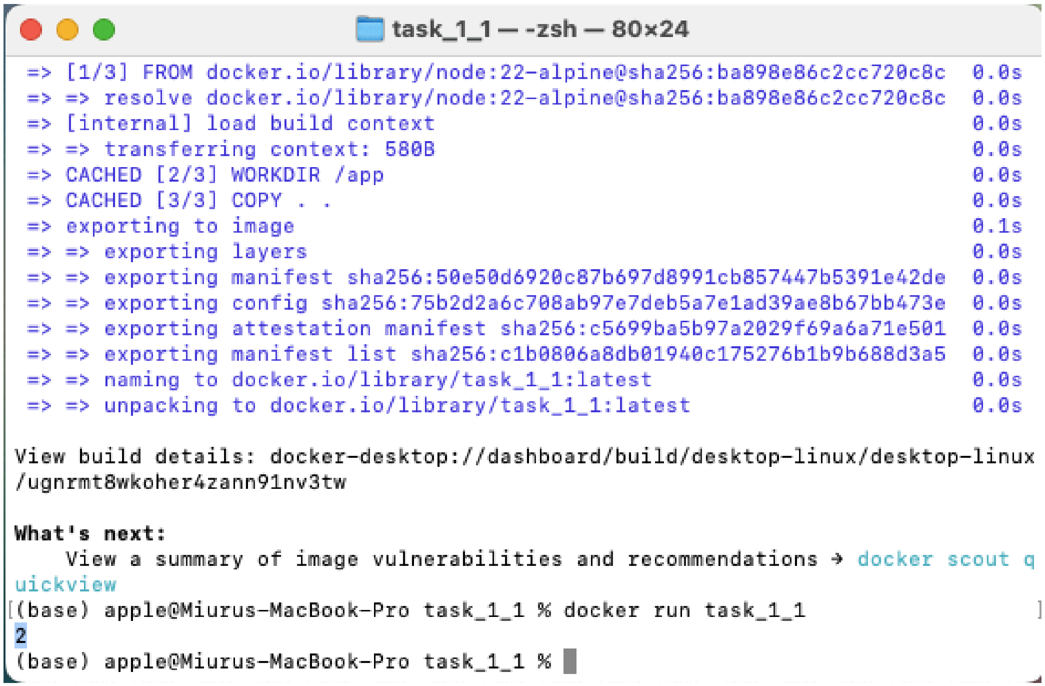
Task 01

1.1 Counting Days

```
Date.prototype.daysTo = function (date) {
 if (this.getTime === date.getTime()) {
   return "date1 and date2 cannot be the same";
 }
 if (this.getTime() > date.getTime()) {
   return "date1 has to be a previous date than date2";
 }

 const dateDiff = (date - this) / (1000 * 60 * 60 * 24);

 return dateDiff;
};

const date1 = new Date("2024-07-10");
const date2 = new Date("2024-07-12");

console.log(date1.daysTo(date2));
```

This returns 2 when date values are 2024-07-10 & 2024-07-12 respectively. Additionally it would return 2 separate errors if the both dates are similar or date1 > date2.



```
 => [1/3] FROM docker.io/library/node:22-alpine@sha256:ba898e86c2cc720c8c  0.0s
 => => resolve docker.io/library/node:22-alpine@sha256:ba898e86c2cc720c8c  0.0s
 => [internal] load build context                                          0.0s
 => => transferring context: 580B                                          0.0s
 => CACHED [2/3] WORKDIR /app                                              0.0s
 => CACHED [3/3] COPY . .                                                  0.0s
 => exporting to image                                                     0.1s
 => => exporting layers                                                    0.0s
 => => exporting manifest sha256:50e50d6920c87b697d8991cb857447b5391e42de  0.0s
 => => exporting config sha256:75b2d2a6c708ab97e7deb5a7e1ad39ae8b67bb473e  0.0s
 => => exporting attestation manifest sha256:c5699ba5b97a2029f69a6a71e501  0.0s
 => => exporting manifest list sha256:c1b0806a8db01940c175276b1b9b688d3a5  0.0s
 => => naming to docker.io/library/task_1_1:latest                         0.0s
 => => unpacking to docker.io/library/task_1_1:latest                      0.0s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux
/ugnrmt8wkoher4zann91nv3tw

What's next:
    View a summary of image vulnerabilities and recommendations → docker scout q
uickview
(base) apple@Miurus-MacBook-Pro task_1_1 % docker run task_1_1
2
(base) apple@Miurus-MacBook-Pro task_1_1 % 
```

1.2 Ordered Sales

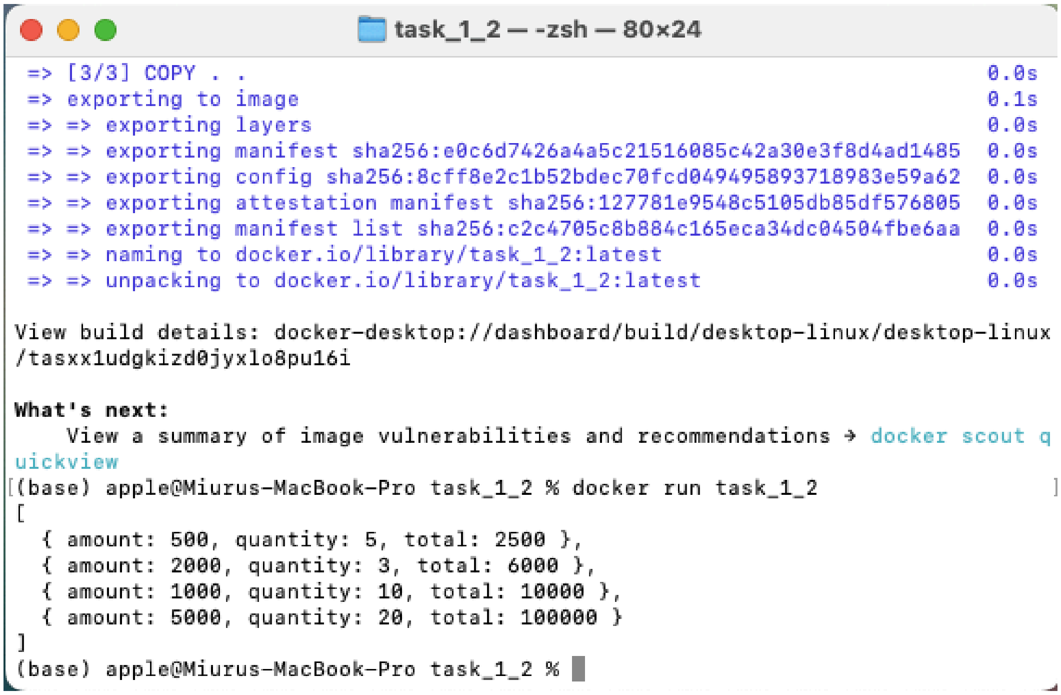
```
const orderedSales = (salesArr) => {
 salesArrWithTotal = salesArr.map((sale) => ({
   ...sale,
   total: sale.amount * sale.quantity,
 }));

 salesArrWithTotal.sort((a, b) => a.total - b.total);

 return salesArrWithTotal;
};
```

Takes in an array of type [{amount: xx, quantity: xx}, ...] and adds an additional total attribute that is calculated from the amount & quantity values, and finally returns the sorted array of type [{amount: xx, quantity: xx, total: xx}, ...]

