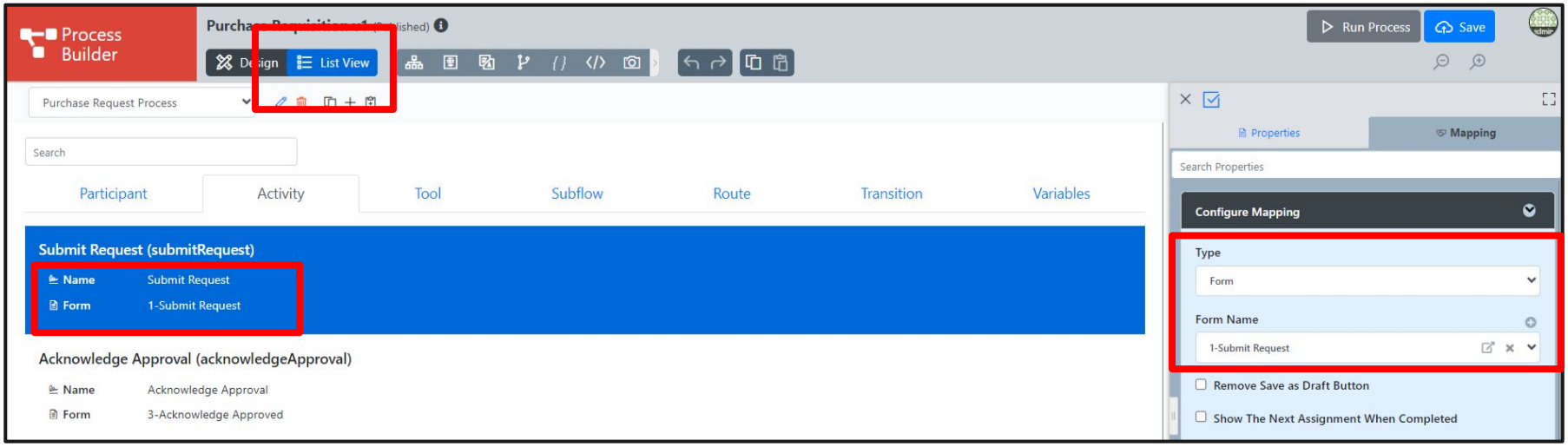
Performer Hash Variable

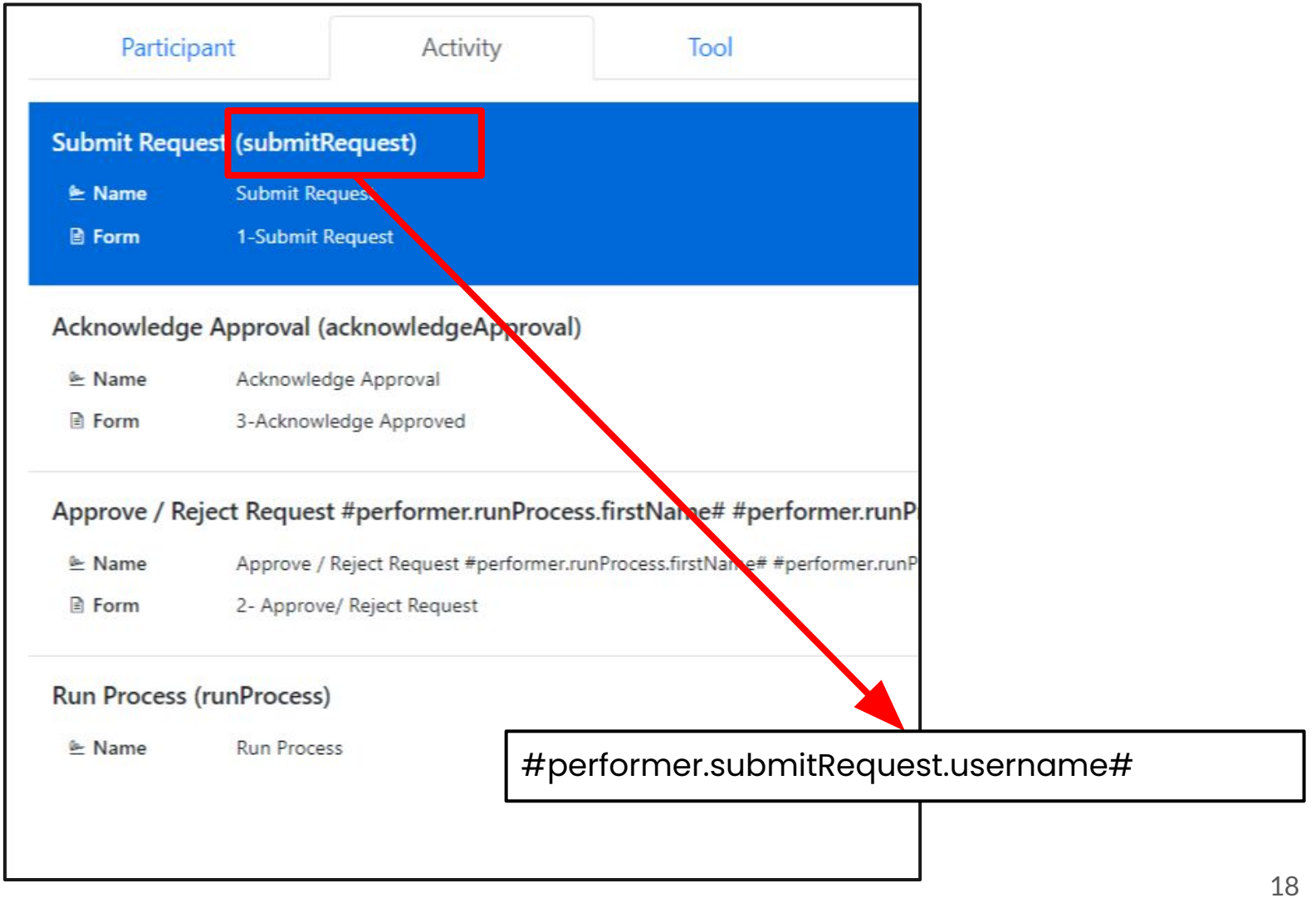
- **Performer**
  - To get **user information of the performer** of an activity.
    - #performer.*activityDefId*.id#,
    - #performer.*activityDefId*.username#,
    - #performer.*activityDefId*.firstName#,
    - #performer.*activityDefId*.lastName#,
    - #performer.*activityDefId*.email#,
    - #performer.*activityDefId*.active#,
    - #performer.*activityDefId*.timeZone#
- Replace "*activityDefId*" with the appropriate activity definition id.

- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-PerformerHashVariable

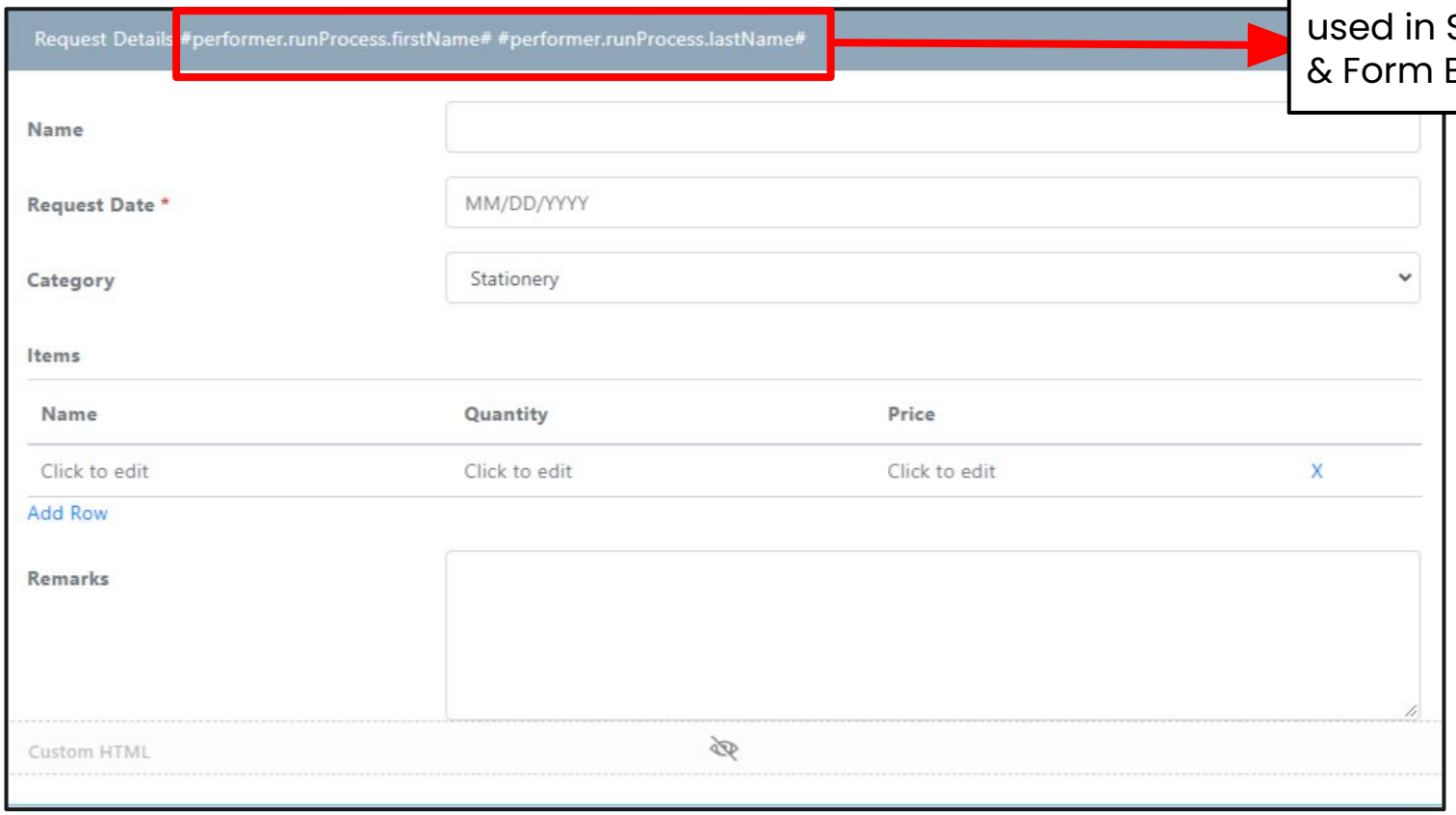
Performer Hash Variable



Using #performer Hash Variable



Using #performer Hash Variable In Form Builder



Hash Variable can be used in Section Name & Form Element

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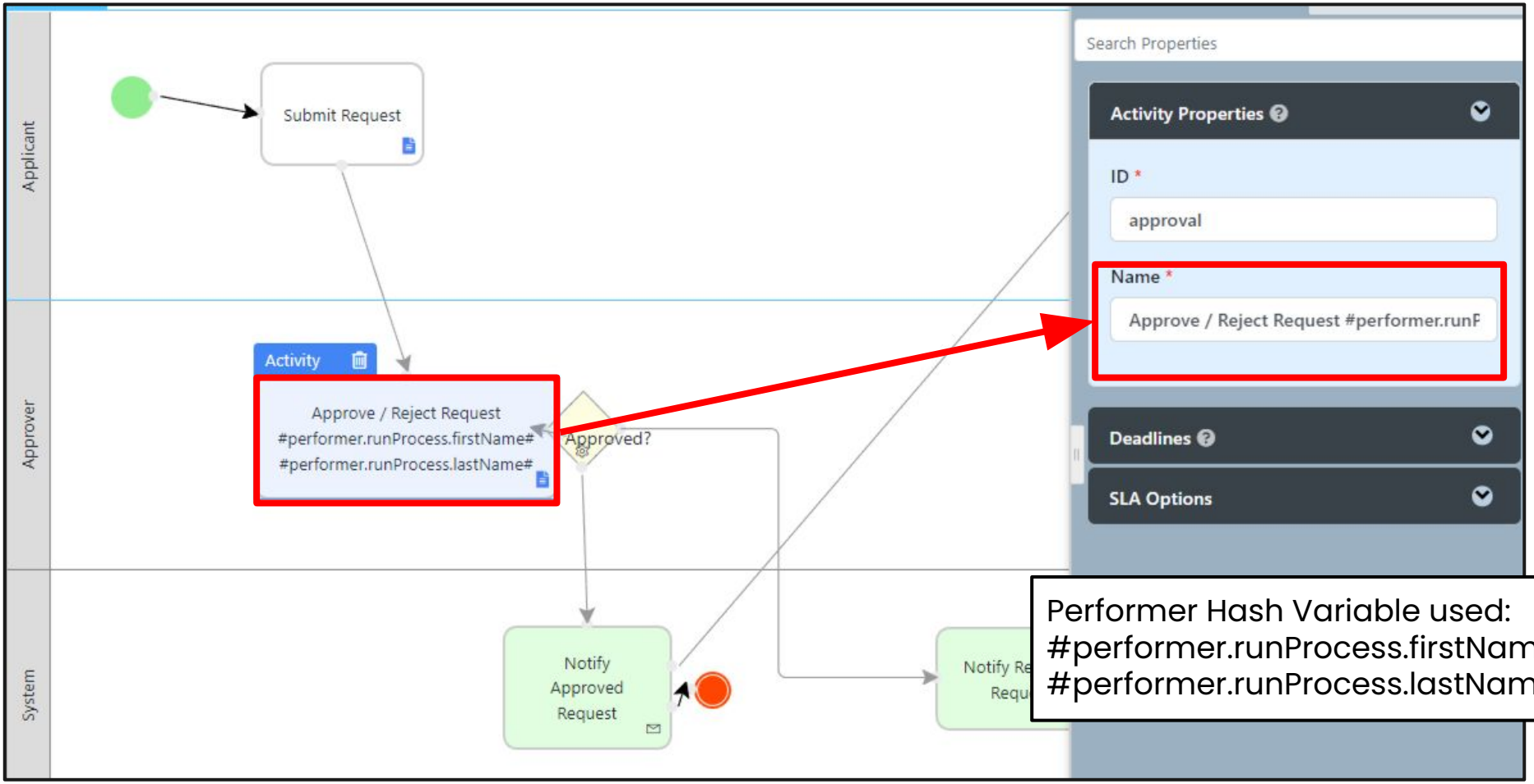
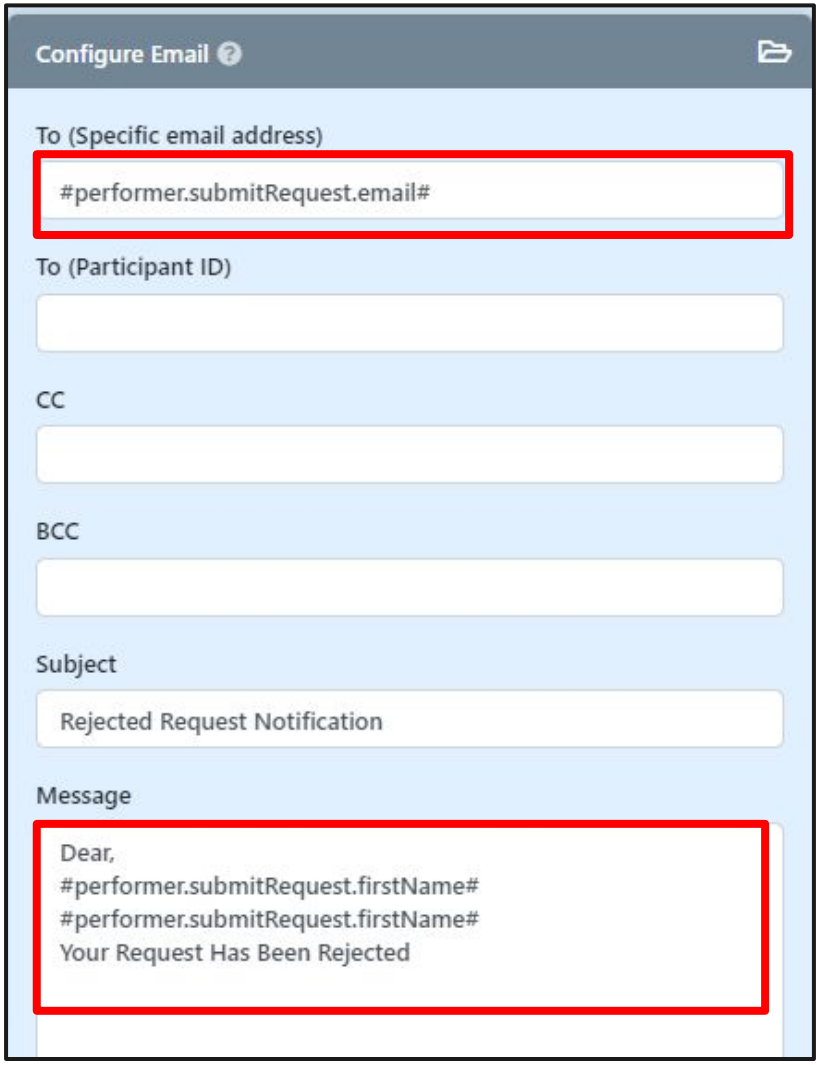
Using #performer Hash Variable In Process Builder



