Automatic Sampling and Analysis of YouTube Data

Setting Up Access to the YouTube API

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2020-02-10

Setting up API access to the *YouTube* API

To effectively work with *YouTube* data, we need access to its Application Programming Interface (API). As this process, unfortunately, can be a bit tedious, we prepared this preliminary tutorial so you don't have to spend time setting up your API access during the workshop. Please follow this tutorial and check if the setup works before the workshop. If your setup does not work, feel free to contact us before the workshop (the sooner the better) and we'll try to assist you in setting up access to the *YouTube* API. If, for some reason, setting up access to the API does not work for you and we don't find a solution or if you cannot access the API during the workshop, we will have some data prepared that you can then work with in the workshop.

HINT: Pink texts are hyperlinks to the respective website that you can simply click on

Setting up API Access

- For starters, you need a *Google* account
- You can use an existing one or create a new one

- We suggest that you create a new account (if you accidentally share your login credentials, people using the credentials only have access to this account and not your personal or work account)

- You can create a new account here

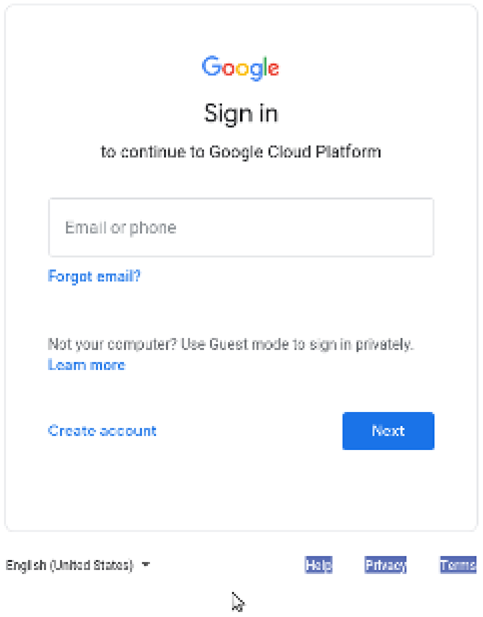
- Next, we need to:

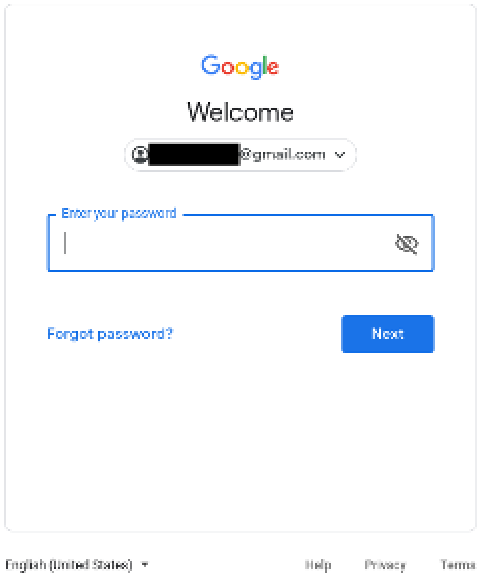
    - Sign up for the *Google* developer console
    - Create a new project
    - Activate the *YouTube* Data API
    - Create authentification credentials
    - Test the credentials

We will explain these steps in detail on the following slides.

Google Developer Console

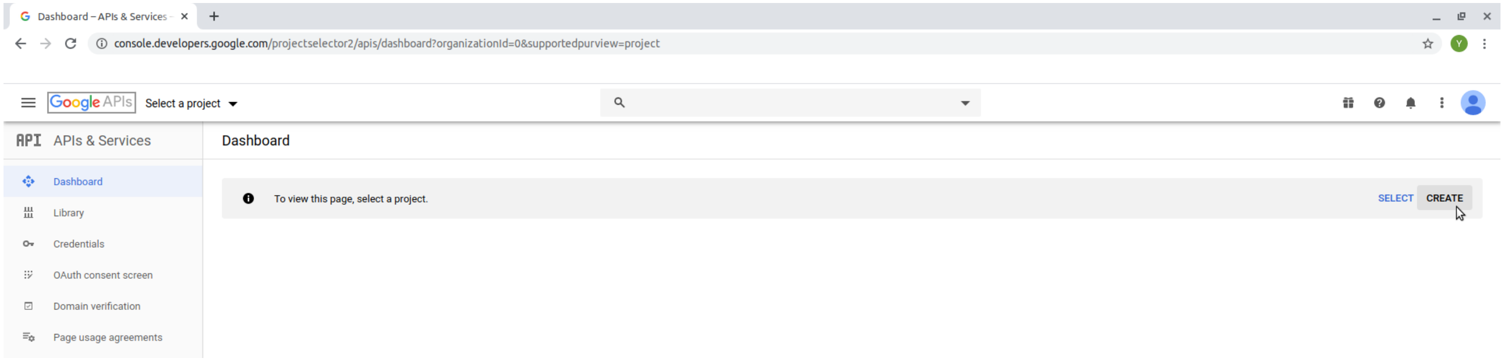
- Go to the Developer Console and log in with your (new) *Google* Account





Google Developer Console

- Create a new project by clicking the "Create" button in the top right corner



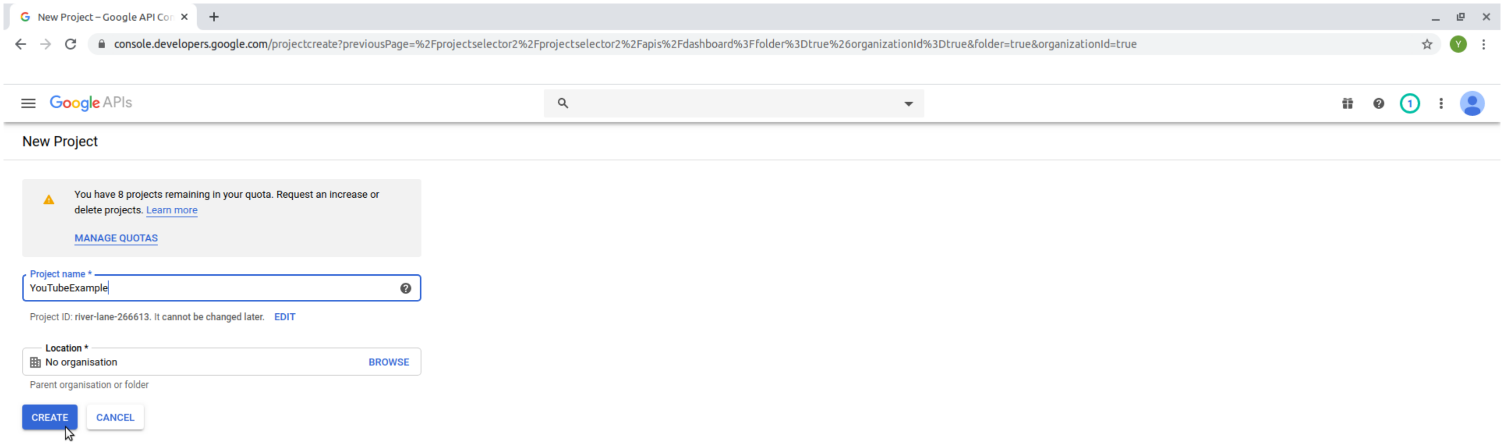
To view this page, select a project.