Input ->

```
const salesArr = [
 { amount: 1000, quantity: 10 },
 { amount: 2000, quantity: 3 },
 { amount: 5000, quantity: 20 },
 { amount: 500, quantity: 5 },
];
```

Returns,



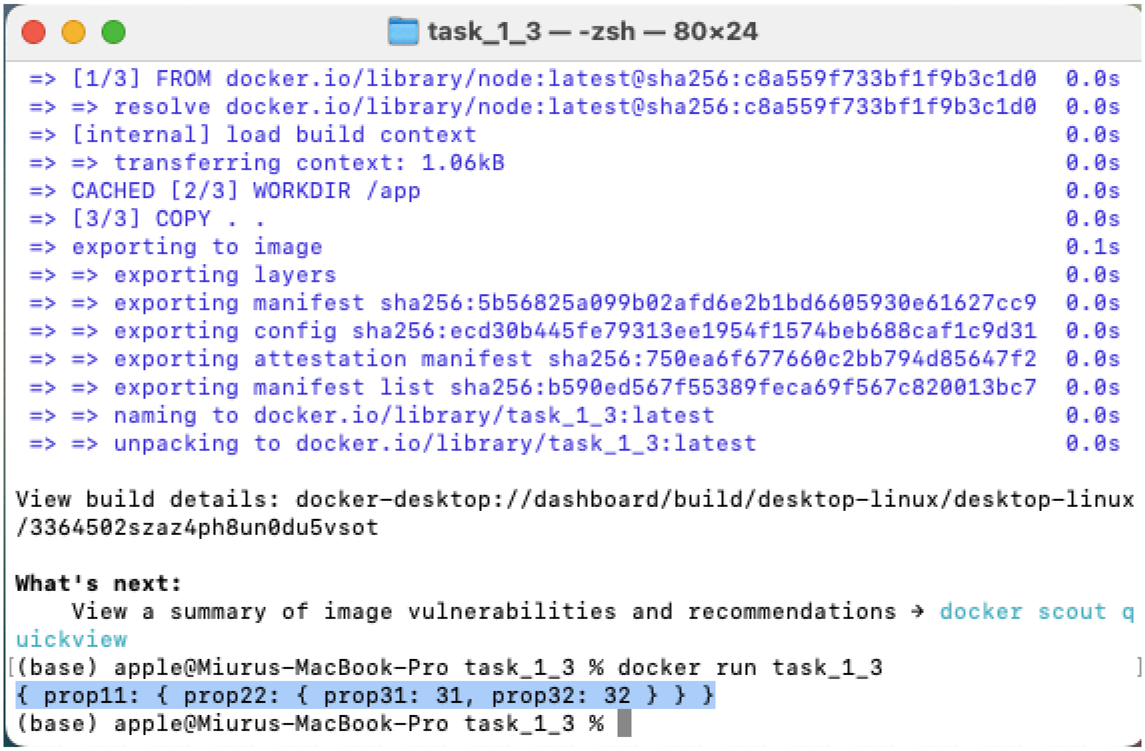
```
 => [3/3] COPY . .                                                         0.0s
 => exporting to image                                                     0.1s
 => => exporting layers                                                    0.0s
 => => exporting manifest sha256:e0c6d7426a4a5c21516085c42a30e3f8d4ad1485  0.0s
 => => exporting config sha256:8cff8e2c1b52bdec70fcd049495893718983e59a62  0.0s
 => => exporting attestation manifest sha256:127781e9548c5105db85df576805  0.0s
 => => exporting manifest list sha256:c2c4705c8b884c165eca34dc04504fbe6aa  0.0s
 => => naming to docker.io/library/task_1_2:latest                         0.0s
 => => unpacking to docker.io/library/task_1_2:latest                      0.0s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux
/tasxx1udgkizd0jyxlo8pu16i

What's next:
    View a summary of image vulnerabilities and recommendations → docker scout q
uickview
(base) apple@Miurus-MacBook-Pro task_1_2 % docker run task_1_2
[
  { amount: 500, quantity: 5, total: 2500 },
  { amount: 2000, quantity: 3, total: 6000 },
  { amount: 1000, quantity: 10, total: 10000 },
  { amount: 5000, quantity: 20, total: 100000 }
]
(base) apple@Miurus-MacBook-Pro task_1_2 %
```

1.3 Object Projection

Input ->

```
const src = {
 prop11: {
   prop21: 21,
   prop22: {
     prop31: 31,
     prop32: 32,
   },
 },
 prop12: 12,
};

const proto = {
 prop11: {
   prop22: null,
 },
};
```

This returns an object projection that is an intersection of the ‘src’ and the ‘proto’ objects.

