

Simple App Reporting with Xojo, a Database and Google Looker Studio

Overview

Every developer wants to know what users do with their app. Which features are used? Where is the app used the most? However, there is always the possibility to measure too much or the wrong information.

I wanted to have some simple reports where I don't have any ongoing.

In previous years I had used the Google Measurement Protocol. This allowed to measure anything, send the data to Google Analytics and then do reports in Google Looker Studio. These days Google Measurement Protocol only measures purchases and games.

Instead I'm now using a database on my website. Google Looker Studio can access the data and do a number of reports. I'm going to outline this process. I'm not going to explain Google Looker Studio beyond setting up a connection.

What do you want to measure?

Each app has some properties like the version, macOS version, the locale which are of interest. How fast do users adopt new versions of macOS? Which versions of the app are in use?

For a full reporting system I would transform the data into a star scheme. I don't think that this is easily possible in Looker Studio. As result I only have one table. From the time of using the Google Measurement Protocol I have the fields Action, Format, Type and Value which allows a broad range of measuring stuff. If you start out then you will want to use different fields.

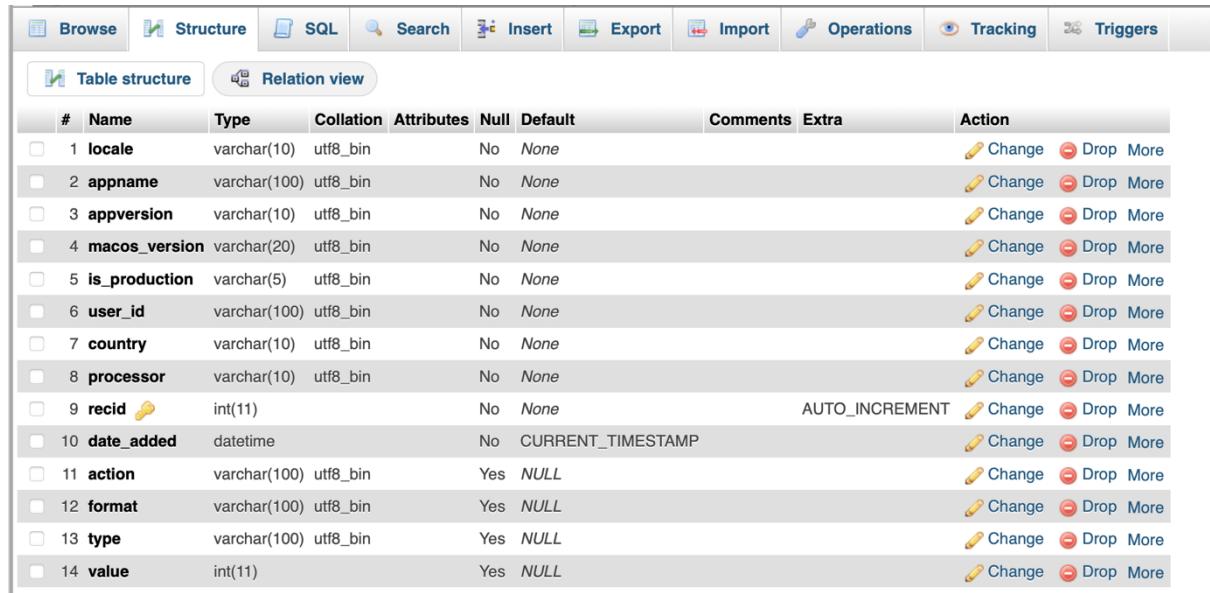
My app archives emails. Therefore, I want to know the number of users actually archiving. I'm also interested in how many emails were archived and then different properties of the email archiving.

I have experimented with the number of windows the user has opened and how long the app has been used. But this proved too much information or I wasn't able to get the data into a good format.

From my time at GM I know: the less reports you have the better. Really.

The Database

My hosting company allows me to create databases with phpMyAdmin. Since I need the database only once I have created the database manually.