Using #performer Hash Variable In Plugin Configuration



Internationalization Hash Variable

- **Internationalization support on application**
  - Support language localization on application level.
    - #i18n.*keyName*#
- Replace "*keyName*" *with the appropriate message key.*

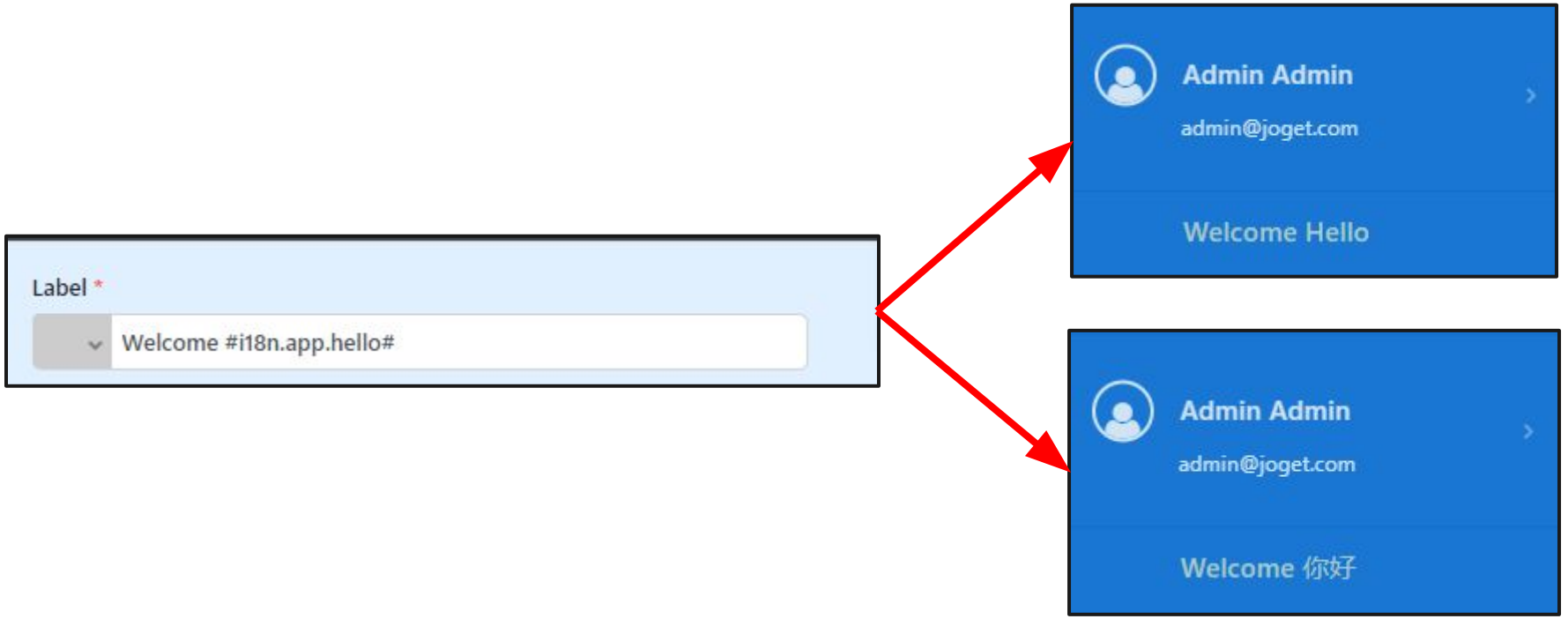
- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-AppMessageHashVariable(Internationalization)

Using #i18n In UI Builder

- The #i18n Hash Variable retrieves values from the **Message** set of the App.
- E.g. Message with key **app.hello** in 2 locales.

Using #i18n In UI Builder

- With the key defined, the hash variable can be used in the UI Builder to dynamically show corresponding value depending on the user's locale.



