

OpenRIMS Data Visualization

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Motivation

The OpenRIMS database provides views dedicated to use by an external software tool for:

- analytic processing and visualization
- building of custom UX
- querying OpenRIMS data

The reason to introduce special views instead of direct access to the data entered by users is querying performance and uniformity. The content of the views is a result of the ETL¹ process runs. The process runs daily by schedule or by demand in emergency cases.

To ensure that this manual is right for you, please, check the following:

1. OpenRIMS awareness
2. SQL language ability
3. MySQL RDBMS knowledge
4. Direct access to the OpenRIMS database that contains test or real data

¹ Extract, Transform, Load

OpenRIMS Data

OpenRIMS is a regulatory information management system. The core regulatory information data in OpenRIMS is an application to get a permit to do activities related to medical products and devices.

An applicant should submit the application to the National Regulatory Authority (NRA) using OpenRIMS software. The NRA uses OpenRIMS software to review the application. During the review, an application may be approved or declined.

An approved application may be renewed, inspected, revoked, modified, and de-registered.

The OpenRIMS database consists of two parts:

- Data Collecting tables that are efficient for data input, however inefficient for data publishing
- Data Publishing tables that are efficient for data publishing, however, can't be used for data input

OpenRIMS publishes:

- **Application data** for various external and internal registers, i.e., approved medicinal products, licensed retail pharmacies, etc.
- **NRA KPI data** for internal NRA Key Performance Indicators, i.e. departments, and employees' workloads; quantities of approved and rejected applications; durations of review – average, minimum, maximum, etc.

The content of the Data Publishing tables is a result of the ETL² process built-in OpenRIMS software. However, the direct usage of the Data Publishing tables by the external software is discouraged because of cumbersome SQL queries

The OpenRIMS database provides views built on the Data Publishing tables to simplify data reporting and exchange.

² Extracting, Transforming, Loading

Data Publishing Views

Application Data

Application Data views collect general application data, classifiers, links, and events. The prospected usage is various registers, i.e., “Medicinal Products Allowed For Marketing”, etc.

To avoid an enormous amount of data transferring³, the Application Data is splatted into specialized views that can be joined by Lang and ApplicationID fields.

pv_applications

This view publishes basic application data. A tuple consists of such dimensions:

Dimension	Purpose	Example
Lang	<ol style="list-style-type: none"> 1. Filtering all dimensions by language 2. Key to joining other views 	EN_US
ApplicationID	<ol style="list-style-type: none"> 1. Calculating metrics, e.g. quantity of applications 2. Publishing a link to the application data 3. Key to joining other application views 	734904
ApplicationPrefLabel	Publishing in reports. Can't be used for metric calculations	Aspirin
ApplicationURL	Filtering and grouping by application type	medicinal.product.marketing
ApplicationDescription	To publish a detailed description of the application type	A Marketing Authorization Application is an application submitted by a drug manufacturer seeking marketing authorization, which is permission to bring a medicinal product to market.

³ The data contains all dimensions for an application may contain hundreds of records. The BI analysis rarely requires all dimensions. Additionally, the external software limitations should be taken into account. For example, the key limits for the MySQL connector in Looker Studio are 150,000 rows per query, 5,000 rows per Explore page, and up to 200 columns with a default of 50 columns.

Dimension	Purpose	Example
State	Filtering and grouping by application state. Possible values are: DEREGISTERED – no longer valid, REVOKED – temporary or permanently suspended by NRA, NOTSUBMITTED – prepared by an applicant, but not submitted yet, ONAPPROVAL – NRA is reviewing this application, ACTIVE – the application subject is permitted, LOST – something wrong with this application because of software error	ACTIVE
ApplicantEmail	1. Access control 2. Filtering and grouping by applicants 3. Calculating metrics, e.g. count applications by an applicant	nobody@neverland.com

pv_classifiers

This view publishes the user's selections in the “dictionaries” or “droplist” input components in electronic forms of application and application review activities.

A tuple consists of such dimensions:

Dimension	Purpose	Example
Lang	Join to pv_applications, or pv_links	EN_US
JoinID	Join to pv_applications, or pv_links	734904
ClassifierID	Unique ID of the classifier value. Can be used to calculate metrics related to the classifier, e.g. count of “Ove The Counter” products	34982
ClassifierPrefLabel	Publish a value of the classifier. Do not use for metric	Over The Counter
ClassifierAltLabel	Publish GIS coordinates, if one	30.060622428474737; 81.61995133464052

