Advanced MDX: Recipe to Change Report Context

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What is context and why to change it

eazyBI full of stars

3 use cases
All selected values in Rows, Columns, and Pages form the report context. The measures are context responsive.
## Report context

### Issues resolved vs Open issues

<table>
<thead>
<tr>
<th>Priority</th>
<th>Issues resolved</th>
<th>Open issues</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Story</td>
<td>Bug</td>
</tr>
<tr>
<td>Highest</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>10</td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>Medium</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Low</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Lowest</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

**Notes:**
- The table compares issues resolved and open issues across different priorities.
- The highest priority is 'Highest', followed by 'High', 'Medium', 'Low', and 'Lowest'.
- The 'Bug' column indicates specific issue types, with 'High' being highlighted for further analysis.
- The 'Total' column is not applied as it's not relevant to the current comparison.
In the middle of it all stands Measure
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When and why to change context

- **Different object share the same name**
  For example, the Team names match in Tempo and AdvancedRoadmaps specific team fields.

- **The same object represented in two dimensions**
  For example, same users represented in Assignee and Logged by dimensions.

- **Data from different Jira apps or additional sources**
  For example, Sprint and team capacity from Google Sheets.
Hours spent by users

Logged hours by any user or assignee

- Hours spent by Assignee
- Hours spent by Logged by
- Hours spent by Logged by & Assignee
Logged hours by any user or assignee

<table>
<thead>
<tr>
<th>Assignee</th>
<th>Logged by</th>
<th>Hours spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Assignees</td>
<td>All Users</td>
<td>194.00</td>
</tr>
<tr>
<td></td>
<td>David Sand</td>
<td>48.00</td>
</tr>
<tr>
<td></td>
<td>Duncan Snow</td>
<td>67.00</td>
</tr>
<tr>
<td></td>
<td>eazyBI Support admin</td>
<td>11.00</td>
</tr>
<tr>
<td></td>
<td>eazyBI support demo</td>
<td>68.00</td>
</tr>
<tr>
<td>David Sand</td>
<td>All Users</td>
<td>49.00</td>
</tr>
<tr>
<td></td>
<td>David Sand</td>
<td>48.00</td>
</tr>
<tr>
<td></td>
<td>eazyBI support demo</td>
<td>1.00</td>
</tr>
<tr>
<td>Duncan Snow</td>
<td>All Users</td>
<td>59.00</td>
</tr>
<tr>
<td></td>
<td>Duncan Snow</td>
<td>56.00</td>
</tr>
<tr>
<td></td>
<td>eazyBI support demo</td>
<td>3.00</td>
</tr>
</tbody>
</table>
Logged hours by any user or assignee

<table>
<thead>
<tr>
<th>Assignee</th>
<th>Hours spent</th>
<th>Hours spent on assigned issues</th>
<th>Hours spent in any issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Sand</td>
<td>49.00</td>
<td>48.00</td>
<td>48.00</td>
</tr>
<tr>
<td>Duncan Snow</td>
<td>59.00</td>
<td>56.00</td>
<td>67.00</td>
</tr>
<tr>
<td>eazyBI support demo</td>
<td>75.00</td>
<td>64.00</td>
<td>68.00</td>
</tr>
</tbody>
</table>

Hours spent by Logged by users

[Measures].[Hours spent],
-- find user in Logged by dimension matching selected Assignee
[Logged by].[User].GetMemberByKey(
  [Assignee].CurrentMember.Key),
-- ignore selected Assignee
[Assignee].DefaultMember
Logged hours by any user or assignee

<table>
<thead>
<tr>
<th>Assignee</th>
<th>Hours spent</th>
<th>Hours spent on assigned issues</th>
<th>Hours spent in any issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Sand</td>
<td>49.00</td>
<td>48.00</td>
<td>48.00</td>
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<tr>
<td>Duncan Snow</td>
<td>59.00</td>
<td>56.00</td>
<td>67.00</td>
</tr>
<tr>
<td>eazyBI support demo</td>
<td>75.00</td>
<td>64.00</td>
<td>68.00</td>
</tr>
</tbody>
</table>
Key MDX Functions

- **GetMemberByKey**
  - Find someone similar – soul mate

- **DefaultMember**
  - Ignore selected one – ghosting

- **DefaultContext**
  - Ignore everyone with exception – madly in love
Group issues by linked Bug priority