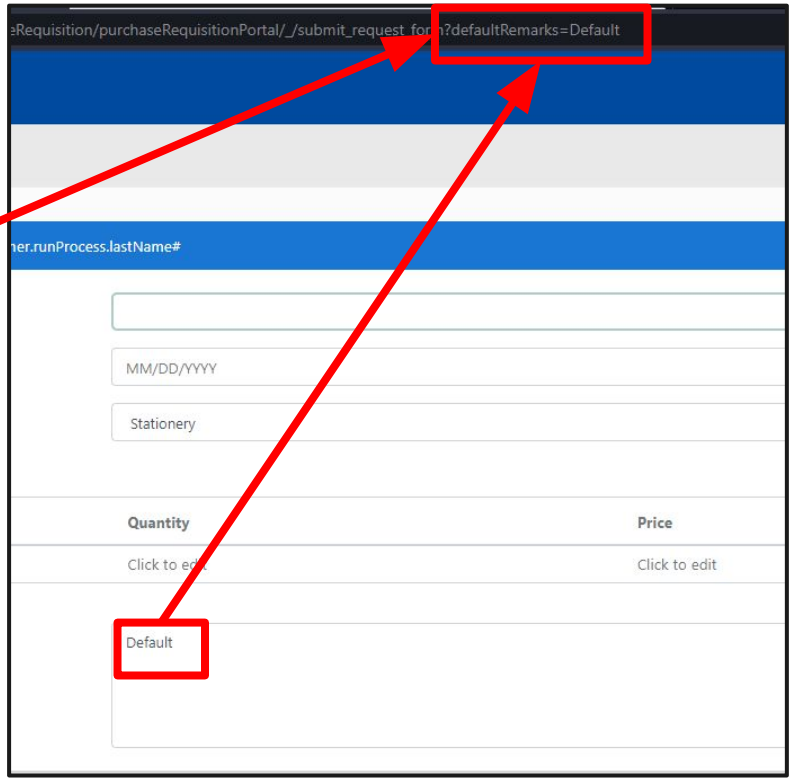
Request Parameter Hash Variable

- **Request Parameter**
  - For accessing request parameters.
    - #requestParam.*parameterName*#
- Replace "*parameterName*" with the appropriate request parameter name.

- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-RequestParameterHashVariable

Using #requestParam In Form Builder

- Useful to pre-populate form field.

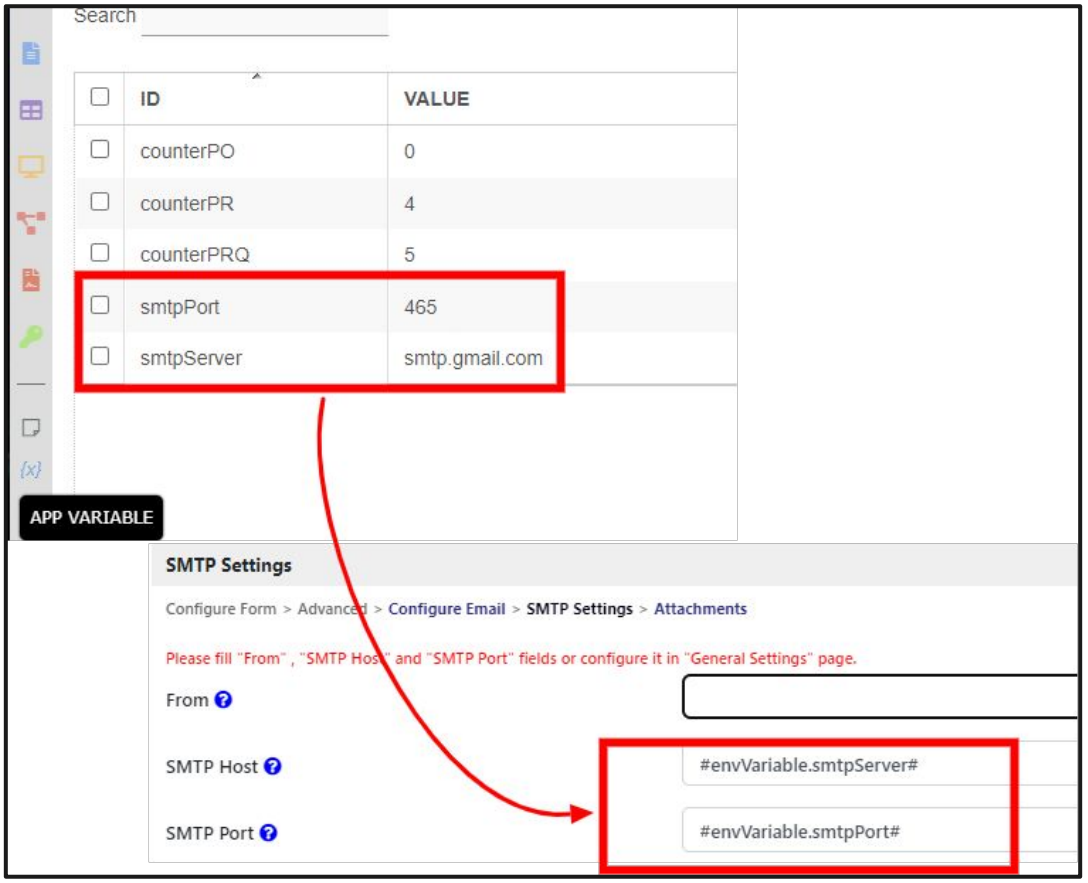


App Variable Hash Variable

- **App Variable**
  - Application level environment variable is typically used to store common or reusable values, such as company contact number.
    - #appVariable.*keyName*#
- Replace "*keyName*" with the appropriate App Variable name.
- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-EnvironmentVariableHashVariable

Using #appVariable In Email Tool

- Use App Variable on Email Tool to ease maintenance.