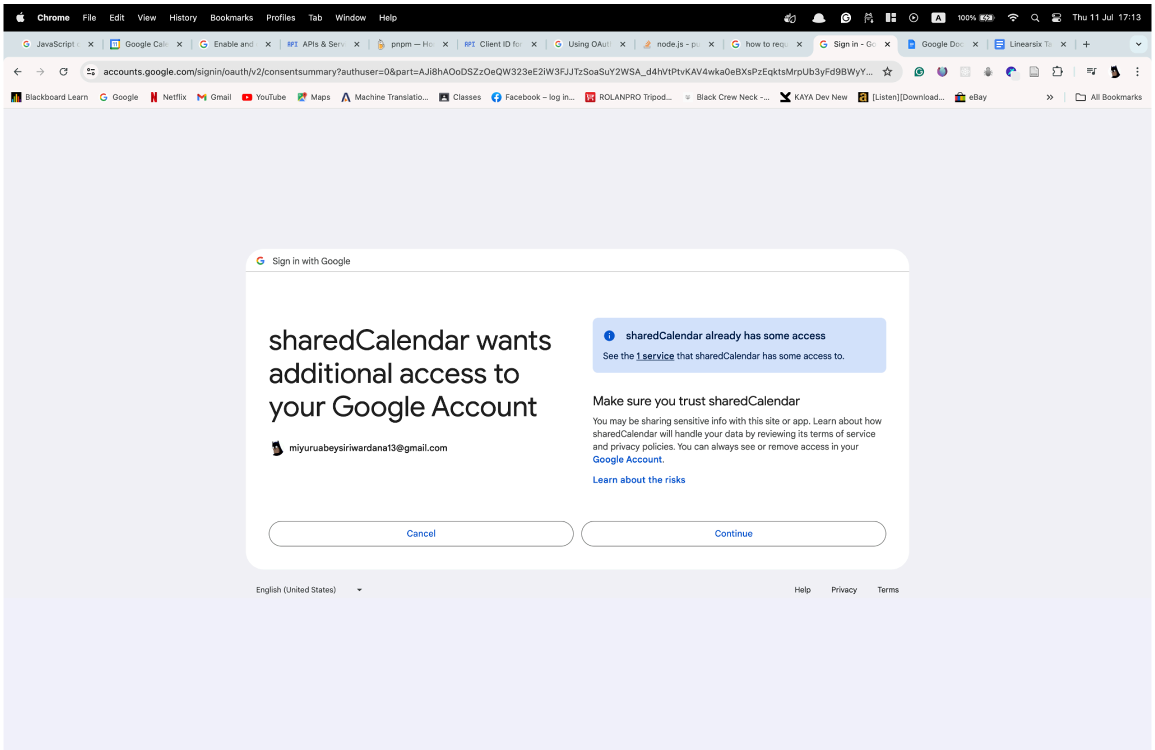


```
 => [1/3] FROM docker.io/library/node:latest@sha256:c8a559f733bf1f9b3c1d0  0.0s
 => => resolve docker.io/library/node:latest@sha256:c8a559f733bf1f9b3c1d0  0.0s
 => [internal] load build context                                          0.0s
 => => transferring context: 1.06kB                                        0.0s
 => CACHED [2/3] WORKDIR /app                                              0.0s
 => [3/3] COPY . .                                                         0.0s
 => exporting to image                                                     0.1s
 => => exporting layers                                                    0.0s
 => => exporting manifest sha256:5b56825a099b02afd6e2b1bd6605930e61627cc9  0.0s
 => => exporting config sha256:ecd30b445fe79313ee1954f1574beb688caf1c9d31  0.0s
 => => exporting attestation manifest sha256:750ea6f677660c2bb794d85647f2  0.0s
 => => exporting manifest list sha256:b590ed567f55389feca69f567c820013bc7  0.0s
 => => naming to docker.io/library/task_1_3:latest                         0.0s
 => => unpacking to docker.io/library/task_1_3:latest                      0.0s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux
/3364502szaz4ph8un0du5vsot

What's next:
    View a summary of image vulnerabilities and recommendations → docker scout q
uickview
(base) apple@Miurus-MacBook-Pro task_1_3 % docker run task_1_3
{ prop11: { prop22: { prop31: 31, prop32: 32 } } }
(base) apple@Miurus-MacBook-Pro task_1_3 % 
```

Task 01 Sources ->
https://www.digital-web.com/articles/javascript_date_object_with_user_methods/
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Date
https://www.youtube.com/watch?v=LwYwz67I1IA
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/sort#creating_displaying_and_sorting_an_array

Task 02)

C



accounts.google.com/signin/oauth/v2/consentsummary?authuser=0&part=AJi8hAOoDSZzOeQW323eE2iW3FJJTzSoaSuY2WSA_d4hVtPtvKAV4wka0eBXsPzEqktsMrpUb3yFd9BWyY...

Sign in with Google

sharedCalendar wants additional access to your Google Account

miyuruabeysiriwardana13@gmail.com

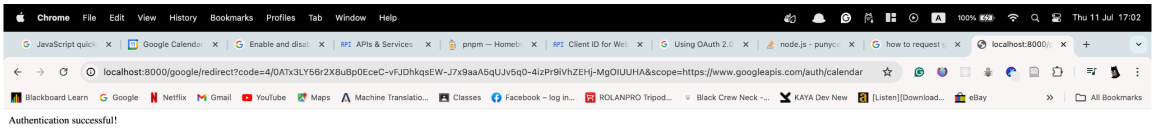
sharedCalendar already has some access

See the 1 service that sharedCalendar has some access to.

Make sure you trust sharedCalendar

You may be sharing sensitive info with this site or app. Learn about how sharedCalendar will handle your data by reviewing its terms of service and privacy policies. You can always see or remove access in your Google Account.

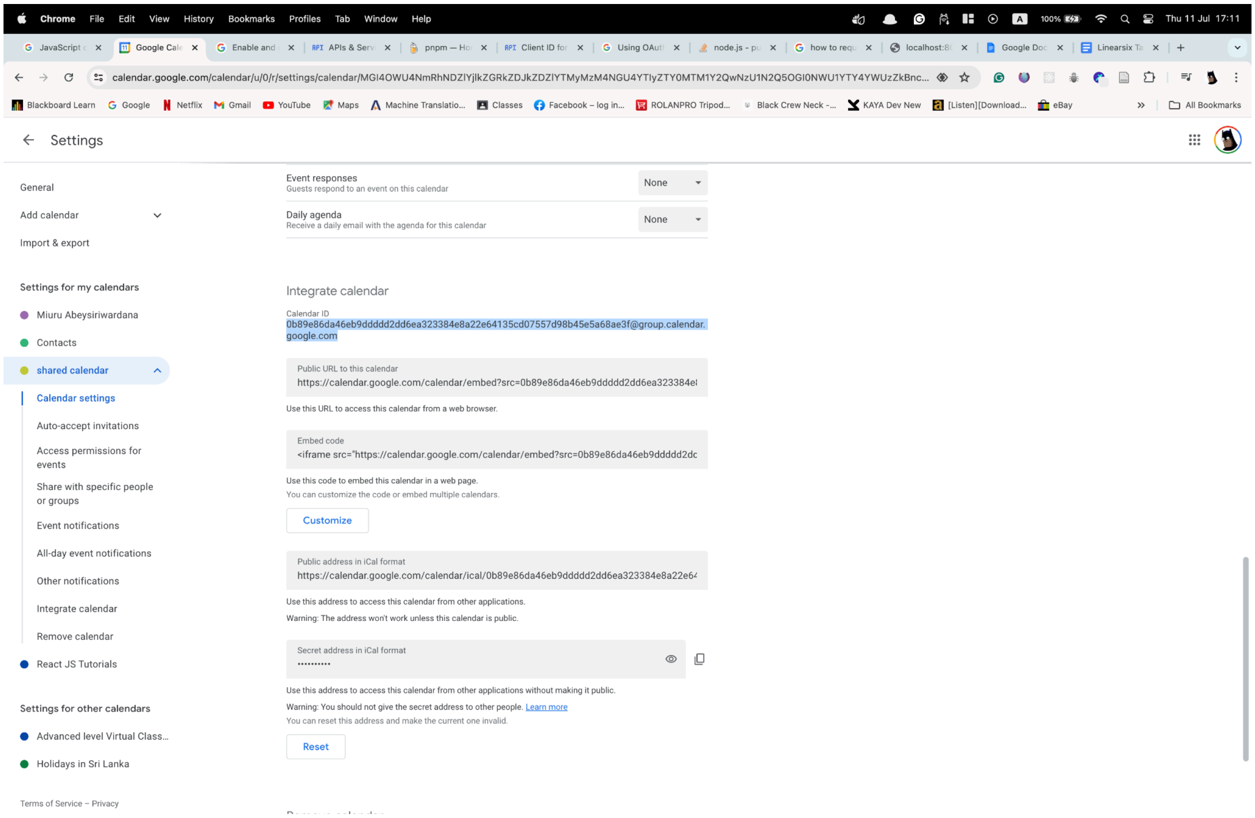
Learn about the risks



localhost:8000/google/redirect?code=4/0ATx3LY56r2X8uBp0EceC-vFJDhkqsEW-J7x9aaA5qUJv5q0-4izPr9iVhZEHj-MgOIUUHA&scope=https://www.googleapis.com/auth/calendar

Authentication successful!