Dimension	Purpose	Example
ClassifierPath	The comma-separated list of strings represents the full value of the classifier. The classifier name is included. For publishing only	Over The Counter, Product Category
ClassifierURL	The URL of the classifier. 1. Filtering and grouping by a classifier 2. Counting metrics, e.g. count of classifier usage	dictionary.product.category
ClassifierLevel	A dictionary that implements a classifier may be hierarchical. The level is a number in a hierarchy backward. 0 is the latest selected, 1 is the previous hierarchy level, etc. The latest level is the name of the classifier. Only for filtering	Level 0 – Over The Counter Level 1 – Product Category Or for address: Level 0 – Donaldsonville Level 2 - Ascension Parish Level 3 – Louisiana Level 4 - USA
ClassifierPageURL	The page in the electronic form on which the classifier is available. It can be used for filtering	medicinal.product.marketing.classifiers
ClassifierVar	The name of the classifier field on the electronic form page. It can be used for filtering	product_category

pv_links

This view publishes data defined by “links” and “persons” components placed on the application electronic form. The “links” component allows referring from this application to other applications, e.g. the registered manufacturers of a medicinal product. The “persons” component allows to inclusion into an application of a set of data records created using the same electronic form, e.g., a list of clinical trials, a list of authorized persons, etc.

A tuple consists of such dimensions:

Dimension	Purpose	Example
Lang	Join to pv_applications	EN_US
ApplicationID	Join to pv_applications	39769
LinkURL	To filter links by link URL. A link URL is a unique identifier of a linked application or electronic form	pharmacy.site.owner.person
LinkPrefLabel	To publish a preferred label for the link	Owner 1
LinkApplicationPageURL	The page in the electronic form on which links are available. It can be used for filtering	ws.site.owners
LinkVariable	The name of the “links” field on the page. It can be used for filtering	manufacturers
LinkIdentifierURL	A link to the external application may be identified, using a classifier. For example, the active ingredient and final product manufacturers may be different. This dimension can be used for filtering by the link identification classifiers	dictionary.manufacturer.type
LinkIdentifier	A string value of the identifier. For publishing only	Active Ingredient, Manufacturer

pv_events

This view publishes data defined by “schedulers” and “registers” components placed on the application electronic form, or on the application review workflow electronic forms. The “schedulers” component defines renewal, inspections, and other routine events for an application. The “registers”

component defines registration dates and assigned numbers, i.e. application reference numbers, certificate numbers, registration dates, registration expiration dates, etc.

The language (Lang) is not appropriate for the events.

Dimension	Purpose	Example
ApplicationID	Join to pv_applications	39769
EventURL	To filter links by Event URL. An Event URL is a unique identifier of a register or a scheduler	ws.site.renewal or ws.site.certificate
EventPrefLabel	Register number for publishing	12/24-U
EventDate	Registration date or Routine Event assigning date. It may be used for publishing or filtering. The format is ISO date string	2024-02-10
NextEventDate	Next routine Event date or certificate expiration date. It may be used for publishing or filtering. The format is ISO date string	2026-03-12
EventPageURL	The page on which “schedulers” or “registers” are available. It may be the application’s form page or workflow activity data page. The preferred usage is filtering	pharmacy.certificate.register
EventVariable	The name of the “schedulers” or “registers” field on the page. It can be used for filtering	certificate

pv_literals

Application electronic form and application review activity electronic form may contain text, date, number, and logical fields. These fields are available using the pv_literals view.

Dimension	Purpose	Example
Lang	Join to pv_applications	EN_US
ApplicationID	Join to pv_applications	39769
PageURL	URL of an application form or application review activity form. It can be used for filtering.	retail.site.owned.pvt
Variable	The name of a field. It can be used for filtering.	streetname
Value	The value of a field. It can be used for publishing or filtering	Marble Str 12

NRA KPI Data

The NRA Key Performance Indicators include but are not limited to:

- Minimal, maximal, and average days to process applications
- Quantities of accepted and declined applications
- Territory cast of the applications
- Workload for NRA departments and employees

Additionally, this data may be used for customized To Do and monitoring lists.

pv_workflows

A workflow is a sequence of activities involved in moving from the beginning to the end of an NRA working process. OpenRIMS allows such types of workflows

1. Application review workflows for initial application processing. The results of them may be approved or declined application. While workflow processing it is possible to interrupt the workflow execution on any activity and return the application to the applicant to fix application data.
2. Application renewal workflows allow routine action to renew the expired registration
3. Inspection workflows allow validate application data and the collection of additional data
4. Modification workflows allow making non-sufficient changes in the applications
5. De-registration workflows that allow applicants to revoke applications
6. Application suspending workflows that allow NRA to suspend an application temporarily or permanently

The `pv_workflows` view allows

- to determine the minimal, maximal, and average time to process applications in the NRA
- to calculate various quantities of workflows passed or on-go