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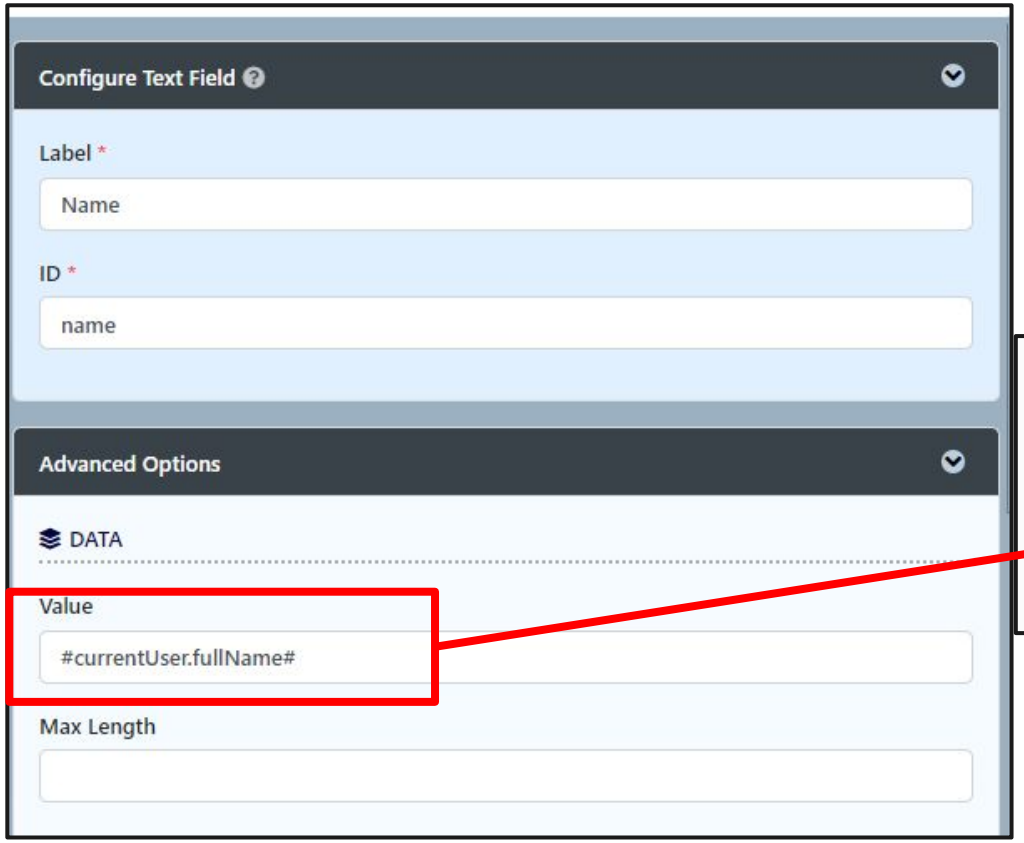
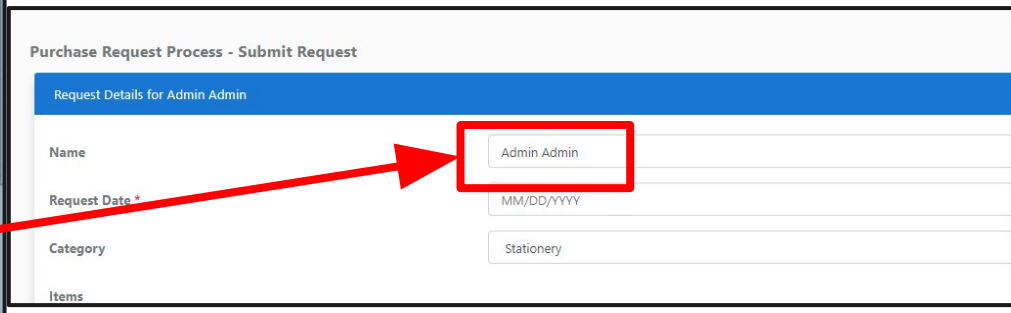
Current User Hash Variable

- **Current User**
  - Retrieve currently logged in user's information.
    - #currentUser.username#
    - #currentUser.firstName#
    - #currentUser.lastName#
    - #currentUser.fullName#
    - #currentUser.email#
    - and many more...
- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-CurrentUserHashVariable

Using #currentUser In Form Builder

- Prepopulate applicant's name in Form





User Hash Variable

- **User**
  - To get **user information** based on **username**.
    - #user.*username*.username#
    - #user.*username*.firstName#
    - #user.*username*.lastName#
    - #user.*username*.fullName#
    - #user.*username*.email#
    - and many more...

- Replace "*username*" with the appropriate user's username.
- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-UserHashVariable

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Using #user Hash Variables

- To get user information based on the

Example:
#user.admin.email#
#user.cat.firstName#
#user.{form.purchase_requests.username}.firstName#
#user.{form.purchase_requests.username}.lastName#

This is a **Nested hash variable** where one can include a hash variable inside another hash variable.
Subsequent level of hash variable is encapsulated with a pair of **curly bracket**.

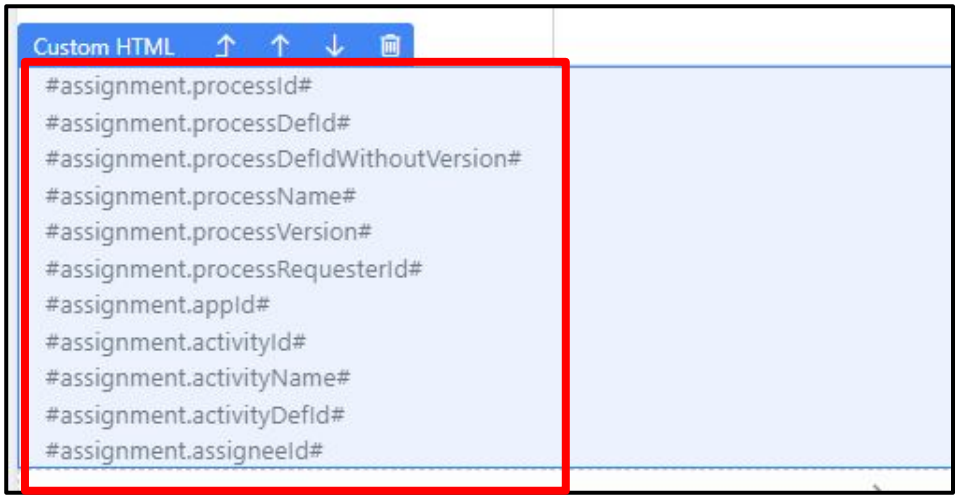
Assignment Hash Variable

- **Assignment**
  - To get **workflow activity information** of the current assignment.
    - #assignment.processId#
    - #assignment.processDefId#
    - #assignment.processDefIdWithoutVersion#
    - #assignment.processName#
    - #assignment.processVersion#
    - #assignment.processRequesterId#
    - #assignment.appId#
    - #assignment.activityId#
    - #assignment.activityName#
    - #assignment.activityDefId#
    - #assignment.assigneeId#

- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-WorkflowAssignmentHashVariable

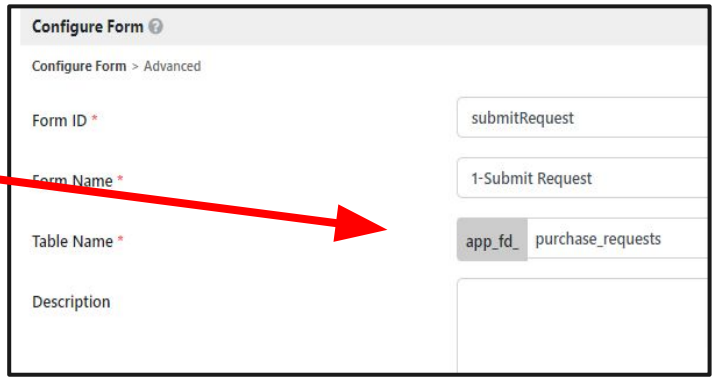
Using #assignment In Form Builder

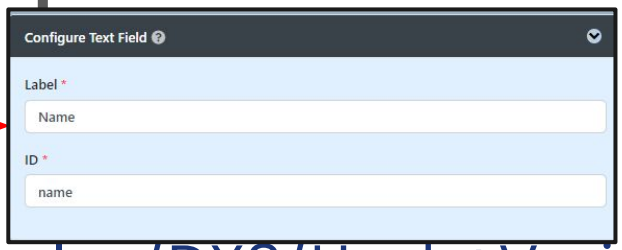
- Retrieve current assignment information.