Miuru Abeysiriwardana


Chrome File Edit View History Bookmarks Profiles Tab Window Help
Thu 11 Jul 17:11
Blackboard Learn Google Netflix Gmail YouTube Maps Machine Translatio... Classes Facebook – log in... ROLANPRO Tripod... Black Crew Neck -... KAYA Dev New [Listen][Download... eBay All Bookmarks

calendar.google.com/calendar/u/0/r/settings/calendar/MGI4OWU4NmRhNDZlYjlkZGRkZDJkZDZlYTMyMzM4NGU4YTIyZTY0MTM1Y2QwNzU1N2Q5OGI0NWU1YTY4YWUzZkBnc...

Settings

General
Add calendar
Import & export

Settings for my calendars
- Miuru Abeysiriwardana
- Contacts
- shared calendar
  - Calendar settings
  - Auto-accept invitations
  - Access permissions for events
  - Share with specific people or groups
  - Event notifications
  - All-day event notifications
  - Other notifications
  - Integrate calendar
  - Remove calendar
- React JS Tutorials

Settings for other calendars
- Advanced level Virtual Class...
- Holidays in Sri Lanka

Terms of Service – Privacy

Event responses
Guests respond to an event on this calendar: None

Daily agenda
Receive a daily email with the agenda for this calendar: None

Integrate calendar

Calendar ID
0b89e86da46eb9dddd2dd6ea323384e8a22e64135cd07557d98b45e5a68ae3f@group.calendar.google.com

Public URL to this calendar
https://calendar.google.com/calendar/embed?src=0b89e86da46eb9dddd2dd6ea323384e

Use this URL to access this calendar from a web browser.

Embed code
<iframe src="https://calendar.google.com/calendar/embed?src=0b89e86da46eb9dddd2dc

Use this code to embed this calendar in a web page.
You can customize the code or embed multiple calendars.

Customize

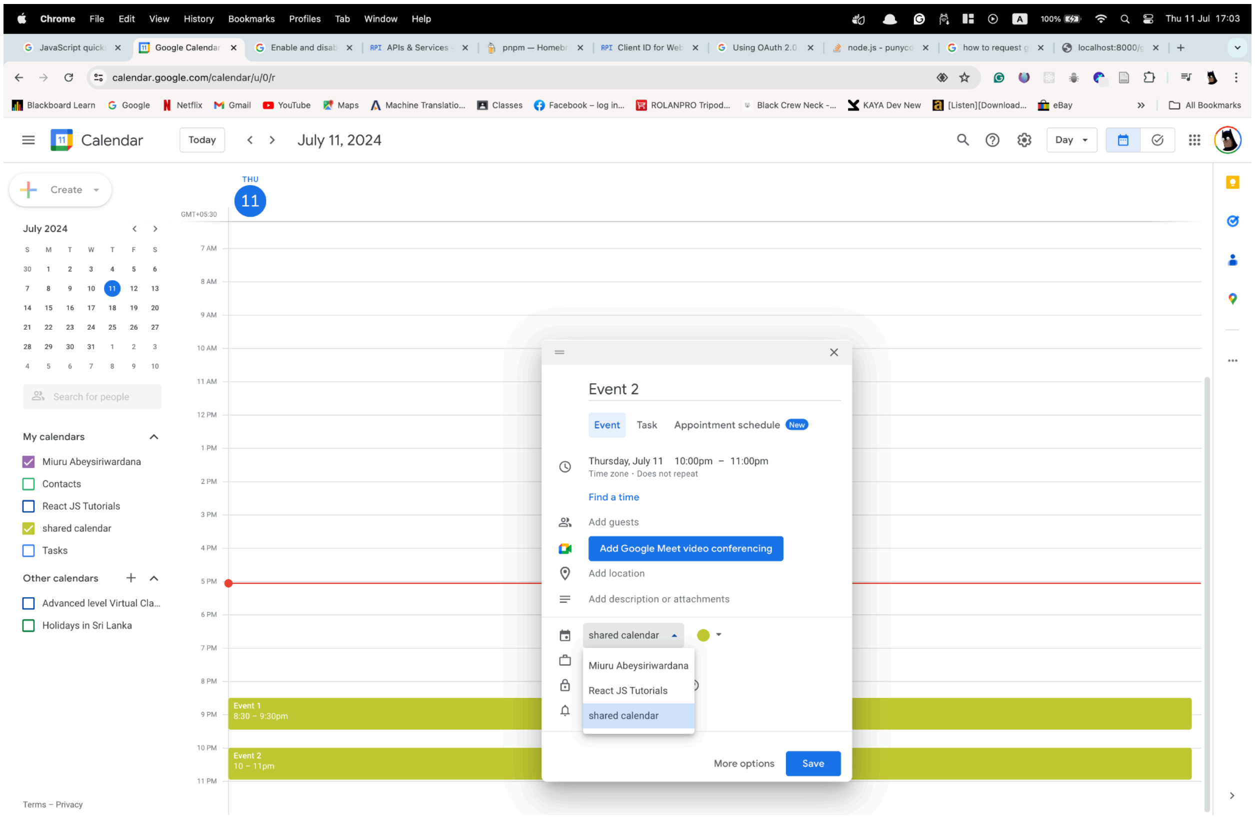
Public address in iCal format
https://calendar.google.com/calendar/ical/0b89e86da46eb9dddd2dd6ea323384e8a22e64

Use this address to access this calendar from other applications.
Warning: The address won't work unless this calendar is public.

Secret address in iCal format
••••••••••

Use this address to access this calendar from other applications without making it public.
Warning: You should not give the secret address to other people. Learn more
You can reset this address and make the current one invalid.