Dimension	Purpose	Example
Lang	Language for filtering	EN_US
WorkflowGroupURL	The URL of the dictionary contains workflows of the same group. It can be used for filtering	dictionary.guest.applications
WorkflowGroupName	The name of the dictionary contains workflows of the same group. It can be used for publishing	Initial Applications
WorkflowURL	URL of the Workflow Configuration. It can be used for filtering. Unlike Workflow Group, there is no human-readable name for a Workflow Configuration. Also, the Workflow Configuration can be shared for many similar workflows	application.ws.site
WorkflowPrefLabel	Human readable name of a Workflow Application. For publishing	Domestic Wholesaler Authorization
WorkflowID	Unique ID of a workflow ran. It can be used for calculating metrics, such as are quantity of workflows	117639
WorkflowStartedAt	Date a workflow has been started. It can be used mainly for filtering	2022-04-13
WorkflowLastedTo	Date to which workflow is lasted. For not finished workflows – today, for finished – the date when the last activity has been completed or canceled	2022-04-16

`pv_activities`

An activity is an atomic job that is completed or completed by an executor. An executor may be an NRA employee or an applicant. The outcome of an activity execution may be one of:

- Canceling the activity
- Running the next activity
- Returning application to the applicant for correction
- Approve the application
- Decline the application

The pv_activities view allows:

- Calculate the workload and performance of employees and NRA departments
- Calculate the statistic of successful/unsuccessful application processing

Dimension	Purpose	Example
Lang	Language for filtering	EN_US
WorkflowGroupURL	The URL of the dictionary contains workflows of the same group. It can be used for filtering	dictionary.guest.applications
WorkflowGroupName	The name of the dictionary contains workflows of the same group. It can be used for publishing	Initial Applications
WorkflowURL	URL of the Workflow Configuration. It can be used for filtering. Unlike Workflow Group, there is no human-readable name for a Workflow Configuration. Also, the Workflow Configuration can be shared for many similar workflows	application.ws.site
WorkflowPrefLabel	Human readable name of a Workflow Application. For publishing	Domestic Wholesaler Authorization
ActivityURL	URL of the activity. It can be used for filtering	
ActivityName	Human readable name of the activity. For publishing	Screening
ActivityWorkflowID	Unique ID of a workflow ran. It can be used for calculating metrics, such as are quantity of workflows as well as a link to workflows in pv_workflows	86891
ApplicationID	Unique ID of an application served by this activity. It can be used for link to ApplicationID field in other views or for various counters	34136
ActivityID	Unique ID of the activity. It can be used for various counters	86898
ActivityHistoryID	Unique ID of the record in history table. This table manages activities in the OpenRIMS. It can be used only to build hyperlinks to OpenRIMS User Interface in the external software	477

Dimension	Purpose	Example
ActivityStarredAt	Date an activity has been started. It can be used mainly for filtering	
ActivityLastedTo	Date to which an activity is lasted. For not finished workflows – today, for finished – real date and time when the last activity has been completed or canceled	2022-03-03
ActivityCompleted	Is this activity completed? It can be used mainly for filtering	2022-03-03
ActivityOutcome	Outcome code of this activity. Possible values are NO, APPROVE, and DECLINE. It can be used for filtering and publishing	DECLINE
ActivityDepartmentID	Unique ID of an NRA department that has completed(ing) this activity. Can be used for various department-related counters. For activities that are assigned to an applicant; this parameter is zero	2184
ActivityDepartmentName	The human-readable name of the department is identified by the ActivityDepartmentID. For activities that are assigned to an applicant; this parameter is – (dash)	Department of Drug Administration
ActivityExecutorEmail	The email of the executor. It can be used for access control, filtering, etc.	el-coyote@headless.horseman.mr
ActivityExecutorName	The name of an executor. For applicants, this parameter is – (dash)	Miguel Diaz

Details data publishing

Sometimes it will be necessary to publish full application data from the external application. For example, the approved medicinal product details should be publicly available.

The OpenRIMS software allows public available electronic to publish the public available details. This form is accessible by the link that looks like

<https://pharmadex.irka.in.ua/public#publicpermitdata/%7B%22permitDataID%22:732262%7D>

Where:

- pharmadex.irka.in.ua is the address of the OpenRIMS server
- 732262 is the content of the ApplicationID field

This link will publish only publicity available data, in case there is no applicant or NRA employee login in the current browser.

Annex 1. Application Data. SQL examples

All examples below are for demo and learning purposes only.