The screenshot shows the 'Table structure' view in phpMyAdmin. The table has 14 columns. The first 8 columns are of type 'varchar' with lengths 10, 100, 10, 20, 5, 100, 10, and 10 respectively, all using 'utf8_bin' collation. The 9th column is 'recid' of type 'int(11)' with 'AUTO_INCREMENT' set. The 10th column is 'date_added' of type 'datetime' with 'CURRENT_TIMESTAMP' default. The last three columns are 'action', 'format', and 'type', all of type 'varchar(100)' with 'utf8_bin' collation. The 'value' column is of type 'int(11)'. Each column has 'Change', 'Drop', and 'More' action links.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	locale	varchar(10)	utf8_bin		No	None			Change Drop More
2	appname	varchar(100)	utf8_bin		No	None			Change Drop More
3	appversion	varchar(10)	utf8_bin		No	None			Change Drop More
4	macos_version	varchar(20)	utf8_bin		No	None			Change Drop More
5	is_production	varchar(5)	utf8_bin		No	None			Change Drop More
6	user_id	varchar(100)	utf8_bin		No	None			Change Drop More
7	country	varchar(10)	utf8_bin		No	None			Change Drop More
8	processor	varchar(10)	utf8_bin		No	None			Change Drop More
9	recid	int(11)			No	None		AUTO_INCREMENT	Change Drop More
10	date_added	datetime			No	CURRENT_TIMESTAMP			Change Drop More
11	action	varchar(100)	utf8_bin		Yes	NULL			Change Drop More
12	format	varchar(100)	utf8_bin		Yes	NULL			Change Drop More
13	type	varchar(100)	utf8_bin		Yes	NULL			Change Drop More
14	value	int(11)			Yes	NULL			Change Drop More

To access the database I need the database name, a user name and a password. Unfortunately, the screenshot is in German. Verbindungsdata = connection information, Datenbankname = database name, Benutzername = user name

Verbindungsdaten für 48

Sie können diese Details zur Datenbankverbindung z.B. nutzen, wenn Sie während der Installation einer Webanwendung aufgefordert werden, solche Informationen anzugeben.

Host localhost:3306

Datenbankname 48

Benutzername 48

Passwort *****

Schließen

The Xojo part

In Xojo I first collect the information that doesn't change while the app is running: macOS version, app version and the like. If I want to send some information to the database I have a function `AddToAnalytics`. All values for the same combination of action, format and type are added.

```
app.Analytics.AddToAnalytics("action", "format", "type", 10)
app.Analytics.AddToAnalytics("action", "format", "type", 20)
app.Analytics.AddToAnalytics("action2", "format2", "type2", 10)
```

The above code makes 2 entries, one for the first lines and then another for the last line.

Only after the app has finished the data is sent to the database. The data is json'd and sent to a php script. This avoids saving the database details into the Xojo code.

```
app.Analytics.PostData
```

Because the code doesn't have a php script linked it doesn't do anything.

I don't collect any personal user data!!!

The php script

For the php script I need the connection details of the database:

```
$servername = "";
$dbname = "";
$username = "";
$password = "";
```

The php script `analytics.php` does some minimal checking of the data. Then the script connects to the database. The data is extracted from the json and finally the data is added to the database with a prepared statement.

Google Looker Studio

Now comes the interesting part – making the reports. If I wanted to keep the data private then I could either download the data from the database or use some Excel plugin to access the MySQL database. However, with Looker Studio I only had to set up the reports once and now don't have any ongoing work.

Google Looker Studio needs to have access to the data. This is done in Data Sources. Moth Software Mail Archiver is my data source for the report:

Looker Studio

Search Looker Studio

Create

Recent

Reports

Data sources

Explorer

Recent

Shared with me

Owned by me

Bin

Templates

Name	Owned by anyone	Last opened by me	Location
Moth Software Mail Archiver	Beatrix Willius	16:04	Owned by me
	Beatrix Willius	26 Jun 2023	Owned by me
	Beatrix Willius	5 Jun 2023	Owned by me
	Beatrix Willius	8 Jan 2021	Owned by me
	Beatrix Willius	14 Oct 2020	Owned by me
	Beatrix Willius	2 Dec 2018	Owned by me
	Beatrix Willius	1 Dec 2018	Owned by me
	Beatrix Willius	1 Dec 2018	Owned by me
	Beatrix Willius	1 Dec 2018	Owned by me