Project Limit

- You only have a limited number of Projects that you can create, so be careful not to constantly delete and create new ones!
- More information on project limits can be found here

Creating a New Project

- Specify a project name (you do not have to specify an organisation) and click "create" once you are done


New Project – Google API Con

console.developers.google.com/projectcreate?previousPage=%2Fprojectselector2%2Fprojectselector2%2Fapis%2Fdashboard%3Ffolder%3Dtrue%26organizationId%3Dtrue&folder=true&organizationId=true

Google APIs

New Project

You have 8 projects remaining in your quota. Request an increase or delete projects. Learn more

MANAGE QUOTAS

Project name *
YouTubeExample

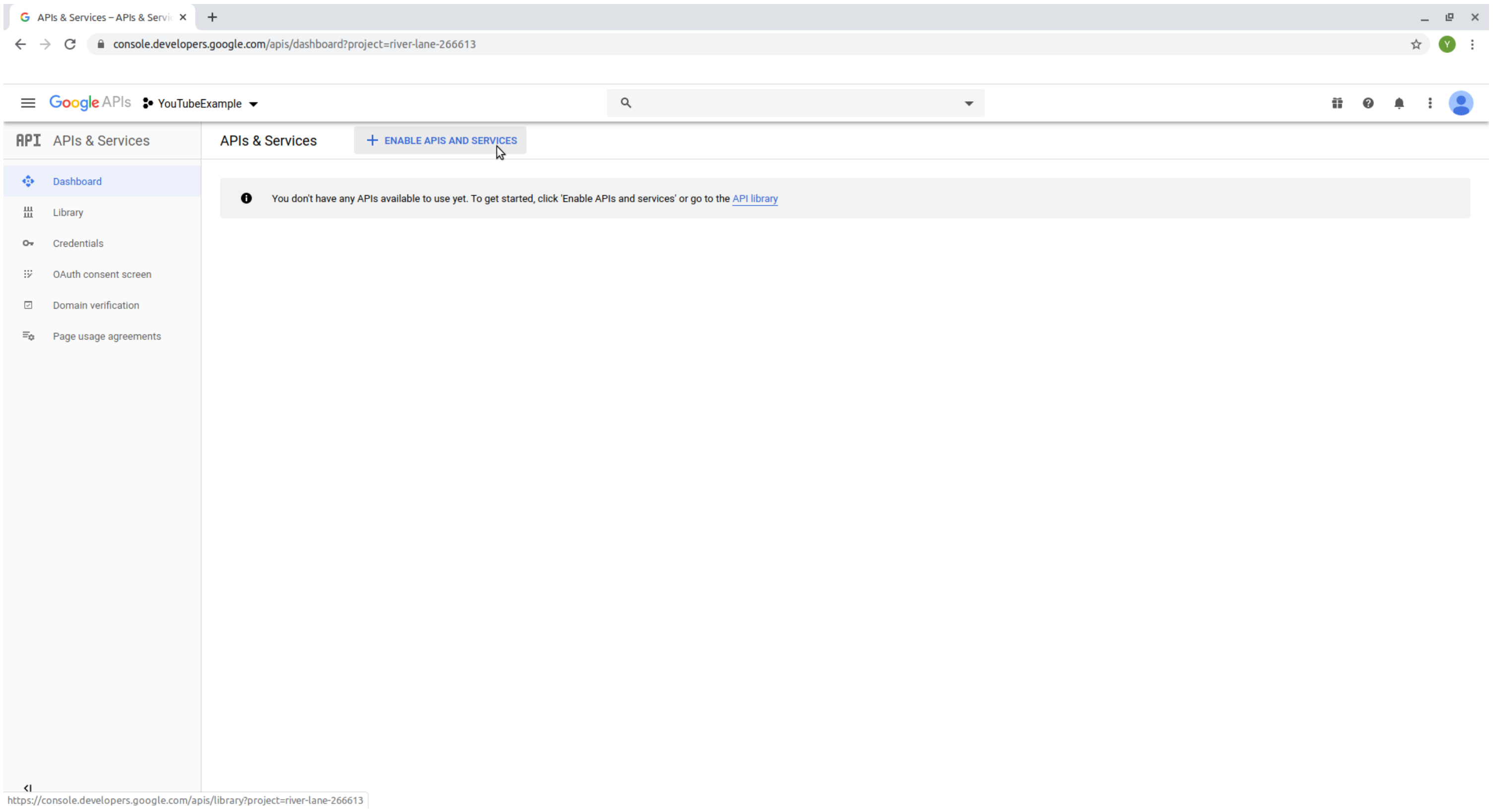
Project ID: river-lane-266613. It cannot be changed later. EDIT

Location *
No organisation BROWSE
Parent organisation or folder

CREATE CANCEL

Activate the YouTube Data v3 API

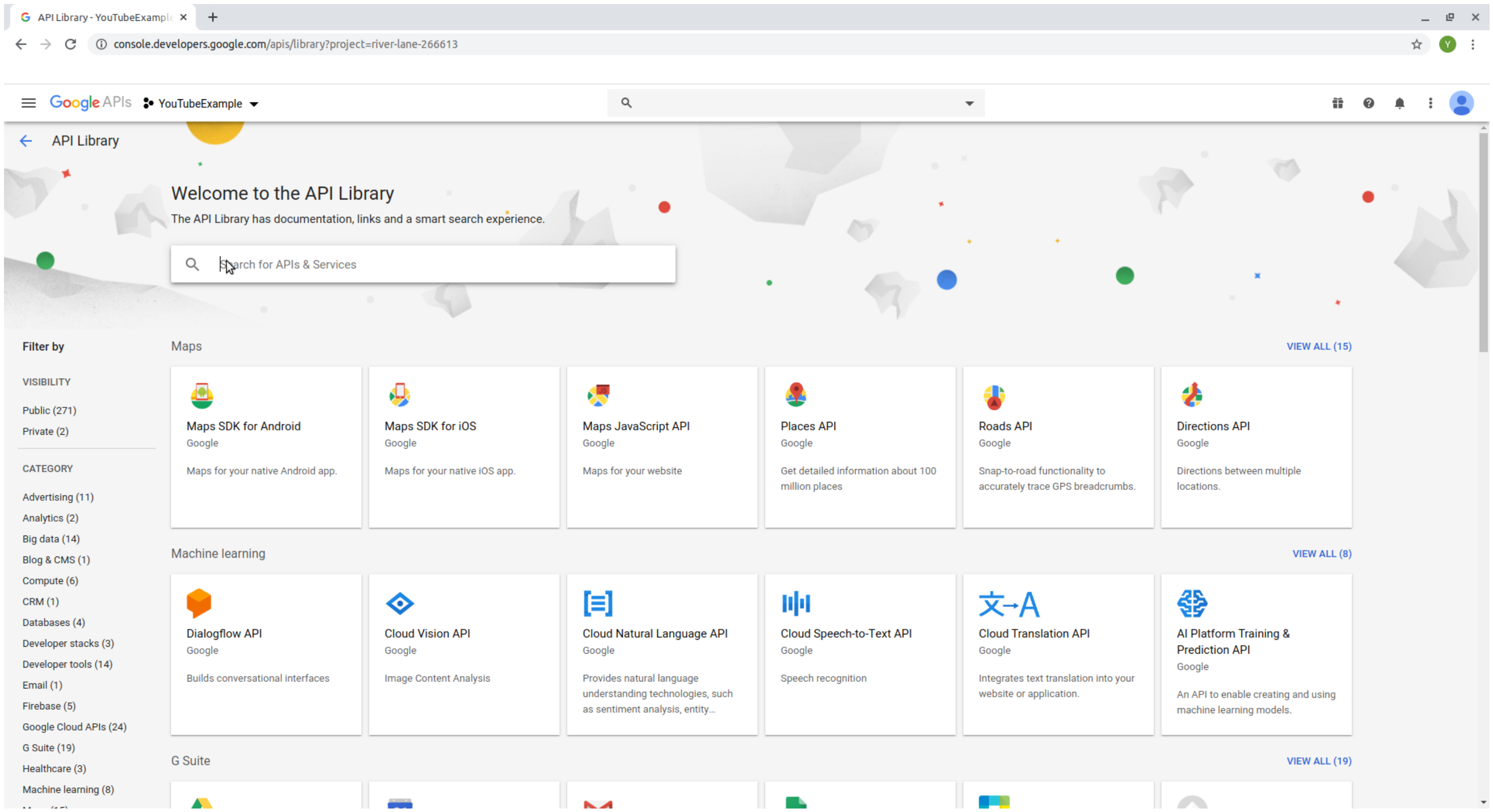
- Click the button "Enable APIs and Services"


APIs & Services – APIs & Servi
console.developers.google.com/apis/dashboard?project=river-lane-266613
Google APIs
YouTubeExample
API APIs & Services
APIs & Services
+ ENABLE APIS AND SERVICES
Dashboard
Library
Credentials
OAuth consent screen
Domain verification
Page usage agreements
https://console.developers.google.com/apis/library?project=river-lane-266613

You don't have any APIs available to use yet. To get started, click 'Enable APIs and services' or go to the API library

Activate the YouTube Data v3 API

- Enter "YouTube" in the search bar



API Library - YouTubeExample

console.developers.google.com/apis/library?project=river-lane-266613

Google APIs YouTubeExample

API Library

Welcome to the API Library

The API Library has documentation, links and a smart search experience.

Search for APIs & Services

Filter by

VISIBILITY

Public (271)
Private (2)

CATEGORY

Advertising (11)
Analytics (2)
Big data (14)
Blog & CMS (1)
Compute (6)
CRM (1)
Databases (4)
Developer stacks (3)
Developer tools (14)
Email (1)
Firebase (5)
Google Cloud APIs (24)
G Suite (19)
Healthcare (3)
Machine learning (8)

Maps — VIEW ALL (15)

Maps SDK for Android — Google — Maps for your native Android app.