Applications by provinces (pv_classifiers)

This example demonstrates the usage of the classifiers. The address is a kind of classifier.

```
SELECT *
FROM pv_applications a
join pv_classifiers c on c.Lang=a.Lang and c.JoinID=a.ApplicationID
where c.ClassifierURL='dictionary.admin.units' and c.ClassifierLevel=2
```

Owners of pharmacies (pv_links)

This example demonstrates the usage of the links. A pharmacy has one or more owners. The owner's registration data is managed by component "persons" placed on the page "site.owners.persons" of the application. Suppose, we are interested only in the currently authorized pharmacies.

```
SELECT a.Lang, a.ApplicationPrefLabel as 'pharmacy', l.LinkPrefLabel as 'owner'
FROM pv_applications a
join pv_links l on l.Lang=a.Lang and l.ApplicationID=a.ApplicationID
where
l.LinkApplicationPageURL='site.owners.persons'
and a.State='Active'
```

Registered pharmacies (pv_events)

This example demonstrates the usage of events. Any registered pharmacy has a registration certificate. A registration certificate is an event that contains the registration number, registration date, and expiration date.

```
SELECT a.Lang, a.ApplicationPrefLabel as 'pharmacy', e.EventPrefLabel as 'certificate',
e.EventDate as 'registeredAt', e.NextEventDate as 'ExpiredAt'
FROM pv_applications a
join pv_events e on e.ApplicationID=a.ApplicationID
where
a.State='Active'
and e.EventURL like '%certif%'
```

Phone numbers (pv_literals)

This example demonstrates the usage of the text field placed on the first page of the application form.

```
SELECT a.Lang, a.ApplicationPrefLabel as 'pharmacy', l.`Value` as 'phone_number', l.*
FROM pv_applications a
join pv_literals l on l.Lang=a.Lang and l.ApplicationID=a.ApplicationID
where
a.State='Active'
and l.Variable like '%phone%'
```

The full Applications Dataset (all views)

This example demonstrates how to link all application's views to create the full data set. Indeed, this query will be extremely slow.

```
SELECT *
FROM pv_applications a
join pv_classifiers c on c.Lang=a.Lang and c.JoinID=a.ApplicationID
join pv_links ln on ln.Lang=a.Lang and ln.ApplicationID=a.ApplicationID
join pv_events e on e.ApplicationID=a.ApplicationID
join pv_literals l on l.Lang=a.Lang and l.ApplicationID=a.ApplicationID
```


Annex 2. NRA KPIs. SQL examples

The average duration of workflow processing (pv_workflows)

This example demonstrates the calculation average time of a workflow executed by NRA. Please, pay attention that the same workflow can be used for many processes.

```
SELECT Group_concat(distinct WorkflowPrefLabel) as 'Processes',  
Round(avg(DATEDIFF(WorkflowLastedTo,WorkflowStartedAt)),0) as 'Average (days)'  
FROM pdx2.pv_workflows  
Where Lang='EN_US'  
Group By WorkflowURL
```

Quantity of workflow started in 2022 (pv_workflows)

This example demonstrates the approach to calculate the quantity of application workflows, using unique IDs of them.

```
SELECT Group_concat(distinct WorkflowPrefLabel) as 'Processes',  
count(distinct WorkflowID) as 'Quantity'  
FROM pdx2.pv_workflows  
Where Lang='EN_US'  
and Year(WorkflowStartedAt)=2022  
Group By WorkflowURL
```

Approved and declined applications (pv_activities)

This example demonstrates the usage of Activity outcomes and activity IDs to calculate the result of the processes passed.

```
SELECT  
WorkflowPrefLabel as 'workflow',  
ActivityOutcome as 'outcome',  
count(distinct ActivityID) as 'workflows'  
FROM pv_activities  
where  
ActivityCompleted  
and ActivityOutcome in ('APPROVE', 'DECLINE')  
group by WorkflowPrefLabel, ActivityOutcome
```

Departments workload (pv_activities)

This example demonstrates the usage of the ActivityCompleted dimension to calculate the current workload in activities or jobs.

```
SELECT
ActivityDepartmentName as 'Department',
count(distinct ActivityID) as 'jobs'
FROM pv_activities
where
!ActivityCompleted
and Lang='EN_US'
group by ActivityDepartmentName
```

NRA employee's performance (pv_activities)

Let's suppose that the performance of an employee is the quantity of jobs (activities) completed in a year.

```
SELECT
ActivityExecutorName as 'Employee',
Year(ActivityLastedTo) as 'year',
count(distinct ActivityID) as 'jobs completed'
FROM pv_activities
where
ActivityCompleted
and Lang='EN_US'
and ActivityDepartmentID != 0
group by ActivityExecutorName,Year(ActivityLastedTo)
```

Annex 3 Google Looker implementation of the Customized To-Do list

Motivation

The OpenRIMS provides a general To-do list for NRA employees and Applicants. The list contains no completed activities assigned to the current user.

The information in the list is uniform for any application and, thus can't contain any application-specific data, such are classifiers, links, events, literals.

Suppose, the NRA for pharmacy registration application demands administrative unit data in the To-do list to have the possibility of sorting and filtering applications by district. This custom To-do list can be implemented using the external application - Google Looker Studio and Data Publishing View provided. It is presumed, that the NRA Employee uses Google Login to access data.

The example below has been simplified to explore the approach better.