Form Data Hash Variable

- **Form**
  - To get **data from form table**.
  - #form.*formDataTableName*.*fieldId*#
- Replace "*formDataTableName*" and "*fieldId*" with the appropriate table name and field id.
- **#form.purchase_requests.date_required#**





- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-FormDataHashVariable

Using #form In Email Tool/ Plugin Configuration

Format:
#form.*formDataTableName*.*fieldId*#

- Examples:
  - #form.purchase_requests.name#
  - #form.purchase_requests.request_date#
  - #form.purchase_requests.approval[0001]#
    - To retrieve the field value by specifying a specific record primary key value, 0001.
  - **#form.purchase_requests.approval[{variable.recordId}]#**
    //using **nested Hash Variable** with curly bracket.
    - To achieve the same result like the previous point but by making reference to another Hash Variable for its record primary key value.

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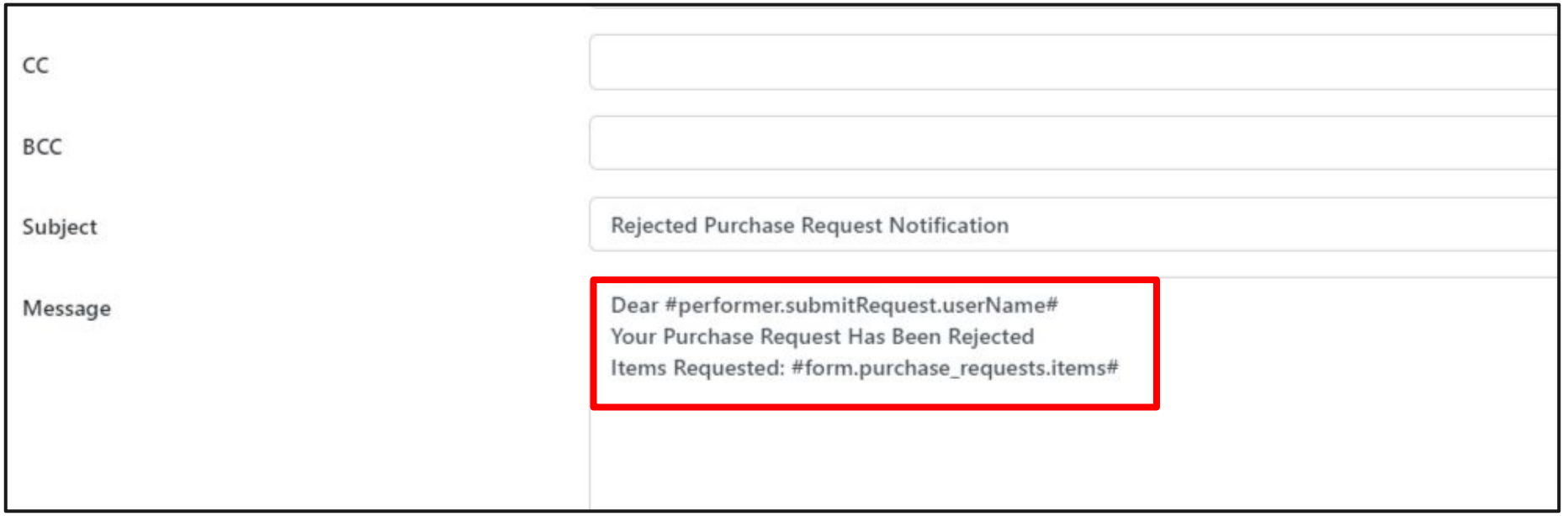
Using #form In Email Tool / Plugin Configuration

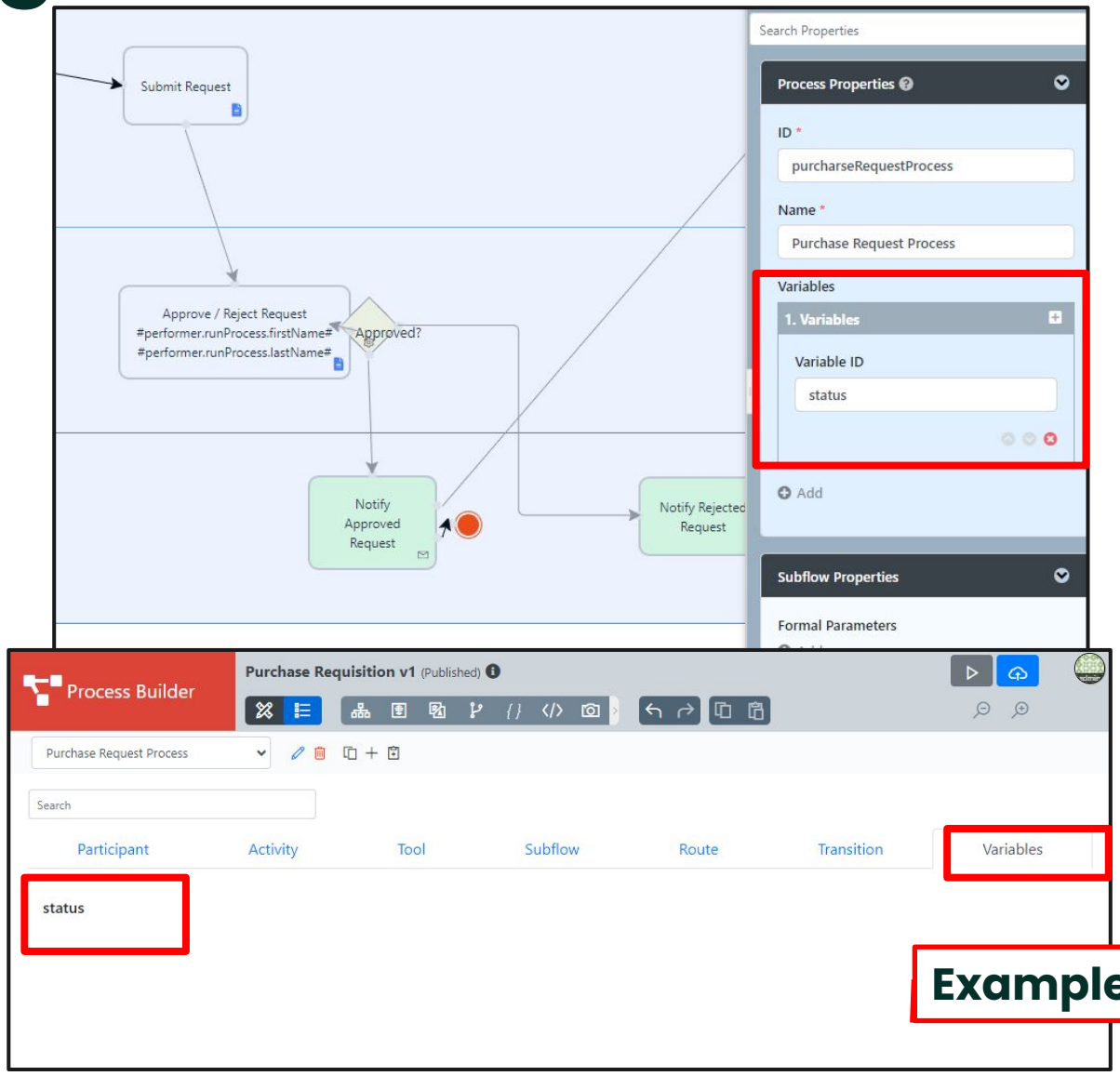


Workflow Variable Hash Variable

- **Workflow Variable**
  - To get the **value of a workflow variable**.
    - #variable.*variableName*#
- Replace "*variableName*" with the appropriate workflow variable name.

- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-WorkflowVariableHashVariable

Using #variable Hash Variable



Example: #variable.status#

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Date Hash Variable

- **Date**
  - To **get date time** according to a specified format.
    - #date.*dateFormat*#
    - #date.[DAY/MONTH/YEAR][+/-]*IntegerValue.dateFormat*#
  - Examples:
    - **#date.h:mm a#** will produce **12:08 PM**
    - **#date.EEE, d MMM yyyy h:mm:ss a#** will produce **Wed, 4 Jul 2009 12:08:56 PM**
- Replace "*dateFormat*" with the appropriate keyword documented in **SimpleDateFormat** class https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html
- Reference: https://dev.joget.org/community/display/DX8/Hash+Variable#HashVariable-DateHashVariable

Joget

Using #date Hash Variables

- Source: https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html

Letter	Date or Time Component	Presentation	Examples
G	Era designator	Text	AD
y	Year	Year	1996; 96
Y	Week year	Year	2009; 09
M	Month in year (context sensitive)	Month	July; Jul; 07
L	Month in year (standalone form)	Month	July; Jul; 07
w	Week in year	Number	27
W	Week in month	Number	2
D	Day in year	Number	189
d	Day in month	Number	10
F	Day of week in month	Number	2
E	Day name in week	Text	Tuesday; Tue
u	Day number of week (1 = Monday, ..., 7 = Sunday)	Number	1
a	Am/pm marker	Text	PM
H	Hour in day (0-23)	Number	0
k	Hour in day (1-24)	Number	24
K	Hour in am/pm (0-11)	Number	0
h	Hour in am/pm (1-12)	Number	12
m	Minute in hour	Number	30
s	Second in minute	Number	55
S	Millisecond	Number	978
z	Time zone	General time zone	Pacific Standard Time; PST; GMT-08:00
Z	Time zone	RFC 822 time zone	-0800
X	Time zone	ISO 8601 time zone	-08; -0800; -08:00

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Using #date Hash Variables

- Example: #date.**EEE, d MMM yyyy h:mm:ss a**#

Java SimpleDateFormat

- Sample Output: **Mon, 28 Dec 2019 11:27:26 AM**

Joget

Using #date Hash Variables

- Example: #date.**DAY+7.EEE, d MMM yyyy h:mm:ss a#**

+7 days

Java SimpleDateFormat

- Sample Output: **Mon, 4 Jan 2020 11:27:26 AM**

Joget

Using #date Hash Variables

- Example: #date.**MONTH-2.EEE, d MMM yyyy h:mm:ss a#**

- Sample Output: **Wed, 28 Oct 2019 11:27:26 AM**

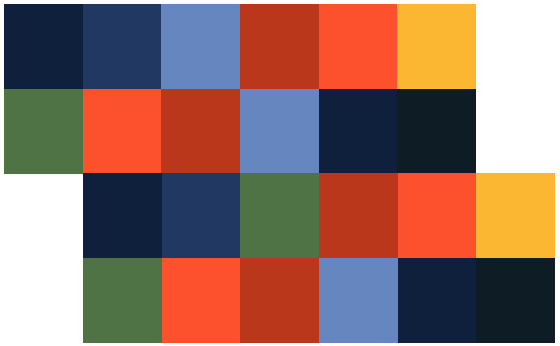
Using #date Hash Variables

- Example: #date.**YEAR+1.EEE, d MMM yyyy h:mm:ss a#**

- Sample Output: **Tue, 28 Dec 2020 11:27:26 AM**

Chapter Review

- Appreciate the flexibility and convenience brought by the Hash Variable.
- Able to apply the Hash Variable feature into app development.



Chapter 3

Nested Hash Variable

Nested Hash Variable

- **Hash Variable** can be used inside another **Hash Variable** to form a **Nested Hash Variable**.
- The syntax for the inner and subsequent Hash Variables is wrapped by a pair of curly bracket '**{**' and '**}**' instead of the usual pair of **#**.
- Example: **#prefix.{**prefix.variableKey**}#**
- There is **no** limit to the depth of the nested variable.

Joget

Example of Nested Hash Variable

- #date.{envVariable.dateFormat}#
- #user.{variable.username}.fullName#
- #form.tableChild.field[{form.tableParent.childId}]#

Chapter Review

- Appreciate the flexibility and convenience brought by the Hash Variable.
- Able to apply the Hash Variable feature into application development.

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Exercise 1

In “Request” form, pre-populate the applicant’s name using hash variable.

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Exercise 2

In "**Notify Rejected Request**" Email Tool, compose the message as the following using hash variable.
Go through the process flow to send out the test email.

Dear **[applicant name]**,

Your request has been **[status]** due to the following reason:-

[rejected reason]

Thank you.

Exercise 3

In Inbox, instead of just showing “Approve / Reject Request”, include the applicant’s name to the example as follow:-

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Exercise 4

Create a new request list that will only show requests that are submitted by the *current logged in user*.

- Create a new List
  Add filter criteria in “Extra Filter Condition”.
  - E.g. (**c_name = 'Cat Grant'**)
  - Replace 'Cat Grant' with the appropriate Hash Variable
- Add the created list into the existing UI

Reference:
https://dev.joget.org/community/display/DX8/Form+Data+Binder

Exercise 5 - Optional

Make use of App Variable to store commonly used settings or attributes

- e.g. Branding in (more than one) form/page.

Then, display this app variable value where applicable in your app.