Maps SDK for iOS — Google — Maps for your native iOS app.

Maps JavaScript API — Google — Maps for your website

Places API — Google — Get detailed information about 100 million places

Roads API — Google — Snap-to-road functionality to accurately trace GPS breadcrumbs.

Directions API — Google — Directions between multiple locations.

Machine learning — VIEW ALL (8)

Dialogflow API — Google — Builds conversational interfaces

Cloud Vision API — Google — Image Content Analysis

Cloud Natural Language API — Google — Provides natural language understanding technologies, such as sentiment analysis, entity...

Cloud Speech-to-Text API — Google — Speech recognition

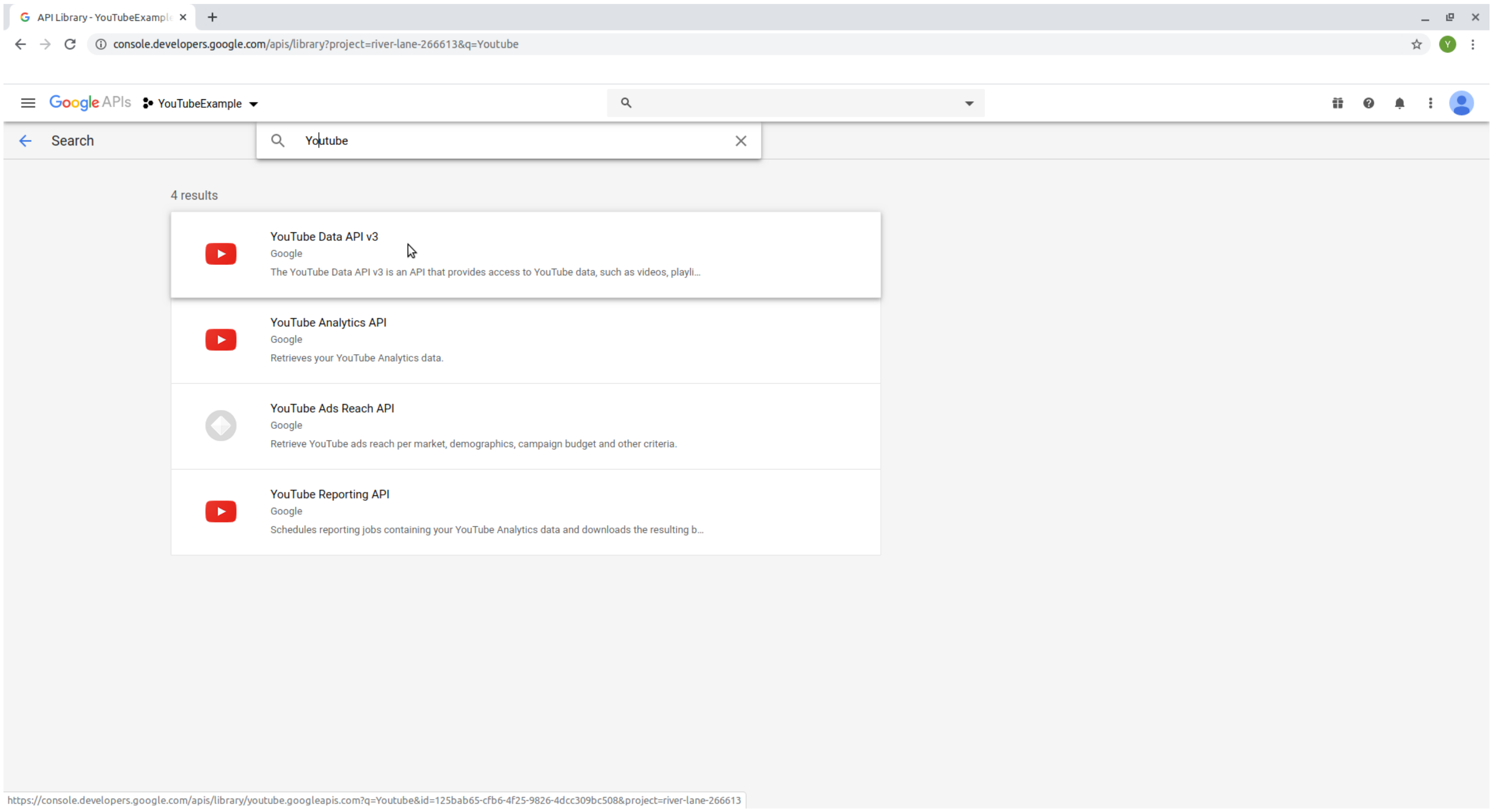
Cloud Translation API — Google — Integrates text translation into your website or application.

AI Platform Training & Prediction API — Google — An API to enable creating and using machine learning models.

G Suite — VIEW ALL (19)

Activate the YouTube Data v3 API

- Click on "YouTube Data API v3"



API Library - YouTubeExample
console.developers.google.com/apis/library?project=river-lane-266613&q=Youtube
Google APIs
YouTubeExample
Search
Youtube

4 results

YouTube Data API v3
Google
The YouTube Data API v3 is an API that provides access to YouTube data, such as videos, playli...

YouTube Analytics API
Google
Retrieves your YouTube Analytics data.

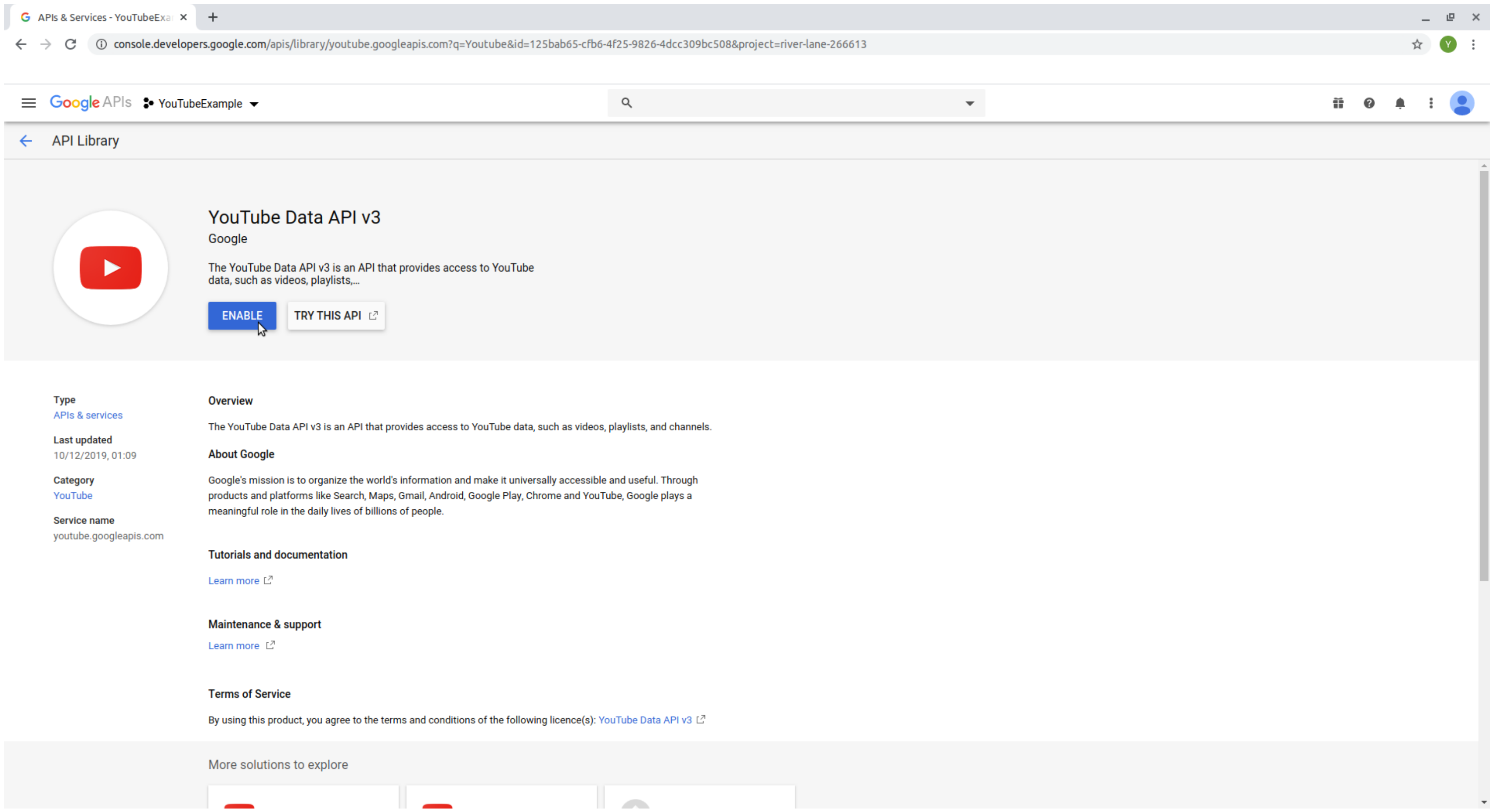
YouTube Ads Reach API
Google
Retrieve YouTube ads reach per market, demographics, campaign budget and other criteria.