Reset


Chrome File Edit View History Bookmarks Profiles Tab Window Help
Thu 11 Jul 17:03
Blackboard Learn Google Netflix Gmail YouTube Maps Machine Translatio... Classes Facebook – log in... ROLANPRO Tripod... Black Crew Neck -... KAYA Dev New [Listen][Download... eBay All Bookmarks
Calendar
Today
July 11, 2024
Day
Create
July 2024
THU
11
GMT+05:30
7 AM
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Search for people
Terms – Privacy

calendar.google.com/calendar/u/0/r

My calendars
- ☑ Miuru Abeysiriwardana
- □ Contacts
- □ React JS Tutorials
- ☑ shared calendar
- □ Tasks

Other calendars
- □ Advanced level Virtual Cla...
- □ Holidays in Sri Lanka

Event 1
8:30 – 9:30pm

Event 2
10 – 11pm

Event 2

Event | Task | Appointment schedule New

Thursday, July 11 10:00pm – 11:00pm
Time zone · Does not repeat

Find a time

Add guests

Add Google Meet video conferencing

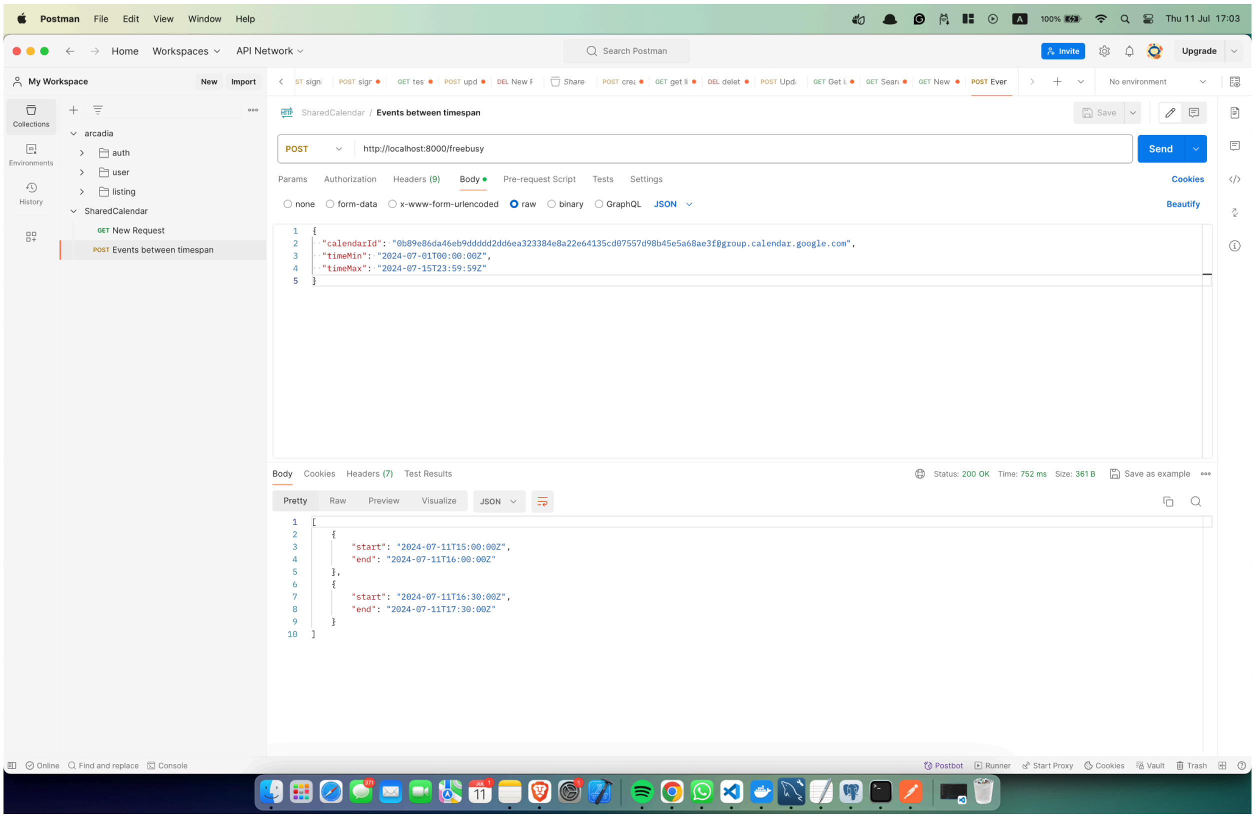
Add location

Add description or attachments

shared calendar
- Miuru Abeysiriwardana
- React JS Tutorials
- shared calendar

More options Save

Miuru Abeysiriwardana



SharedCalendar / Events between timespan

POST http://localhost:8000/freebusy

```
{
  "calendarId": "0b89e86da46eb9ddddd2dd6ea323384e8a22e64135cd07557d98b45e5a68ae3f@group.calendar.google.com",
  "timeMin": "2024-07-01T00:00:00Z",
  "timeMax": "2024-07-15T23:59:59Z"
}
```

Status: 200 OK Time: 752 ms Size: 361 B

```
[
    {
        "start": "2024-07-11T15:00:00Z",
        "end": "2024-07-11T16:00:00Z"
    },
    {
        "start": "2024-07-11T16:30:00Z",
        "end": "2024-07-11T17:30:00Z"
    }
]
```

This utilizes the **Freebusy: query** and returns an array that contains all the events inbetween the min and max time slots.

Sources ->
https://www.youtube.com/watch?v=kNwCT5PN93k
https://developers.google.com/calendar/api/v3/reference/freebusy/query
https://www.tabnine.com/code/javascript/functions/googleapis/Calendar/freebusy

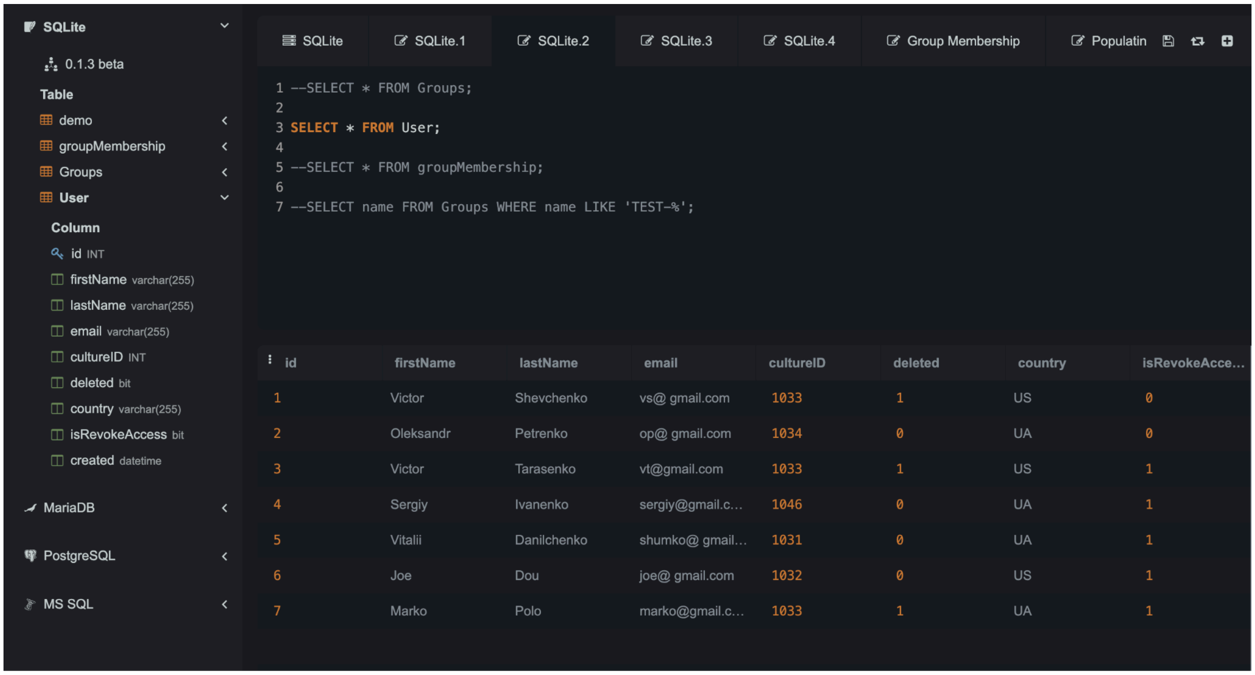
Task 03

3.1

User Table

CREATE TABLE User (
id int PRIMARY KEY,
firstName varchar(255),
lastName varchar(255),
email varchar(255),
cultureID int,
deleted bit,
country varchar(255),
isRevokeAccess bit,
created datetime
);