Creation of the data set using SQL⁴

Specifications

The data set should contain only activities related to the pharmacy registration process. Fields are:

- Language for filtering (pv_activities)
- Date when an activity has been assigned (pv_activities)
- Pharmacy District (pv_classifiers)
- Pharmacy name (pv_applications)
- Activity name (pv_activities)
- Activity Executor email to implement the access control (pv_activities)
- ActivityHistoryID to implement a link to the job (pv_activities)

These fields are in pv_applications and pv_activities views. Let's create the SQL step-by-step

Selection of pharmacy registration activities that are not completed

```
SELECT *  
FROM pv_activities a  
where  
a.WorkflowURL='application.retail.site.owned.persons'  
and !a.ActivityCompleted
```

⁴ It is possible to use the Blended Data feature in the Google Looker Studio instead

visualization.google.looker

Joining the district

The application's particularities like ClassifierURL, ClassifierVar, and ClassifierLevel have been added. These particularities may not work for other types of applications.

```
SELECT *
FROM pv_activities a
join pv_classifiers c on c.JoinID=a.ApplicationID and c.Lang=a.Lang
where
a.WorkflowURL='application.retail.site.owned.persons'
and !a.ActivityCompleted
and c.ClassifierURL='dictionary.admin.units'
and c.ClassifierLevel=0
and c.ClassifierVar='address'
```

Joining the name of the pharmacy

There is nothing particular here.

```
SELECT *
FROM pv_activities a
join pv_classifiers c on c.JoinID=a.ApplicationID and c.Lang=a.Lang
join pv_applications aa on aa.ApplicationID=a.ApplicationID and aa.Lang=a.Lang
where
a.WorkflowURL='application.retail.site.owned.persons'
and !a.ActivityCompleted
and c.ClassifierURL='dictionary.admin.units'
and c.ClassifierLevel=0
and c.ClassifierVar='address'
```

Projection the fields

```
SELECT
a.Lang as 'Lang',
a.ActivityStartedAt as 'Assigned',
c.ClassifierPrefLabel as 'District',
aa.ApplicationPrefLabel as 'Name',
a.ActivityName as 'Activity',
a.ActivityExecutorEmail as 'email',
a.ActivityHistoryID as 'activityHistoryID'
FROM pv_activities a
join pv_classifiers c on c.JoinID=a.ApplicationID and c.Lang=a.Lang
join pv_applications aa on aa.ApplicationID=a.ApplicationID and aa.Lang=a.Lang
where
a.WorkflowURL='application.retail.site.owned.persons'
and !a.ActivityCompleted
and c.ClassifierURL='dictionary.admin.units'
and c.ClassifierLevel=0
and c.ClassifierVar='address'
```

The data set

Lang	Assigned	District	Name	Activity	email	activityHistoryID
EN_US	2021-10-23	Bhaktapur Municipality	Pharmacy # 20211023-1	Finalization	alex.kurasoff@gmail.com	2042
pt_PT	2021-10-23	भक्तपुर नगरपालिका	Pharmacy # 20211023-1	Finalization	alex.kurasoff@gmail.com	2042
EN_US	2022-02-15	Bhaktapur Municipality	Pharmacy # 20211023-1	Screening	khoppenworth@mtapsprogr...	3234
pt_PT	2022-02-15	भक्तपुर नगरपालिका	Pharmacy # 20211023-1	Screening	khoppenworth@mtapsprogr...	3234
EN_US	2022-02-21	Machhapuchhre Gaunpalika	steen andersen pharmacy	Check payment	Nepalgunj.screener@gmai...	3638
pt_PT	2022-02-21	माछापुच्छ्रे गाउँपालिका	Sunday 24 Oct Pharmacy ...	Check payment	Nepalgunj.screener@gmai...	3638
EN_US	2021-10-24	Bharatpur Metropolitan...	Itel pharmacy	Screening	khoppenworth@mtapsprogr...	2048
pt_PT	2021-10-24	भरतपुर महानगरपालिका	Itel pharmacy	Screening	khoppenworth@mtapsprogr...	2048
EN_US	2021-11-16	Bharatpur Metropolitan...	Itel pharmacy	Check payment	alex.kurasoff@gmail.com	2267
pt_PT	2021-11-16	भरतपुर महानगरपालिका	Itel pharmacy	Check payment	alex.kurasoff@gmail.com	2267
EN_US	2021-10-24	Ajijkot Gaunpalika	Pharmacy 2021024-2	Screening	khoppenworth@mtapsprogr...	2064