YouTube Reporting API
Google
Schedules reporting jobs containing your YouTube Analytics data and downloads the resulting b...

https://console.developers.google.com/apis/library/youtube.googleapis.com?q=Youtube&id=125bab65-cfb6-4f25-9826-4dcc309bc508&project=river-lane-266613

Activate the YouTube Data v3 API

- Activate the API by clicking the "Enable" button


APIs & Services - YouTubeExa
console.developers.google.com/apis/library/youtube.googleapis.com?q=Youtube&id=125bab65-cfb6-4f25-9826-4dcc309bc508&project=river-lane-266613
Google APIs
YouTubeExample
API Library
ENABLE
TRY THIS API
Learn more
Learn more
More solutions to explore

YouTube Data API v3
Google

The YouTube Data API v3 is an API that provides access to YouTube data, such as videos, playlists,...

Type
APIs & services

Last updated
10/12/2019, 01:09

Category
YouTube

Service name
youtube.googleapis.com

Overview

The YouTube Data API v3 is an API that provides access to YouTube data, such as videos, playlists, and channels.

About Google

Google's mission is to organize the world's information and make it universally accessible and useful. Through products and platforms like Search, Maps, Gmail, Android, Google Play, Chrome and YouTube, Google plays a meaningful role in the daily lives of billions of people.

Tutorials and documentation

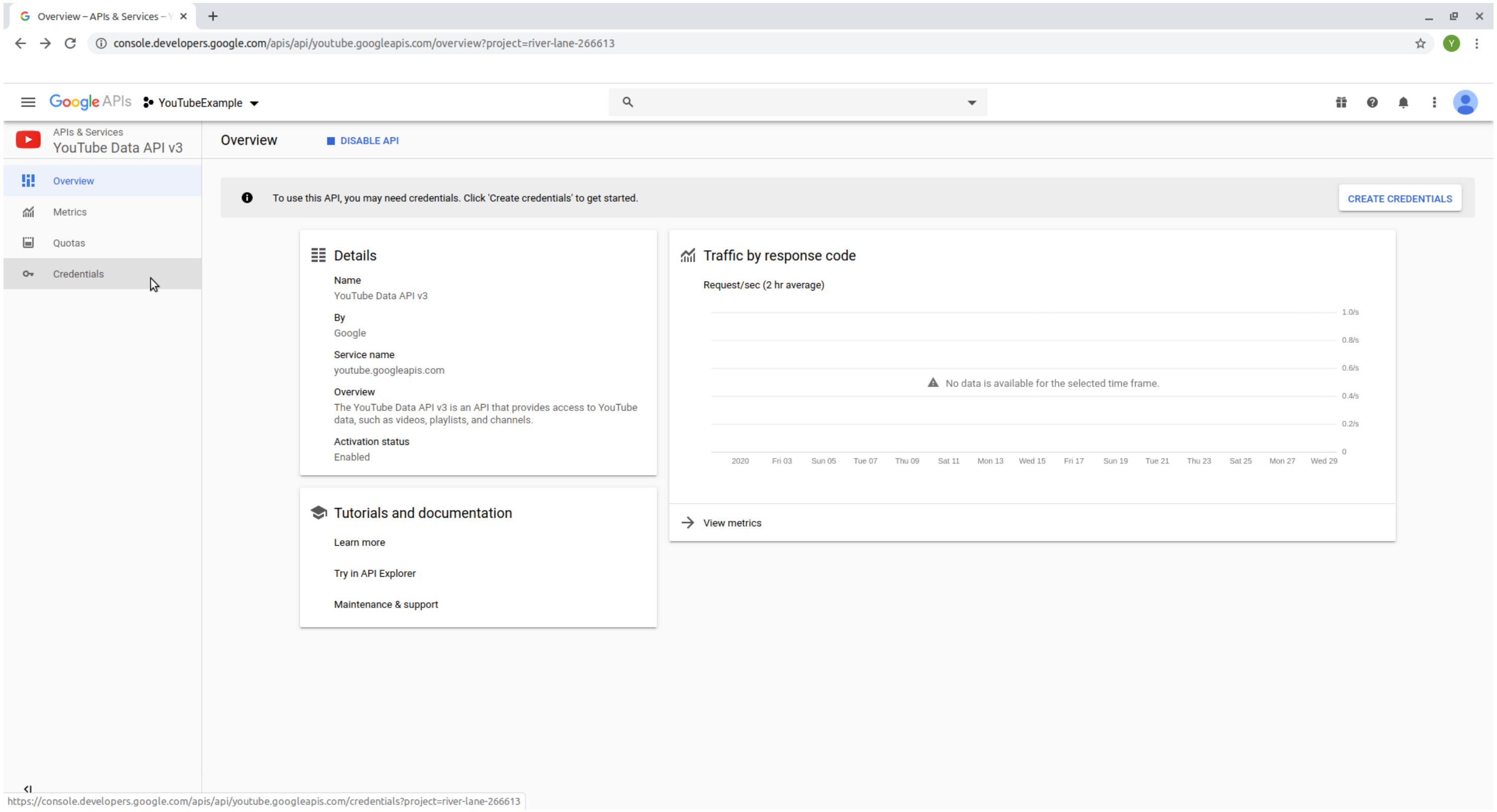
Maintenance & support

Terms of Service

By using this product, you agree to the terms and conditions of the following licence(s): YouTube Data API v3

Obtaining OAuth credentials

- The API is now enabled, but we still need credentials to use it
- Click on the "Credentials" pane in the menu on the left side



Overview – APIs & Services

console.developers.google.com/apis/api/youtube.googleapis.com/overview?project=river-lane-266613

Google APIs YouTubeExample

APIs & Services
YouTube Data API v3

Overview | DISABLE API

- Overview
- Metrics
- Quotas
- Credentials

To use this API, you may need credentials. Click 'Create credentials' to get started. CREATE CREDENTIALS

Details

Name
YouTube Data API v3

By
Google

Service name
youtube.googleapis.com

Overview
The YouTube Data API v3 is an API that provides access to YouTube data, such as videos, playlists, and channels.

Activation status
Enabled

Traffic by response code

Request/sec (2 hr average)

No data is available for the selected time frame.