INSERT INTO User VALUES
(1, 'Victor', 'Shevchenko', 'vs@ gmail.com', 1033, 1, 'US', 0, '2011-04-05'),
(2, 'Oleksandr', 'Petrenko', 'op@ gmail.com', 1034, 0, 'UA', 0, '2014-05-01'),
(3, 'Victor', 'Tarasenko', 'vt@gmail.com', 1033, 1, 'US', 1, '2015-07-03'),
(4, 'Sergiy', 'Ivanenko', 'sergiy@gmail.com', 1046, 0, 'UA', 1, '2010-02-02'),
(5, 'Vitalii', 'Danilchenko', 'shumko@ gmail.com', 1031, 0, 'UA', 1, '2014-05-01'),
(6, 'Joe', 'Dou', 'joe@ gmail.com', 1032, 0, 'US', 1, '2009-01-01'),
(7, 'Marko', 'Polo', 'marko@gmail.com', 1033, 1, 'UA', 1, '2015-07-03')

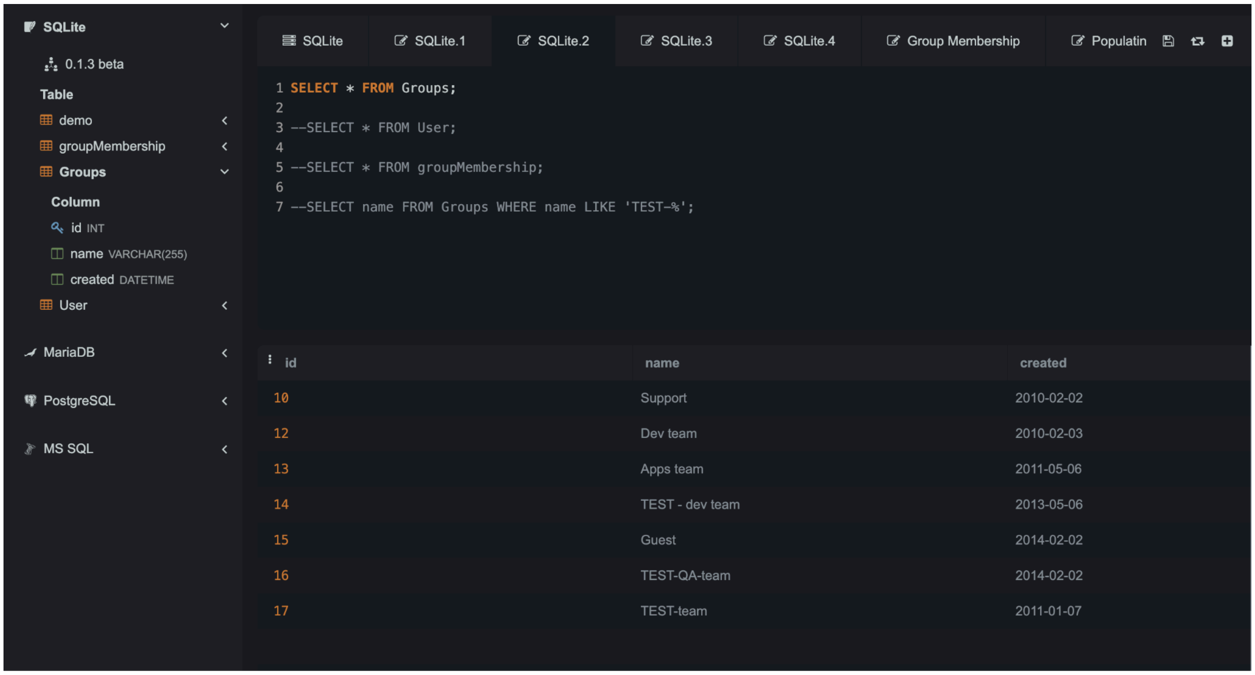


```
--SELECT * FROM Groups;

SELECT * FROM User;

--SELECT * FROM groupMembership;

--SELECT name FROM Groups WHERE name LIKE 'TEST-%';
```

id	firstName	lastName	email	cultureID	deleted	country	isRevokeAcce...
1	Victor	Shevchenko	vs@ gmail.com	1033	1	US	0
2	Oleksandr	Petrenko	op@ gmail.com	1034	0	UA	0
3	Victor	Tarasenko	vt@gmail.com	1033	1	US	1
4	Sergiy	Ivanenko	sergiy@gmail.c...	1046	0	UA	1
5	Vitalii	Danilchenko	shumko@ gmail...	1031	0	UA	1
6	Joe	Dou	joe@ gmail.com	1032	0	US	1
7	Marko	Polo	marko@gmail.c...	1033	1	UA	1

Group Table

```
CREATE TABLE Groups (
id INT PRIMARY KEY,
name VARCHAR(255),
created DATETIME
);

INSERT INTO Groups VALUES
(10, 'Support', '2010-02-02'),
(12, 'Dev team', '2010-02-03'),
(13, 'Apps team', '2011-05-06'),
(14, 'TEST - dev team', '2013-05-06'),
(15, 'Guest', '2014-02-02'),
(16, 'TEST-QA-team', '2014-02-02'),
(17, 'TEST-team', '2011-01-07')
```