Figure 1 The data set

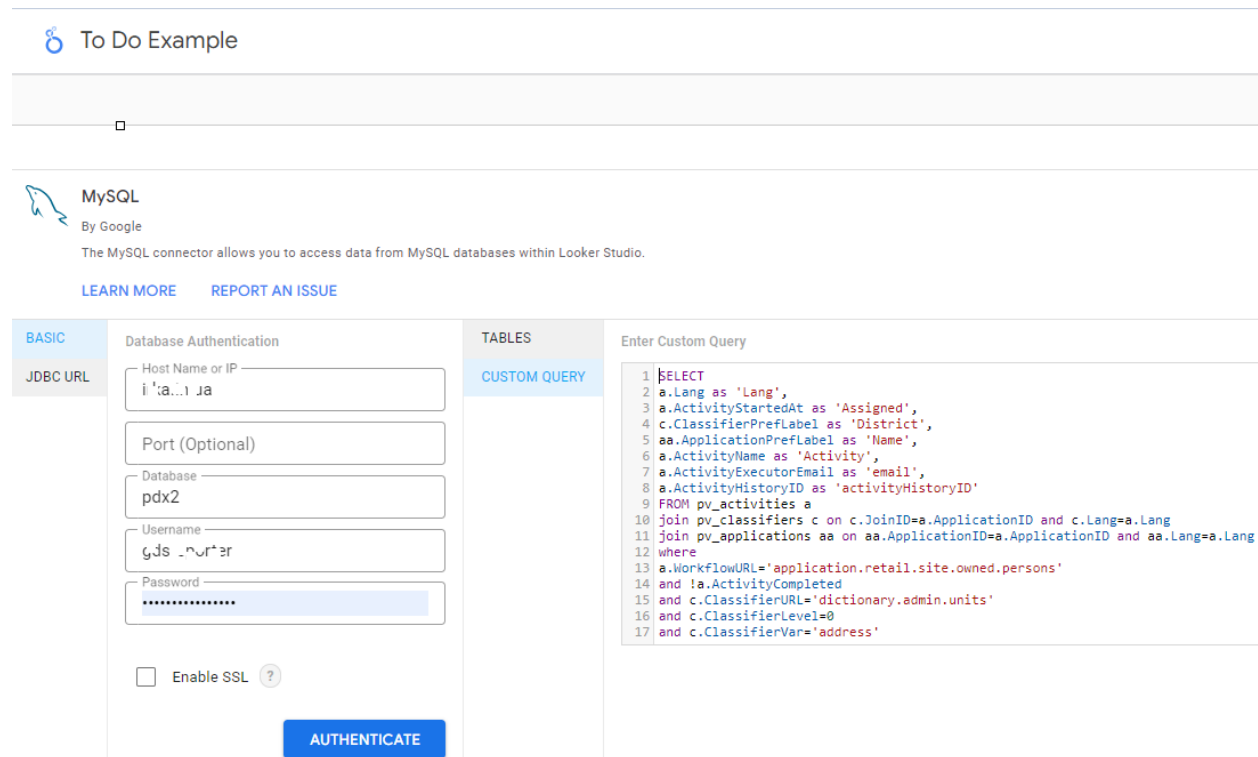
Creation the report

The static report

The vendor's manual on creation report in the Google Looker is here <https://cloud.google.com/looker/docs/intro>. Additionally, there are many tutorials available.

Key points for this example are:

The data source name is "To Do Example". We are using the SQL described above to create it



To Do Example

MySQL
By Google
The MySQL connector allows you to access data from MySQL databases within Looker Studio.

[LEARN MORE](#) [REPORT AN ISSUE](#)

BASIC	Database Authentication	TABLES	Enter Custom Query
JDBC URL	Host Name or IP <input type="text" value="i 'a...i ja"/> Port (Optional) <input type="text"/> Database <input type="text" value="pdx2"/> Username <input type="text" value="gds_admin"/> Password <input type="password" value="*****"/> <input type="checkbox"/> Enable SSL ? <input type="button" value="AUTHENTICATE"/>	CUSTOM QUERY	<pre> 1 SELECT 2 a.Lang as 'Lang', 3 a.ActivityStartedAt as 'Assigned', 4 c.ClassifierPrefLabel as 'District', 5 aa.ApplicationPrefLabel as 'Name', 6 a.ActivityName as 'Activity', 7 a.ActivityExecutorEmail as 'email', 8 a.ActivityHistoryID as 'activityHistoryID' 9 FROM pv_activities a 10 join pv_classifiers c on c.JoinID=a.ApplicationID and c.Lang=a.Lang 11 join pv_applications aa on aa.ApplicationID=a.ApplicationID and aa.Lang=a.Lang 12 where 13 a.WorkflowURL='application.retail.site.owned.persons' 14 and !a.ActivityCompleted 15 and c.ClassifierURL='dictionary.admin.units' 16 and c.ClassifierLevel=0 17 and c.ClassifierVar='address' </pre>