### Default context by “Issues Created”

<table>
<thead>
<tr>
<th>Issue</th>
<th>Bugs</th>
<th>Issue priority</th>
<th>Issue Bugs</th>
<th>Issues created</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA-161</td>
<td>DA-184</td>
<td>Low</td>
<td>DA-185,DA-184,DA-186,DA-187</td>
<td>1</td>
</tr>
<tr>
<td>DA-185</td>
<td></td>
<td>Low</td>
<td>DA-185,DA-184,DA-186,DA-187</td>
<td>1</td>
</tr>
<tr>
<td>DA-186</td>
<td></td>
<td>Low</td>
<td>DA-185,DA-184,DA-186,DA-187</td>
<td>1</td>
</tr>
<tr>
<td>DA-187</td>
<td></td>
<td>Low</td>
<td>DA-185,DA-184,DA-186,DA-187</td>
<td>1</td>
</tr>
<tr>
<td>DA-166</td>
<td>DA-188</td>
<td>Highest</td>
<td>DA-189,DA-190,DA-188</td>
<td>1</td>
</tr>
<tr>
<td>DA-189</td>
<td></td>
<td>Highest</td>
<td>DA-189,DA-190,DA-188</td>
<td>1</td>
</tr>
<tr>
<td>DA-190</td>
<td></td>
<td>Highest</td>
<td>DA-189,DA-190,DA-188</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
## Context change for Bug Priority

### Issues and Bugs Table

<table>
<thead>
<tr>
<th>Issue</th>
<th>Bugs</th>
<th>Issue Priority</th>
<th>Issue Bugs</th>
<th>Issues created by Bug Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Highest</td>
</tr>
<tr>
<td>DA-161</td>
<td>DA-184</td>
<td>Low</td>
<td>DA-185, DA-184, DA-184, DA-186, DA-187</td>
<td>1</td>
</tr>
<tr>
<td>DA-161</td>
<td>DA-185</td>
<td>Low</td>
<td>DA-185, DA-184, DA-184, DA-186, DA-187</td>
<td></td>
</tr>
<tr>
<td>DA-161</td>
<td>DA-186</td>
<td>Low</td>
<td>DA-185, DA-184, DA-184, DA-186, DA-187</td>
<td></td>
</tr>
<tr>
<td>DA-161</td>
<td>DA-187</td>
<td>Low</td>
<td>DA-185, DA-184, DA-184, DA-186, DA-187</td>
<td></td>
</tr>
<tr>
<td>DA-166</td>
<td>DA-188</td>
<td>Highest</td>
<td>DA-189, DA-190, DA-188</td>
<td></td>
</tr>
<tr>
<td>DA-166</td>
<td>DA-189</td>
<td>Highest</td>
<td>DA-189, DA-190, DA-188</td>
<td>1</td>
</tr>
<tr>
<td>DA-166</td>
<td>DA-190</td>
<td>Highest</td>
<td>DA-189, DA-190, DA-188</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

---

*Note: The table shows the issue and bug priority alignment across different issues.*
Change context of measure

Default context of “Issues created”

Calculated measure to change Priority relation

No such relation for Bug priority
1) Iterate through set of Bugs
   Filter() & DescendantsSet()

2) Create new relation for Bug and Priority
   GetMemberByKey() & DefaultContext()

3) Ignore default relation of Priority
   DefaultMember
1 - Set of Bugs

\[
\text{Sum(}
\quad --\text{go through all linked Bugs}
\]
\[
\text{Filter(}
\quad \text{DescendantsSet([Bugs].CurrentMember,[Bugs].[Bugs])},
\quad --\text{check if Bug Priority matches selected Priority}
\]
\[
\text{DefaultContext(}
\quad \text{[Measures].[Issues created]},
\quad \text{[Issue].Issue}.GetMemberByKey(
\quad \quad \text{[Bugs].CurrentMember.KEY}),
\quad \text{[Priority].CurrentHierarchy.CurrentMember}
\quad )) > 0
\]
\[
\)\]
\[
\quad --\text{aggregate linked Bugs ignoring the issue Priority}
\]
\[
\quad ([\text{Measures}.[Issues created]},
\quad \text{[Priority].CurrentHierarchy.DefaultMember})
\]
2 - Create relation with Priority