View metrics

Tutorials and documentation

Learn more

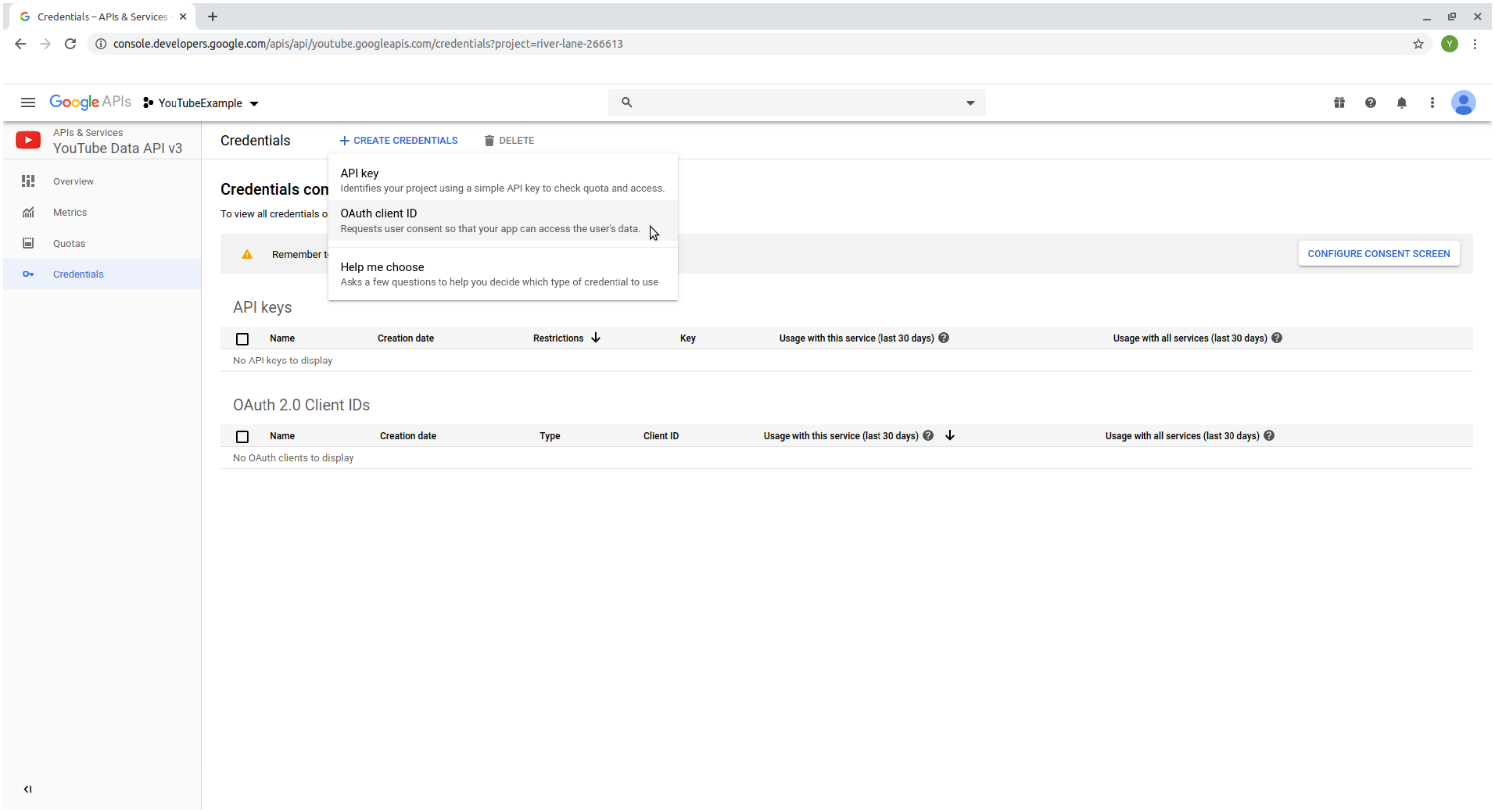
Try in API Explorer

Maintenance & support

https://console.developers.google.com/apis/api/youtube.googleapis.com/credentials?project=river-lane-266613

Obtaining OAuth credentials

- Click the "+ Create Credentials" button and select "OAuth Client ID" from the dropdown menu



Credentials

API key
Identifies your project using a simple API key to check quota and access.

OAuth client ID
Requests user consent so that your app can access the user's data.

Help me choose
Asks a few questions to help you decide which type of credential to use

Credentials con

To view all credentials o

Remember t

API keys

Name	Creation date	Restrictions	Key	Usage with this service (last 30 days)	Usage with all services (last 30 days)
No API keys to display					

OAuth 2.0 Client IDs

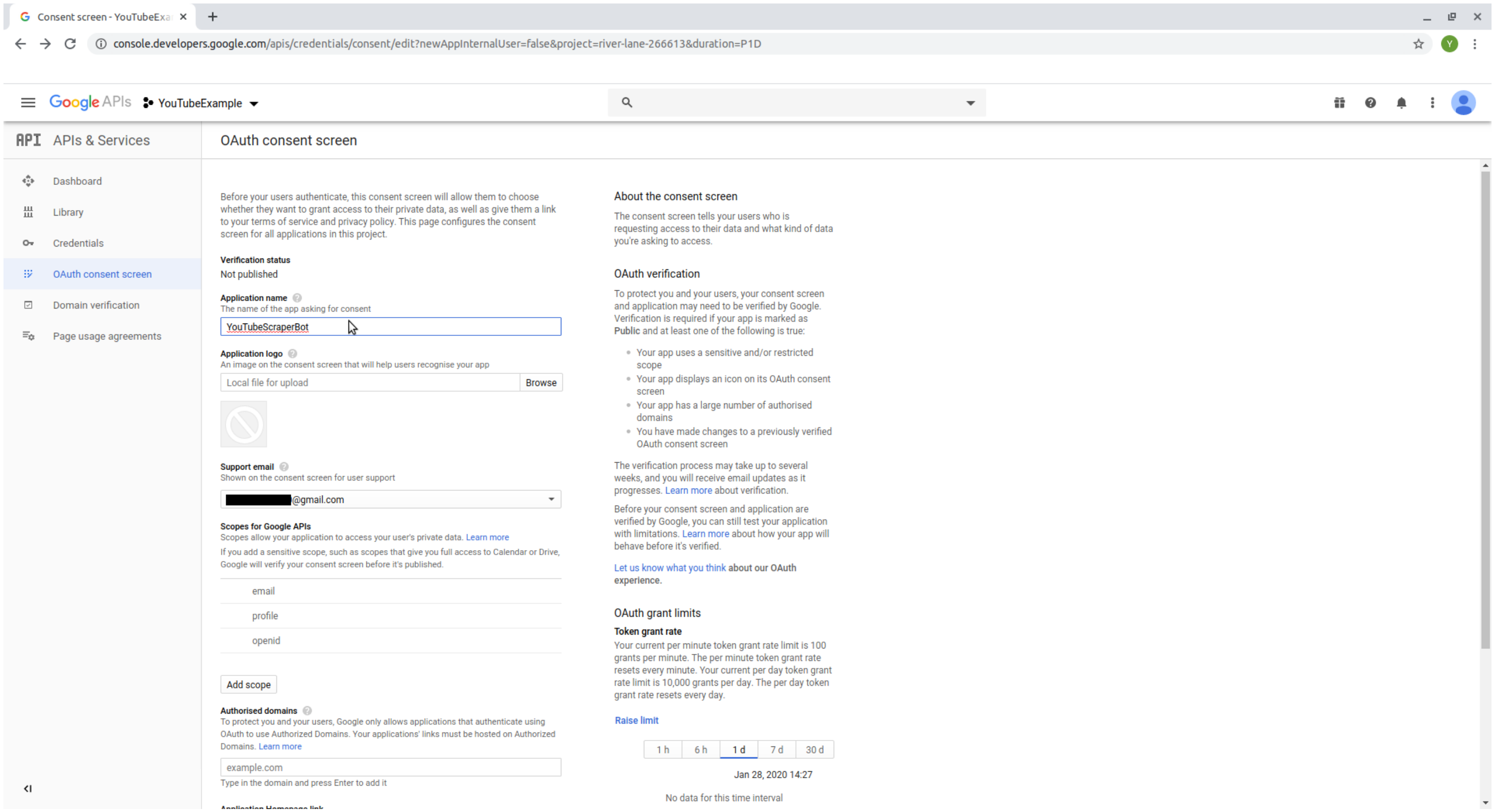
Name	Creation date	Type	Client ID	Usage with this service (last 30 days)	Usage with all services (last 30 days)
No OAuth clients to display					

Obtaining OAuth credentials

- To be able to create new credentials, we first need to configure a consent screen for our "app"
- Click the blue "Configure Consent Screen" button on the right side of your screen

Configuring the Consent Screen

- Enter the name of your "app" in the the field "application name", scroll to the bottom of the page, and click "save"



Consent screen - YouTubeExa
console.developers.google.com/apis/credentials/consent/edit?newAppInternalUser=false&project=river-lane-266613&duration=P1D
Google APIs
YouTubeExample
API APIs & Services
Dashboard
Library
Credentials
OAuth consent screen
Domain verification
Page usage agreements

OAuth consent screen

Before your users authenticate, this consent screen will allow them to choose whether they want to grant access to their private data, as well as give them a link to your terms of service and privacy policy. This page configures the consent screen for all applications in this project.

Verification status
Not published

Application name
The name of the app asking for consent
YouTubeScraperBot

Application logo
An image on the consent screen that will help users recognise your app
Local file for upload | Browse

Support email
Shown on the consent screen for user support
[redacted]@gmail.com

Scopes for Google APIs
Scopes allow your application to access your user's private data. Learn more
If you add a sensitive scope, such as scopes that give you full access to Calendar or Drive, Google will verify your consent screen before it's published.
email
profile
openid

Add scope

Authorised domains
To protect you and your users, Google only allows applications that authenticate using OAuth to use Authorized Domains. Your applications' links must be hosted on Authorized Domains. Learn more
example.com
Type in the domain and press Enter to add it

About the consent screen

The consent screen tells your users who is requesting access to their data and what kind of data you're asking to access.