Figure 2 The Data Source Connection

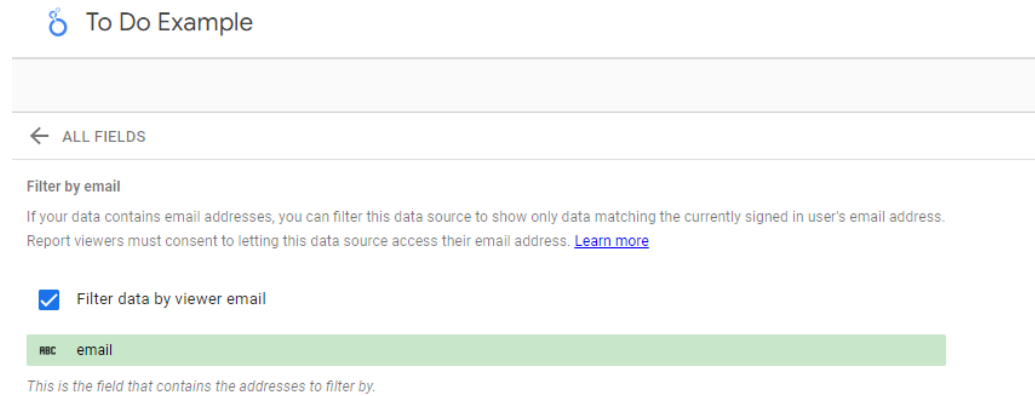


Figure 3 Filter the data source by email to ensure access control

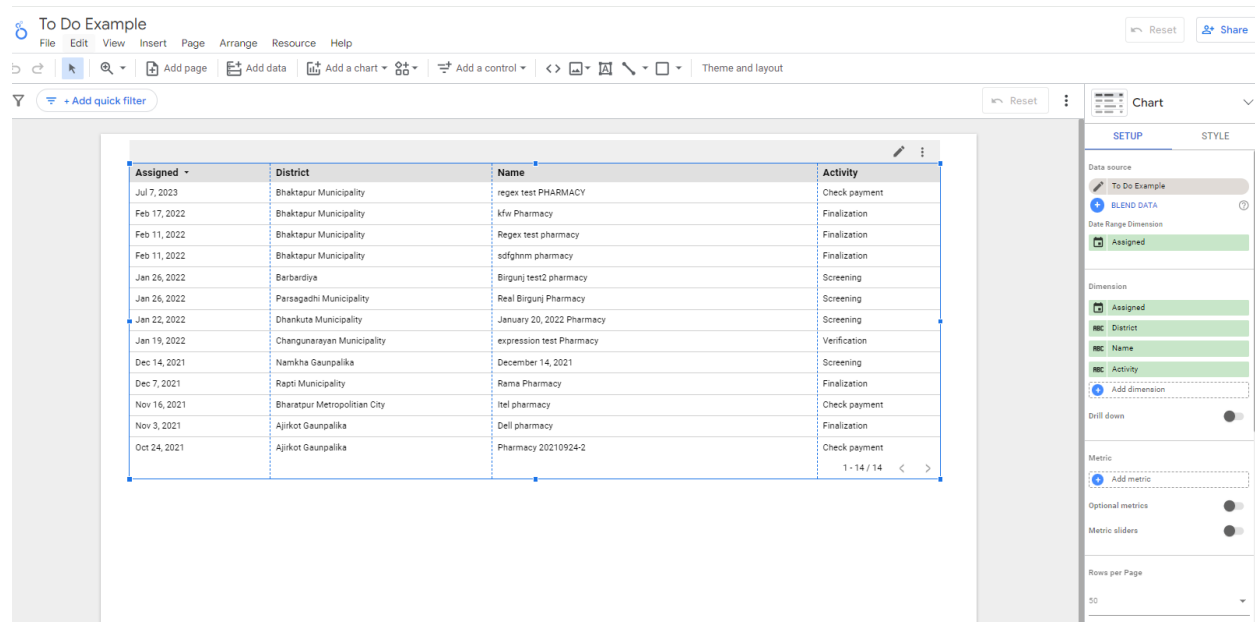


Figure 4 The static report

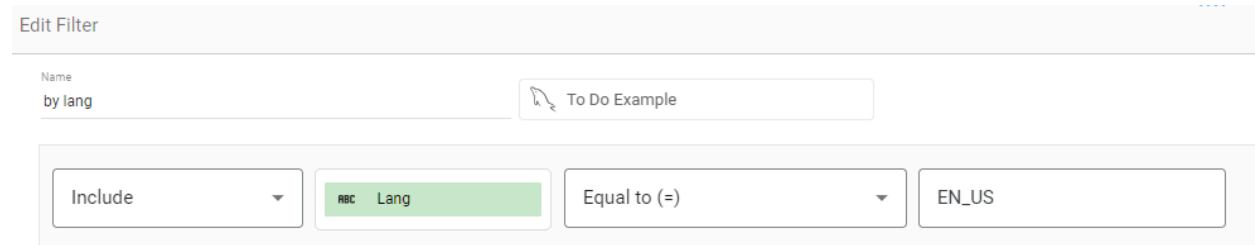


Figure 5 Report filter by language - EN_US only

Add interactivity

This report publishes To Do data. It will be nice to add a possibility to complete activities using the OpenRIMS User Interface.