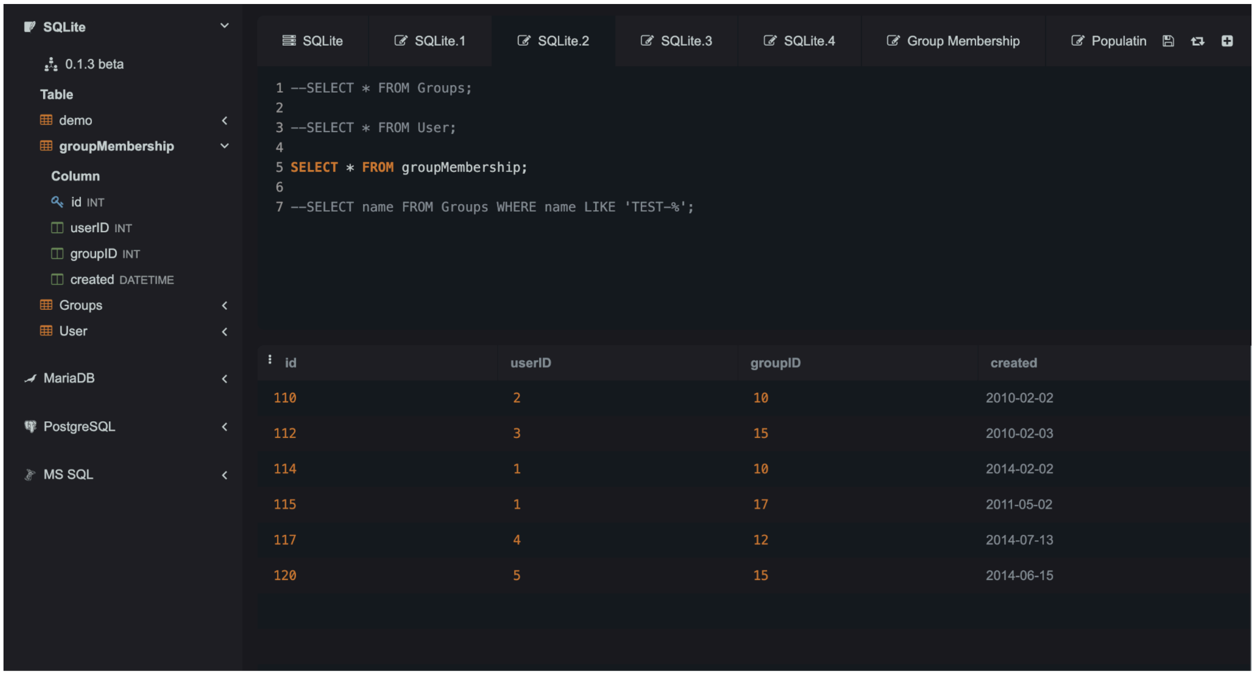


```
SELECT * FROM Groups;

--SELECT * FROM User;

--SELECT * FROM groupMembership;

--SELECT name FROM Groups WHERE name LIKE 'TEST-%';
```

id	name	created
10	Support	2010-02-02
12	Dev team	2010-02-03
13	Apps team	2011-05-06
14	TEST - dev team	2013-05-06
15	Guest	2014-02-02
16	TEST-QA-team	2014-02-02
17	TEST-team	2011-01-07

groupMembership Table

```
CREATE TABLE groupMembership (
id INT PRIMARY KEY,
userID INT,
groupID INT,
created DATETIME

FOREIGN KEY (userID) REFERENCES User(id),
FOREIGN KEY (groupID) REFERENCES Groups(id)
);

INSERT INTO groupMembership VALUES
(110, 2, 10, '2010-02-02'),
(112, 3, 15, '2010-02-03'),
(114, 1, 10, '2014-02-02'),
(115, 1, 17, '2011-05-02'),
(117, 4, 12, '2014-07-13'),
(120, 5, 15, '2014-06-15')
```

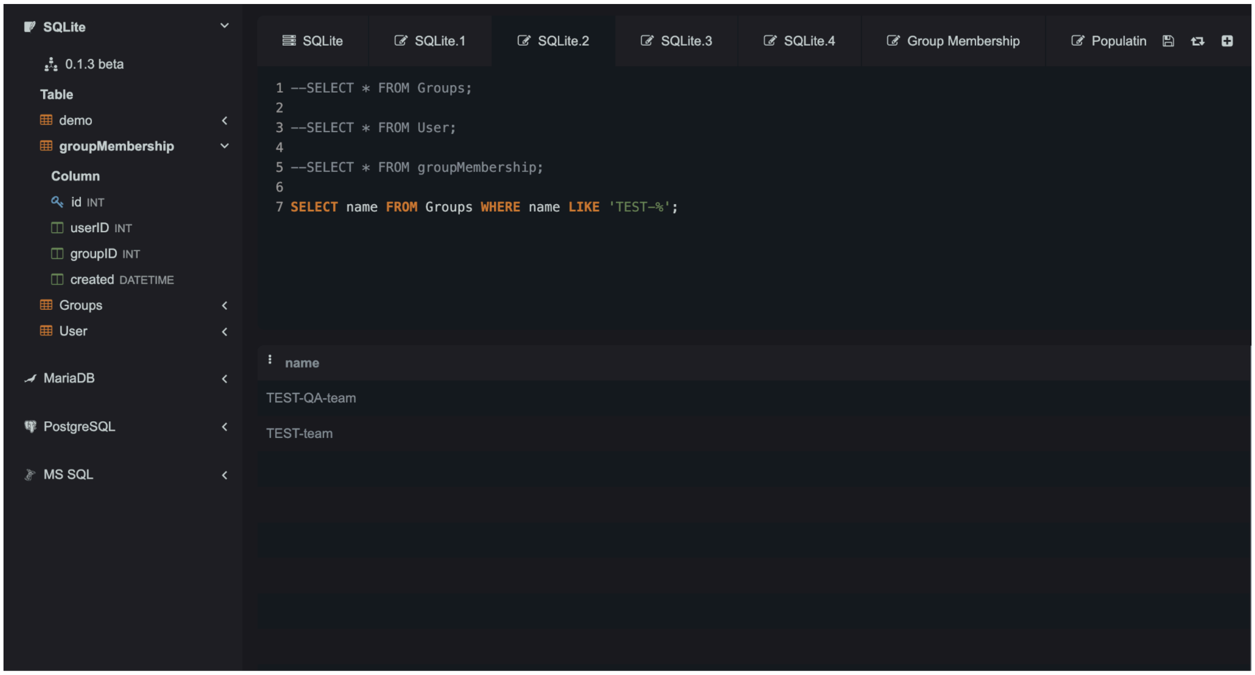


```
--SELECT * FROM Groups;

--SELECT * FROM User;

SELECT * FROM groupMembership;

--SELECT name FROM Groups WHERE name LIKE 'TEST-%';
```

id	userID	groupID	created
110	2	10	2010-02-02
112	3	15	2010-02-03
114	1	10	2014-02-02
115	1	17	2011-05-02
117	4	12	2014-07-13
120	5	15	2014-06-15

3.2 (group name starts with “TEST-”)

```
SELECT DISTINCT name
FROM Groups
WHERE name LIKE 'TEST%';
```