\[
\text{Sum(} \\
\hspace{1em} \text{--go through all linked Bugs} \\
\text{Filter(} \\
\hspace{2em} \text{DescendantsSet([Bugs].CurrentMember,[Bugs],[Bugs]),} \\
\hspace{3em} \text{--check if Bug Priority matches selected Priority} \\
\hspace{4em} \text{DefaultContext(} \\
\hspace{5em} \text{[Measures].[Issues created],} \\
\hspace{6em} \text{[Issue].[Issue].GetMemberByKey(} \\
\hspace{7em} \text{[Bugs].CurrentMember.KEY),} \\
\hspace{8em} \text{[Priority].CurrentHierarchy.CurrentMember} \\
\hspace{9em} )) > 0 \\
\hspace{1em}), \\
\hspace{1em} \text{--aggregate linked Bugs ignoring the issue Priority} \\
\hspace{2em} ([Measures].[Issues created],} \\
\hspace{3em} [Priority].CurrentHierarchy.DefaultMember) \\
\)
3 - Ignore default relation of Priority

```plaintext
Sum(
    -- go through all linked Bugs
    Filter(
        DescendantsSet([Bugs].CurrentMember,[Bugs].[Bugs]),
        -- check if Bug Priority matches selected Priority
        DefaultContext((
            [Measures].[Issues created],
            [Issue].[Issue].GetMemberByKey(
                [Bugs].CurrentMember.KEY),
            [Priority].CurrentHierarchy.CurrentMember
        )) > 0
    ),

    -- aggregate linked Bugs ignoring the issue Priority
    ([Measures].[Issues created],
    [Priority].CurrentHierarchy.DefaultMember)
)
```
Create new relation

DefaultContext
&
GetMemberByKey

Ignore default relation

DefaultMember
Xray Test runs by Test label

Special Hi! to Xray friends =)
Xray Test runs by Test label

- Test Execution related measure
- Calculated measure
- Test related measure
1) Iterate through set of Tests
   Filter() & DescendantsSet()

2) Create new relation for test runs and Label
   DefaultContext()

3) Ignore default relation of Test run and Label
   DefaultMember
1 - Set of Test

```
Sum(  
    -- go through all Tests
    Filter(
         Descendants([Xray Test].CurrentMember, [Xray Test].[Test]),
        -- check on tests label by Test specific measure
         DefaultContext(
             [Measures].[Xray Tests created],
             [Xray Test].CurrentMember,
             [Label].CurrentHierarchyMember
         ) > 0
    ),
    -- aggregate test runs ignoring label of a Test Execution
    ([Measures].[Xray Test Runs],
     [Label].CurrentHierarchy.DefaultMember
    )
)
```
2 - Create relation with Test Label

```
Sum(
    -- go through all Tests
    Filter(
        Descendants([Xray Test].CurrentMember, [Xray Test].[Test]),
        -- check on tests label by Test specific measure
        DefaultContext((
            [Measures].[Xray Tests created],
            [Xray Test].CurrentMember,
            [Label].CurrentHierarchyMember
        )) > 0
    ),
    -- aggregate test runs ignoring label of a Test Execution
    ([Measures].[Xray Test Runs],
     [Label].CurrentHierarchy.DefaultMember)
)
```
3 - Ignore Label of Test Execution

Sum(
  -- go through all Tests
  Filter(
    Descendants([Xray Test].CurrentMember, [Xray Test].[Test]),
    -- check on tests label by Test specific measure
    DefaultContext((
      [Measures].[Xray Tests created],
      [Xray Test].CurrentMember,
      [Label].CurrentHierarchyMember
    )) > 0
  ),
)

-- aggregate test runs ignoring label of a Test Execution
  ([Measures].[Xray Test Runs],
   [Label].CurrentHierarchy.DefaultMember)
# Xray Test runs by Test label

<table>
<thead>
<tr>
<th>Xray Test runs by Test label</th>
<th>Test Runs created</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Labels</td>
<td>541</td>
</tr>
<tr>
<td>(none)</td>
<td>541</td>
</tr>
<tr>
<td>APP_1</td>
<td>81</td>
</tr>
<tr>
<td>APP_2</td>
<td>9</td>
</tr>
<tr>
<td>demo</td>
<td>164</td>
</tr>
<tr>
<td>label_t</td>
<td>307</td>
</tr>
<tr>
<td>label_x</td>
<td>153</td>
</tr>
<tr>
<td>label_z</td>
<td>30</td>
</tr>
<tr>
<td>testing</td>
<td>81</td>
</tr>
</tbody>
</table>
The measure is the core of the context!

Balance the connections in calculated measure

Create new relation

Ignore default relation
Work on relationships. It ain't eazy but it is rewarding.

Every article on psychology I have read.
Questions?

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