OAuth verification

To protect you and your users, your consent screen and application may need to be verified by Google. Verification is required if your app is marked as **Public** and at least one of the following is true:

- Your app uses a sensitive and/or restricted scope
- Your app displays an icon on its OAuth consent screen
- Your app has a large number of authorised domains
- You have made changes to a previously verified OAuth consent screen

The verification process may take up to several weeks, and you will receive email updates as it progresses. Learn more about verification.

Before your consent screen and application are verified by Google, you can still test your application with limitations. Learn more about how your app will behave before it's verified.

Let us know what you think **about our OAuth experience.**

OAuth grant limits

Token grant rate
Your current per minute token grant rate limit is 100 grants per minute. The per minute token grant rate resets every minute. Your current per day token grant rate limit is 10,000 grants per day. The per day token grant rate resets every day.

Raise limit

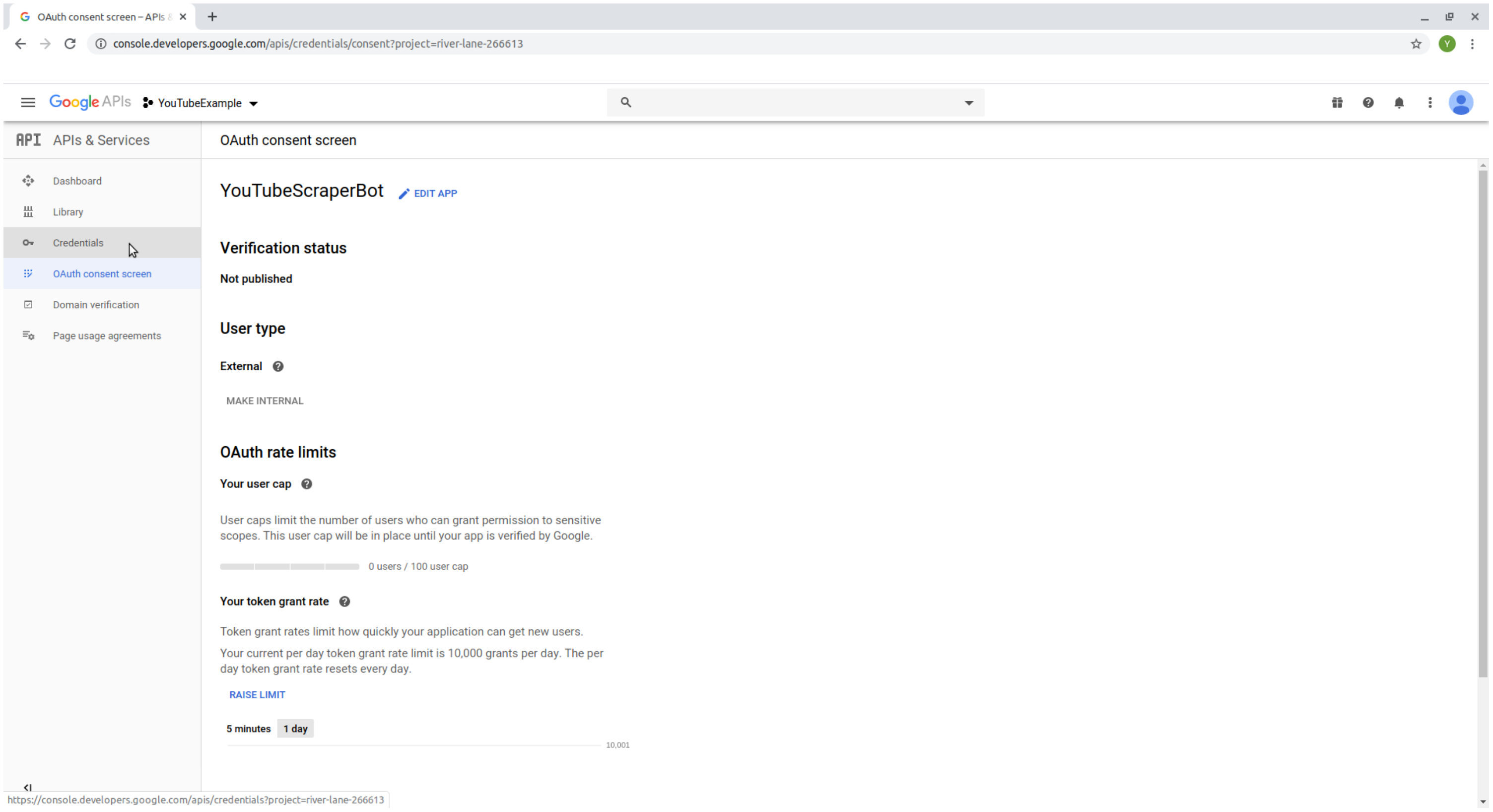
1 h | 6 h | 1 d | 7 d | 30 d

Jan 28, 2020 14:27

No data for this time interval

Obtaining OAuth credentials

- On the following screen, select the "Credentials" pane again from the menu on the left side of your screen



Verification status

Not published

User type

External

OAuth rate limits

Your user cap

User caps limit the number of users who can grant permission to sensitive scopes. This user cap will be in place until your app is verified by Google.

0 users / 100 user cap

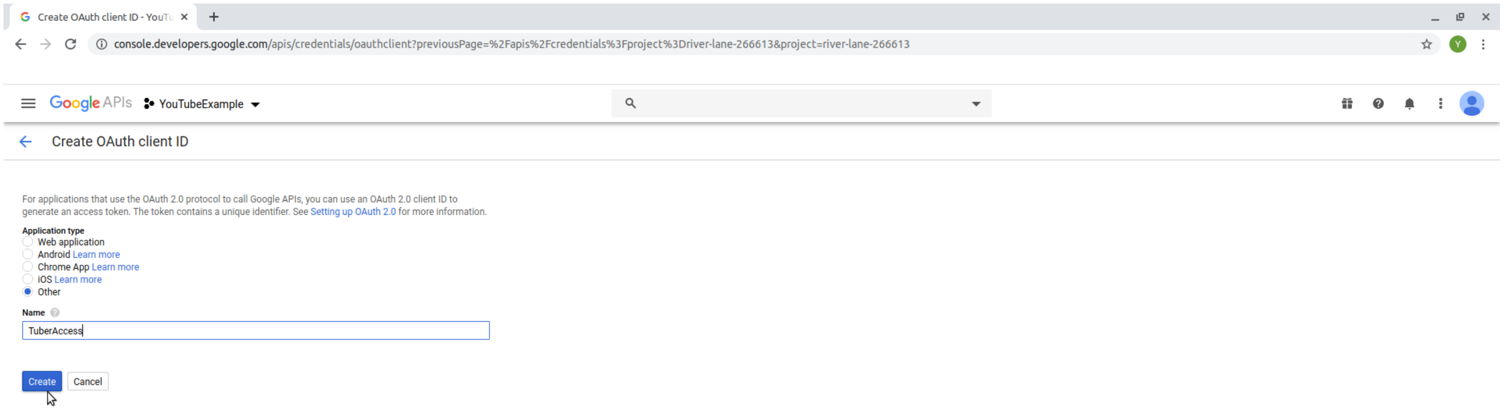
Your token grant rate

Token grant rates limit how quickly your application can get new users.

Your current per day token grant rate limit is 10,000 grants per day. The per day token grant rate resets every day.

Obtaining OAuth Credentials

- Select the application type "other" and enter a name for your set of credentials. Afterwards, click "create".