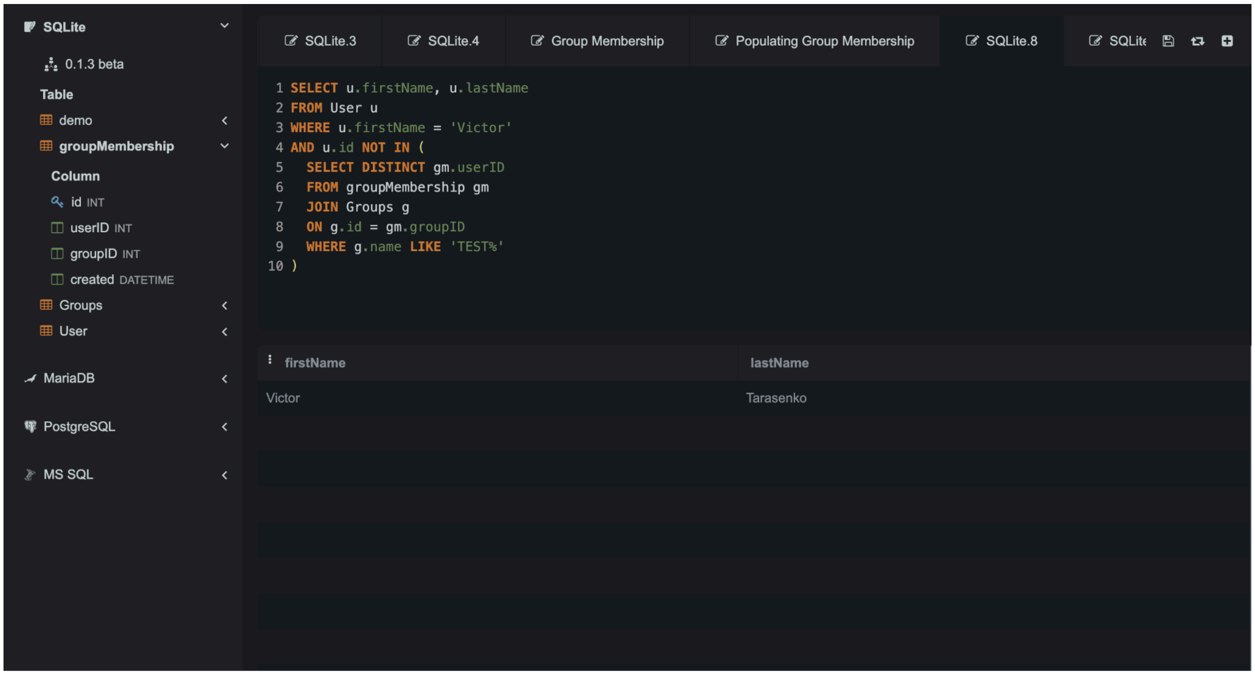


```
--SELECT * FROM Groups;

--SELECT * FROM User;

--SELECT * FROM groupMembership;

SELECT name FROM Groups WHERE name LIKE 'TEST-%';
```

name
TEST-QA-team
TEST-team

3.3 First and last name of ‘victor’ whose not in any groups

```
SELECT u.firstName, u.lastName
FROM User u
WHERE u.firstName = 'Victor'
AND u.id NOT IN (
  SELECT DISTINCT gm.userID
  FROM groupMembership gm
  JOIN Groups g
  ON g.id = gm.groupID
  WHERE g.name LIKE 'TEST%'
)
```

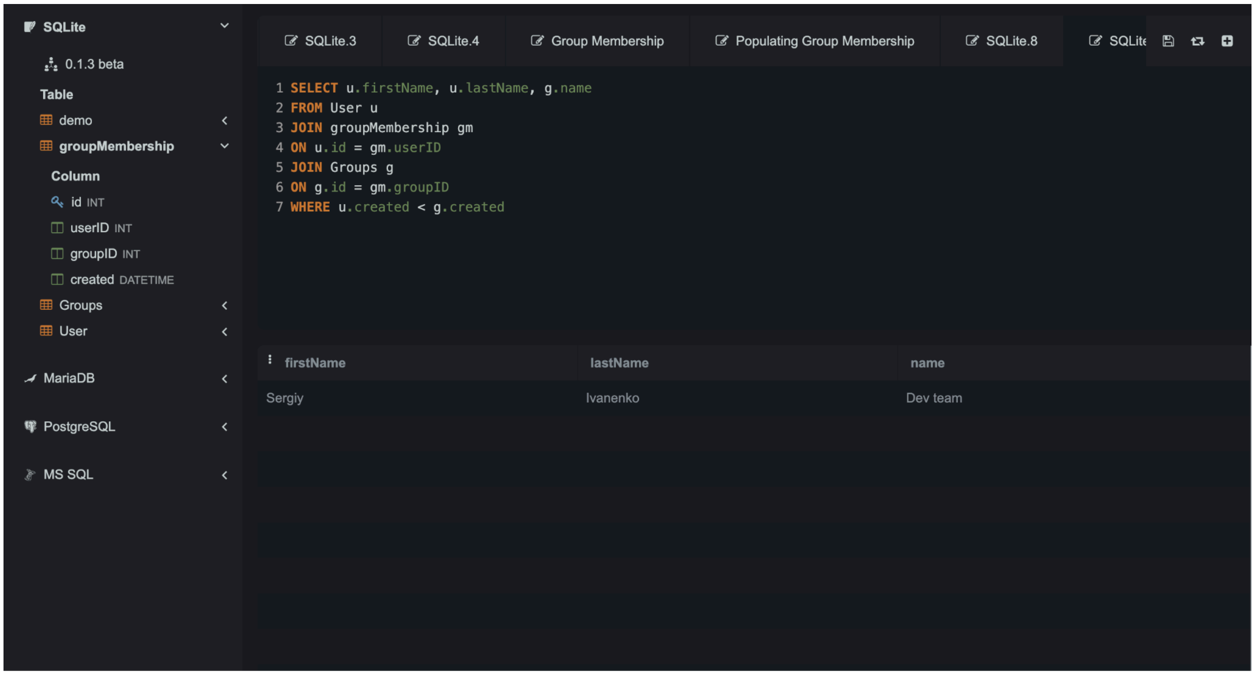


```
SELECT u.firstName, u.lastName
FROM User u
WHERE u.firstName = 'Victor'
AND u.id NOT IN (
  SELECT DISTINCT gm.userID
  FROM groupMembership gm
  JOIN Groups g
  ON g.id = gm.groupID
  WHERE g.name LIKE 'TEST%'
)
```

firstName	lastName
Victor	Tarasenko

3.4 Users created before the groups that they are in

```
SELECT u.firstName, u.lastName, g.name
FROM User u
JOIN groupMembership gm
ON u.id = gm.userID
JOIN Groups g
on g.id = gm.groupID
where u.created < g.created
```



```
SELECT u.firstName, u.lastName, g.name
FROM User u
JOIN groupMembership gm
ON u.id = gm.userID
JOIN Groups g
ON g.id = gm.groupID
WHERE u.created < g.created
```

firstName	lastName	name
Sergiy	Ivanenko	Dev team

Sources ->
https://learn.microsoft.com/en-us/sql/t-sql/language-elements/like-transact-sql?view=sql-server-ver16
https://learn.microsoft.com/en-us/sql/relational-databases/performance/joins?view=sql-server-ver16
https://www.youtube.com/watch?v=tlvxb7UduJw