The Google Looker provides a link feature, that allows placing a link into a report data cell.

First, determine the link URL using the To-Do List in OpenRIMS. An example is in the browser's URL line

[https://pharmadex.irka.in.ua/admin#todolist/activitymanager/%7B"historyId"%3A9059%7D](https://pharmadex.irka.in.ua/admin#todolist/activitymanager/%7B%22historyId%22%3A9059%7D)

The ActivityHistoryID is in our data set. Thus, it is possible to assign a link to cells in the "Activity" column.

Second, replace the Activity text with the Activity hyperlink field⁵

The screenshot shows the configuration for a field named 'Activity'. The 'Data Type' is set to 'Hyperlink'. The 'Formula' is defined as follows:

```
1 HYPERLINK(  
2 CONCAT('https://pharmadex.irka.in.ua',  
3 '/admin#todolist/activitymanager/',  
4 '%7B"historyId"%3A',  
5 activityHistoryID,  
6 '%7D')  
7 , Activity )
```

Figure 6 The link to the OpenRIMS activity processing form

⁵ The details are here <https://support.google.com/looker-studio/answer/7431836?hl=en#zippy=%2Cin-this-article>

visualization.google.looker

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Access to this report is limited. Thus, add only authorized users to the access control

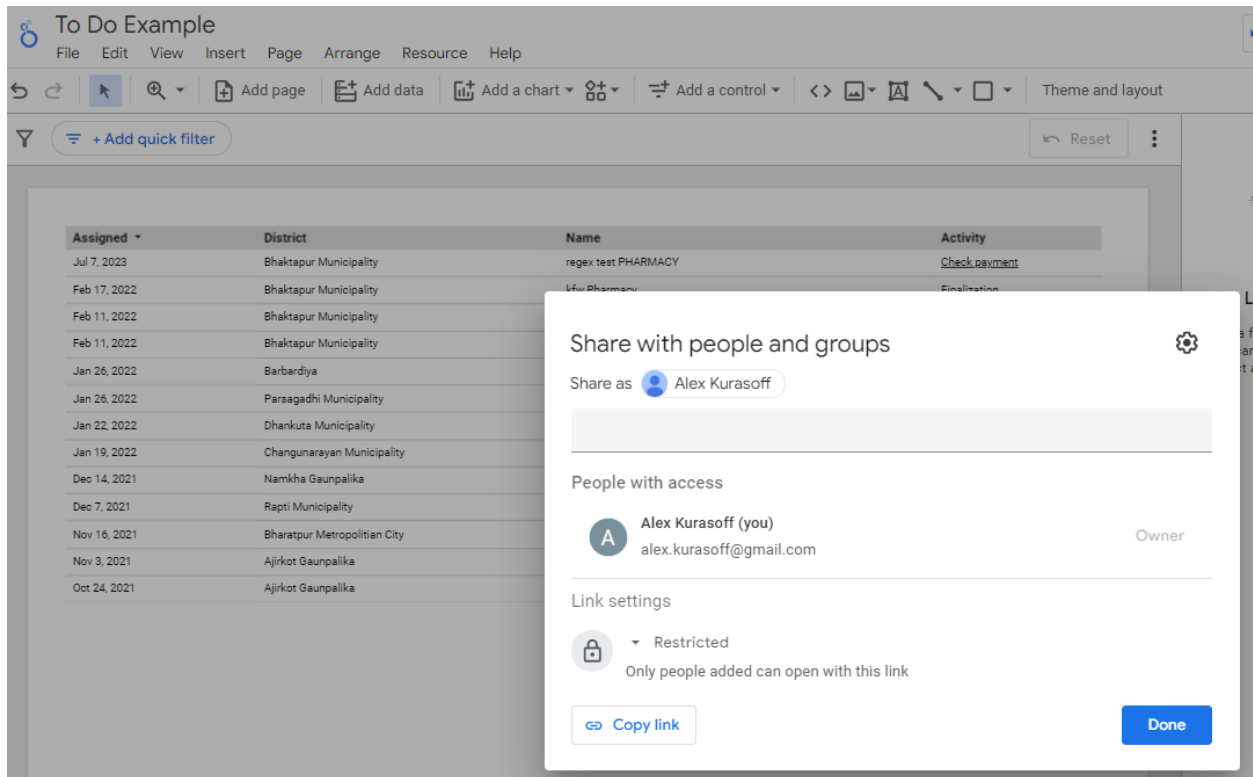


Figure 7 Add authorized users