Create OAuth client ID - YouTu
console.developers.google.com/apis/credentials/oauthclient?previousPage=%2Fapis%2Fcredentials%3Fproject%3Driver-lane-266613&project=river-lane-266613
Google APIs
YouTubeExample

Create OAuth client ID

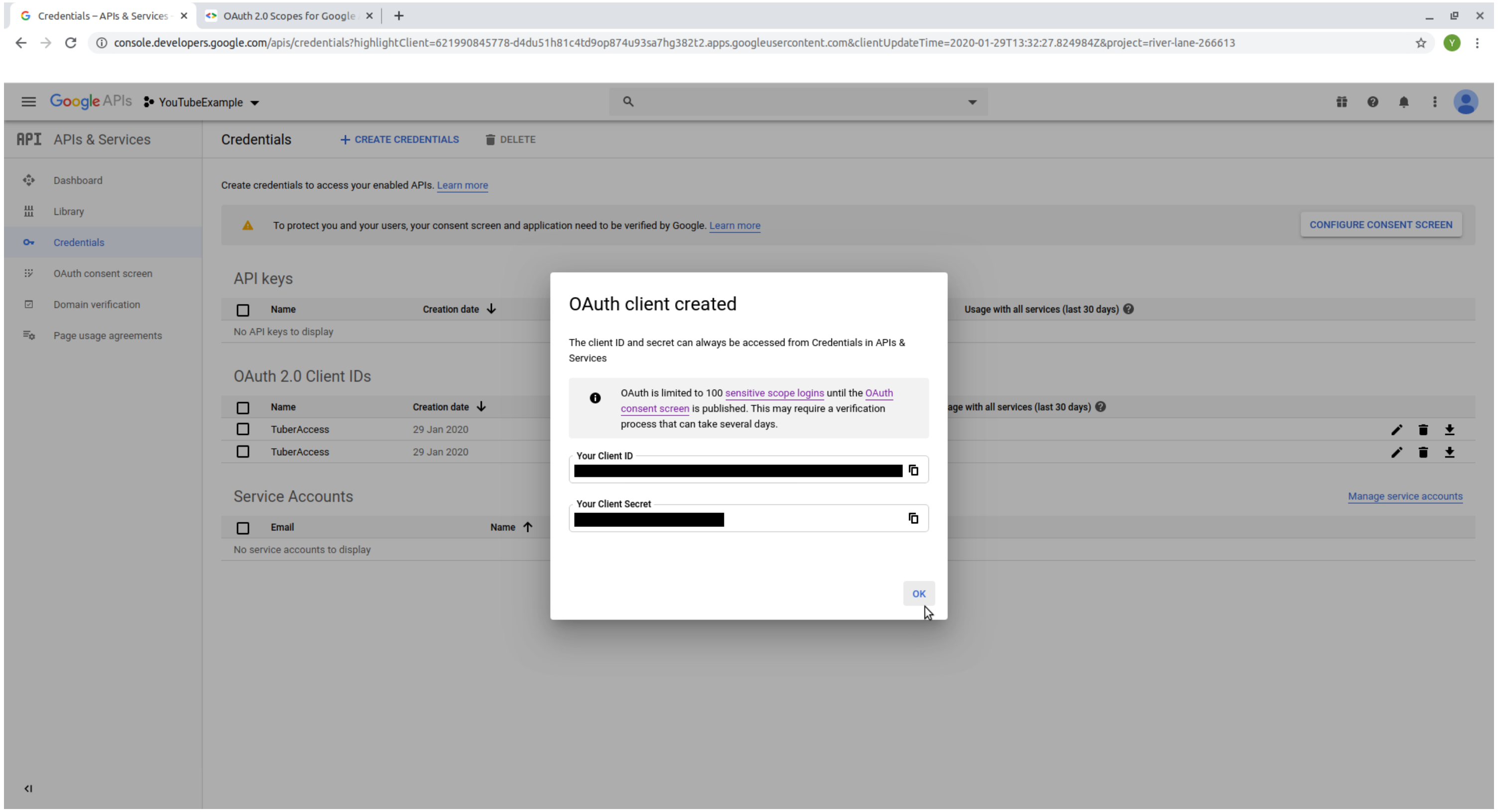
For applications that use the OAuth 2.0 protocol to call Google APIs, you can use an OAuth 2.0 client ID to generate an access token. The token contains a unique identifier. See Setting up OAuth 2.0 for more information.

Application type
- Web application
- Android Learn more
- Chrome App Learn more
- iOS Learn more
- [✓ Other]

Name
TuberAccess

OAuth Credentials Obtained

- You now have our first set of OAuth credentials for using the YouTube API
- Don't worry about closing the window, we can access them again anytime



console.developers.google.com/apis/credentials?highlightClient=621990845778-d4du51h81c4td9op874u93sa7hg382t2.apps.googleusercontent.com&clientUpdateTime=2020-01-29T13:32:27.824984Z&project=river-lane-266613

Create credentials to access your enabled APIs. Learn more

To protect you and your users, your consent screen and application need to be verified by Google. Learn more

OAuth client created

The client ID and secret can always be accessed from Credentials in APIs & Services

OAuth is limited to 100 sensitive scope logins until the OAuth consent screen is published. This may require a verification process that can take several days.

Your Client ID: [redacted]

Your Client Secret: [redacted]

API keys

No API keys to display

OAuth 2.0 Client IDs

Name	Creation date
TuberAccess	29 Jan 2020
TuberAccess	29 Jan 2020

Service Accounts

No service accounts to display

A Few Words of Advice on Handling Your *YouTube* API Access

- Have one account and project ready for the workshop for which you know that it works
- Do not use your API access too excessively before the workshop to avoid any risk of it being suspended
- Never share your OAuth login credentials! This can easily happen by accident when
  - saving code in a GitHub Repo
  - sending scripts to colleagues
  - troubleshooting someone elses code
  - for added security you can use the `keyring` package (we'll say a bit more about this in the workshop)

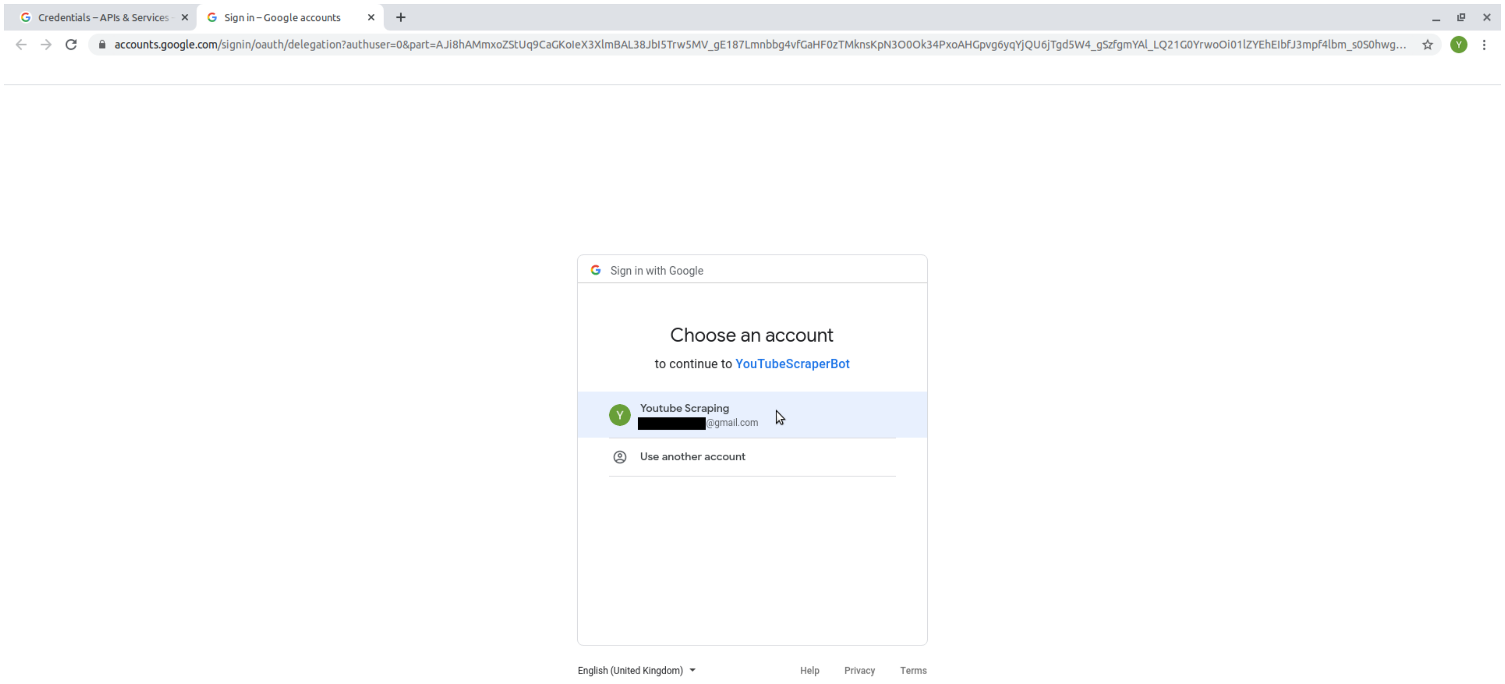
Testing Access

- You can try whether your *YouTube* API access works as intendend by running the following commands in R:

```r
# installing the tuber package
install.packages("tuber")

# loading tuber package
library(tuber)

# Your Credentials (NEVER SHARE THIS INFORMATION)
ID <- "ENTER-YOUR-APP-ID"
secret <- "ENTER-YOUR-APP-SECRET"

# authentication
yt_oauth(ID,secret)

# You will be asked in the R-console to
# save an access token: Select no

# You will be send to your browser to
# login with your account
```