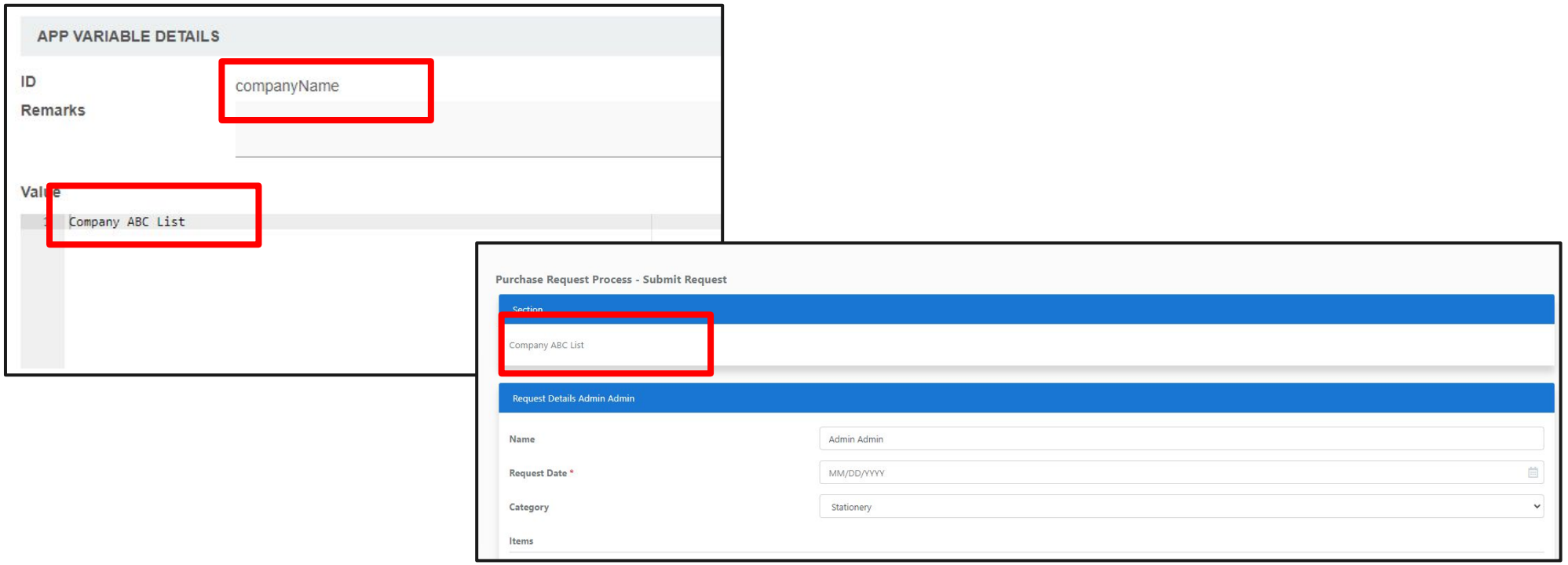
Reference:https://dev.joget.org/community/display/DX8/App+Variable

Exercise 5 - Optional

Branding in (more than one) form/page.

Exercise 5 - Optional

Branding in (more than one) form/page.

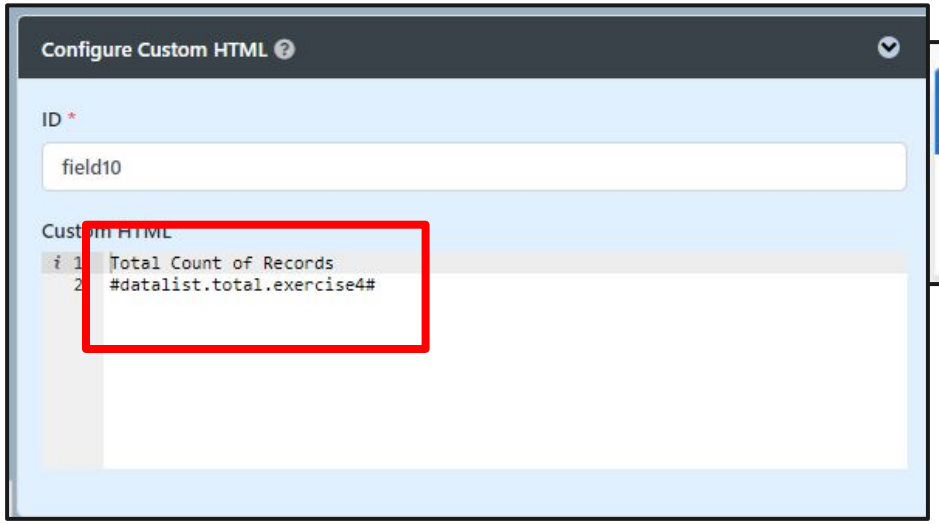


In the form design, drag in a **Custom HTML form element**, use hash variable to obtain the app variable value.

Exercise 6 – Optional

Retrieve the total count of records from a specific List.

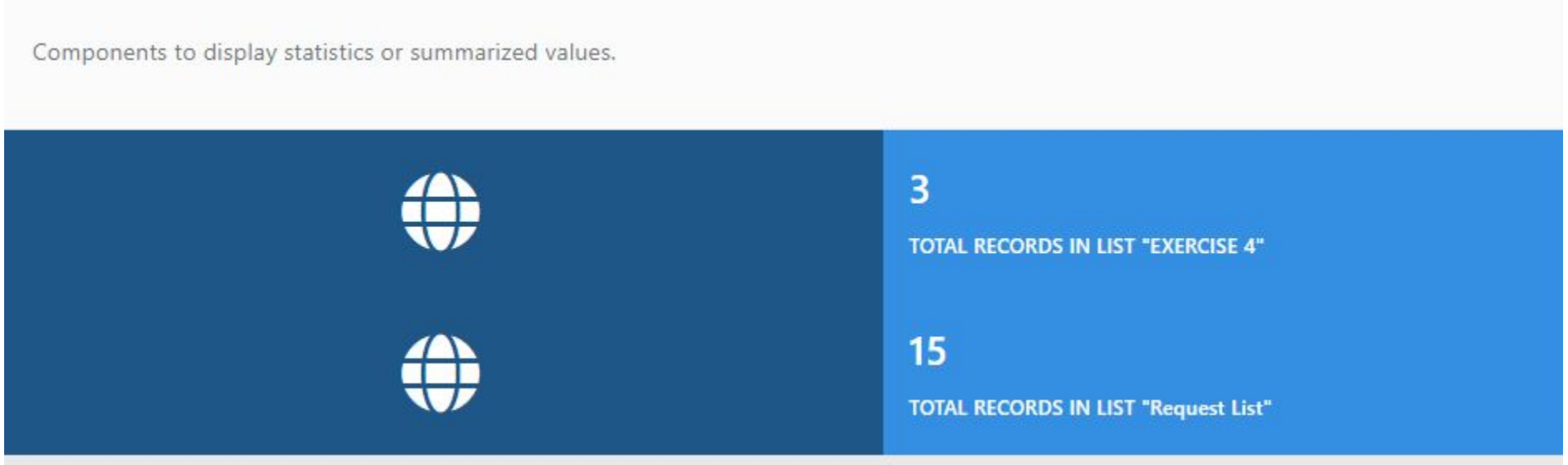
Hint: Do refer to KB!



Exercise 7 – Optional

Retrieve the total count of records from a specific List using **Information Tile**

Hint: Information Tile is a new feature in Joget DX8. Do refer to KB!



Materials

Completed App with the optional exercises can be obtained from the file 9.3.jwa.

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Discussion

- When will the hash variables be parsed?
- Can end user write hash variable when submitting form?
- Can we develop a new hash variable plugin?
- Can we have redundant hash variable prefix? (e.g.: another hash variable plugin with the same prefix as currently available ones)

Joget

Module Review

1. Introduction to Hash Variable
2. List of Hash Variable and Its Usages
3. Nested Hash Variable

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