Like the php script Looker Studio needs access to the database:

Moth Software Mail Archiver

MySQL

By Google

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

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BASIC

JDBC URL

Database authentication

Host name or IP

Port (optional)

Database

Username

Password

Enable SSL

AUTHENTICATE

TABLES

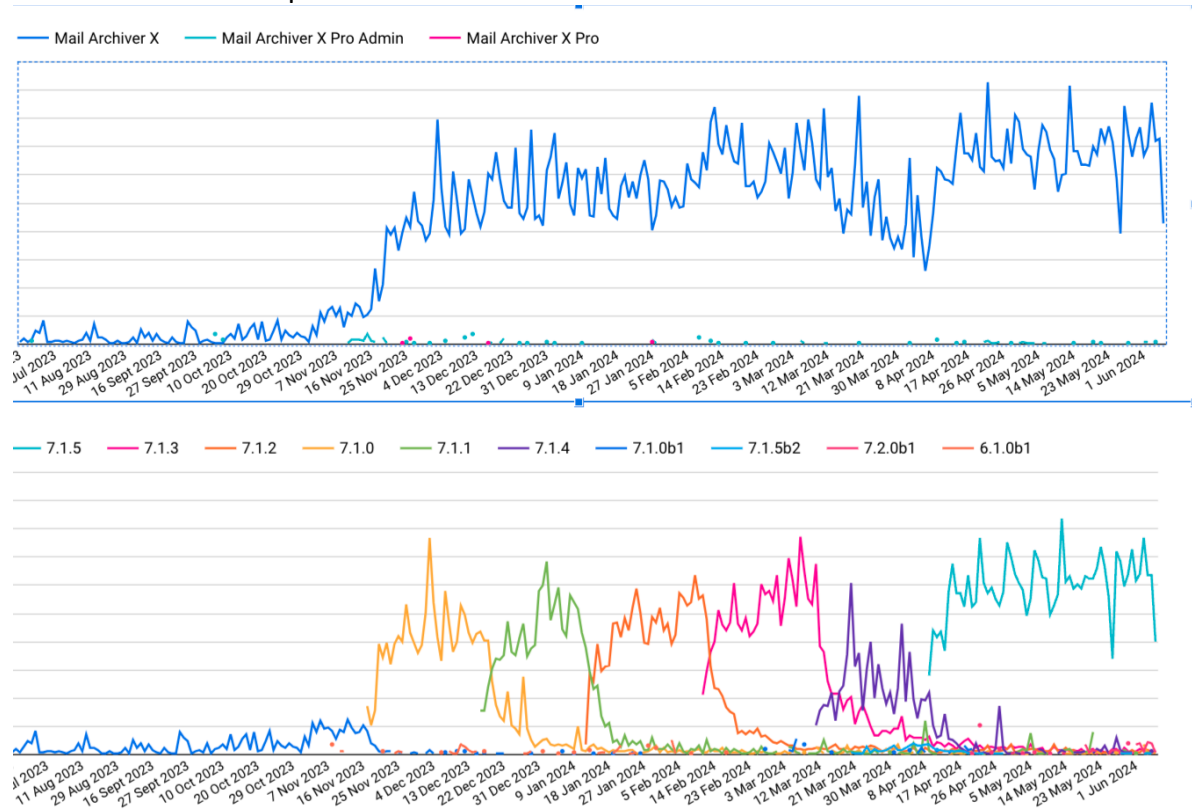
CUSTOM QUERY

Table

data

Result

Below is one of my reports showing the usage of the different versions of my app and how new versions are adopted:





MySQL

By Google

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

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BASIC	Database authentication	TABLES	Table
JDBC URL	<div>Host name or IP</div> <div>d</div> <div>Port (optional)</div> <div>Database</div> <div>48</div> <div>Username</div> <div>48</div> <div>Password</div> <div><input type="checkbox"/> Enable SSL ?</div> <div>AUTHENTICATE</div>	CUSTOM QUERY	<div>data</div>