Login

- Select the *Google* Account that you used to set up the credentials


Credentials – APIs & Services
Sign in – Google accounts
accounts.google.com/signin/oauth/delegation?authuser=0&part=AJi8hAMmxoZStUq9CaGKoIeX3XlmBAL38JbI5Trw5MV_gE187Lmnbbg4vfGaHF0zTMknsKpN3O0Ok34PxoAHGpvg6yqYjQU6jTgd5W4_gSzfgmYAl_LQ21G0YrwoOi01lZYEhEIbfJ3mpf4lbm_s0S0hwg...
Sign in with Google

Choose an account

to continue to YouTubeScraperBot

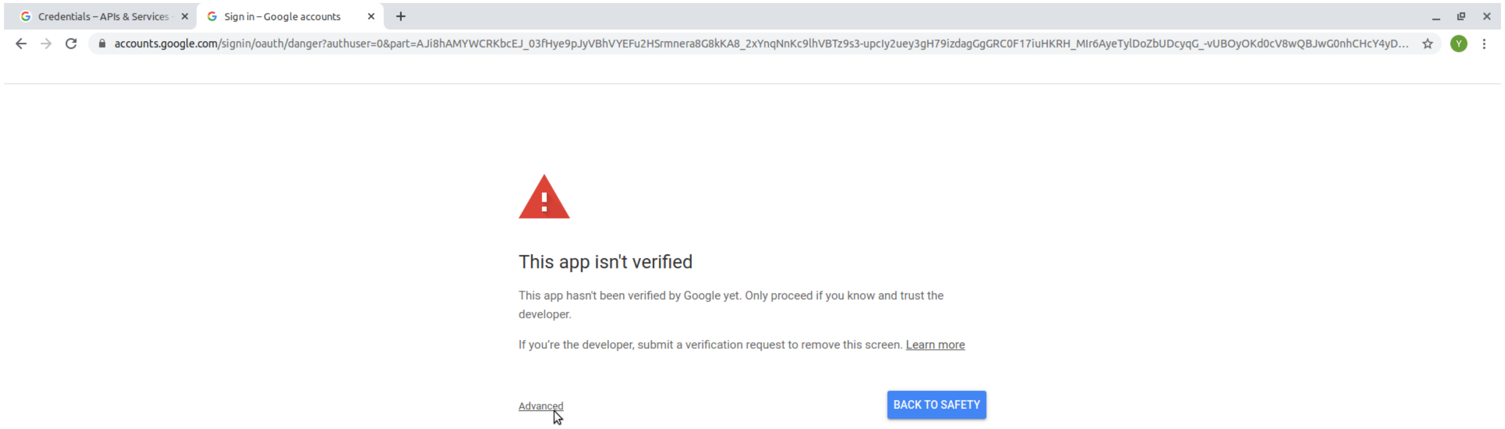
Youtube Scraping
[redacted]@gmail.com

Use another account

English (United Kingdom)
Help
Privacy
Terms

Granting Access to Your "Unsecure App" (1)

- As we did not verify our "App", *Google* labels it as "unsecure"
- Because we're the only ones using it, this shouldn't bother us. Click "Advanced" on the bottom left


Credentials – APIs & Services
Sign in – Google accounts
accounts.google.com/signin/oauth/danger?authuser=0&part=AJi8hAMYWCRKbcEJ_03fHye9pJyVBhVYEFu2HSrmnera8G8kKA8_2xYnqNnKc9lhVBTz9s3-upcly2uey3gH79izdagGgGRC0F17iuHKRH_MIr6AyeTylDoZbUDcyqG_-vUBOyOKd0cV8wQBJwG0nhCHcY4yD...

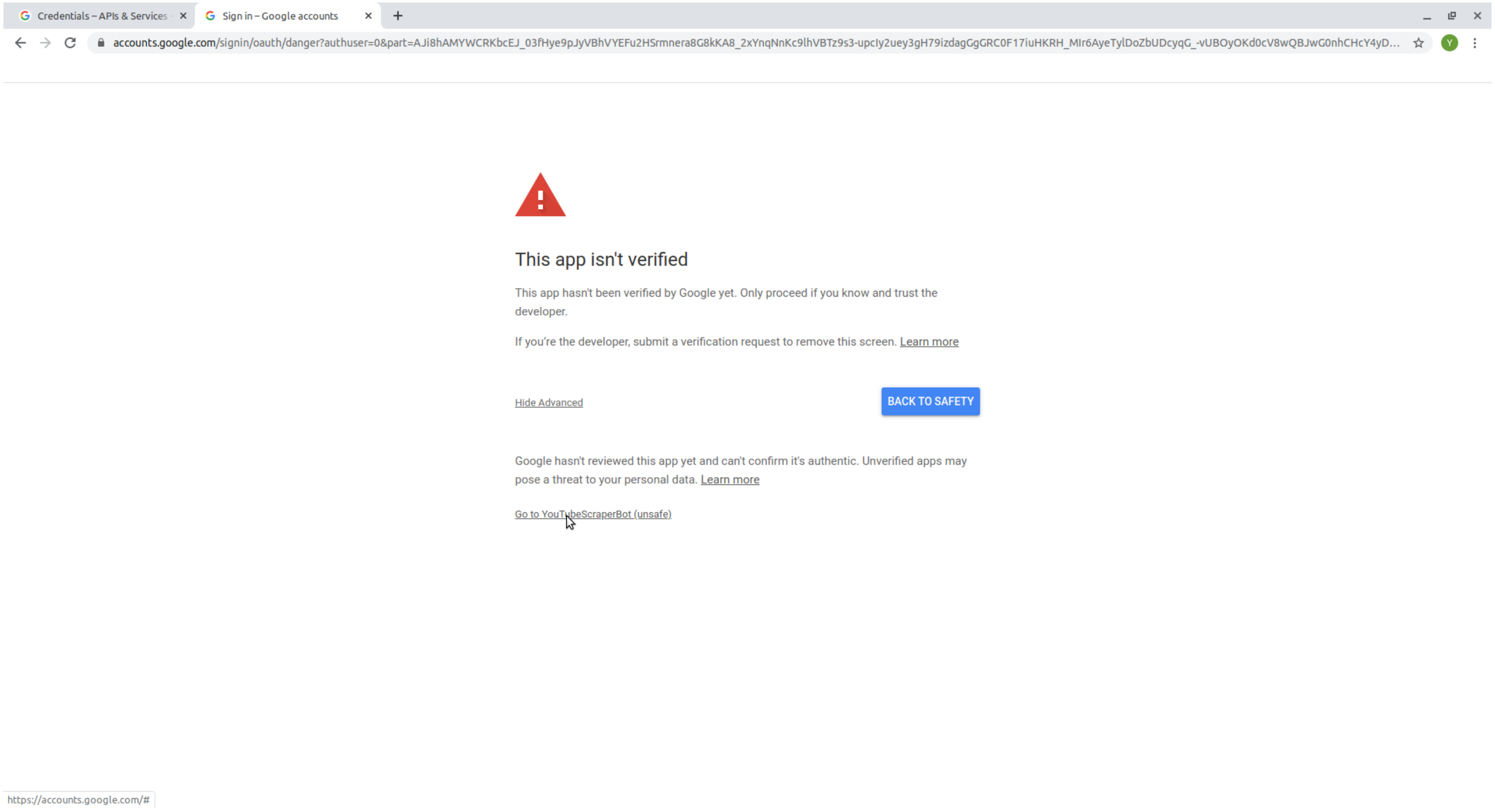
This app isn't verified

This app hasn't been verified by Google yet. Only proceed if you know and trust the developer.

If you're the developer, submit a verification request to remove this screen. Learn more

Granting Access to Your "Unsecure App" (2)

- Click "Go to [Name of your App] (unsafe)" on the bottom left of your screen



Credentials – APIs & Services

Sign in – Google accounts

accounts.google.com/signin/oauth/danger?authuser=0&part=AJi8hAMYWCRKbcEJ_03fHye9pJyVBhVYEFu2HSrmnera8G8kKA8_2xYnqNnKc9lhVBTz9s3-upcIy2uey3gH79izdagGgGRC0F17iuHKRH_MIr6AyeTylDoZbUDcyqG_-vUBOyOKd0cV8wQBJwG0nhCHcY4yD...

This app isn't verified

This app hasn't been verified by Google yet. Only proceed if you know and trust the developer.

If you're the developer, submit a verification request to remove this screen. Learn more

Hide Advanced

BACK TO SAFETY

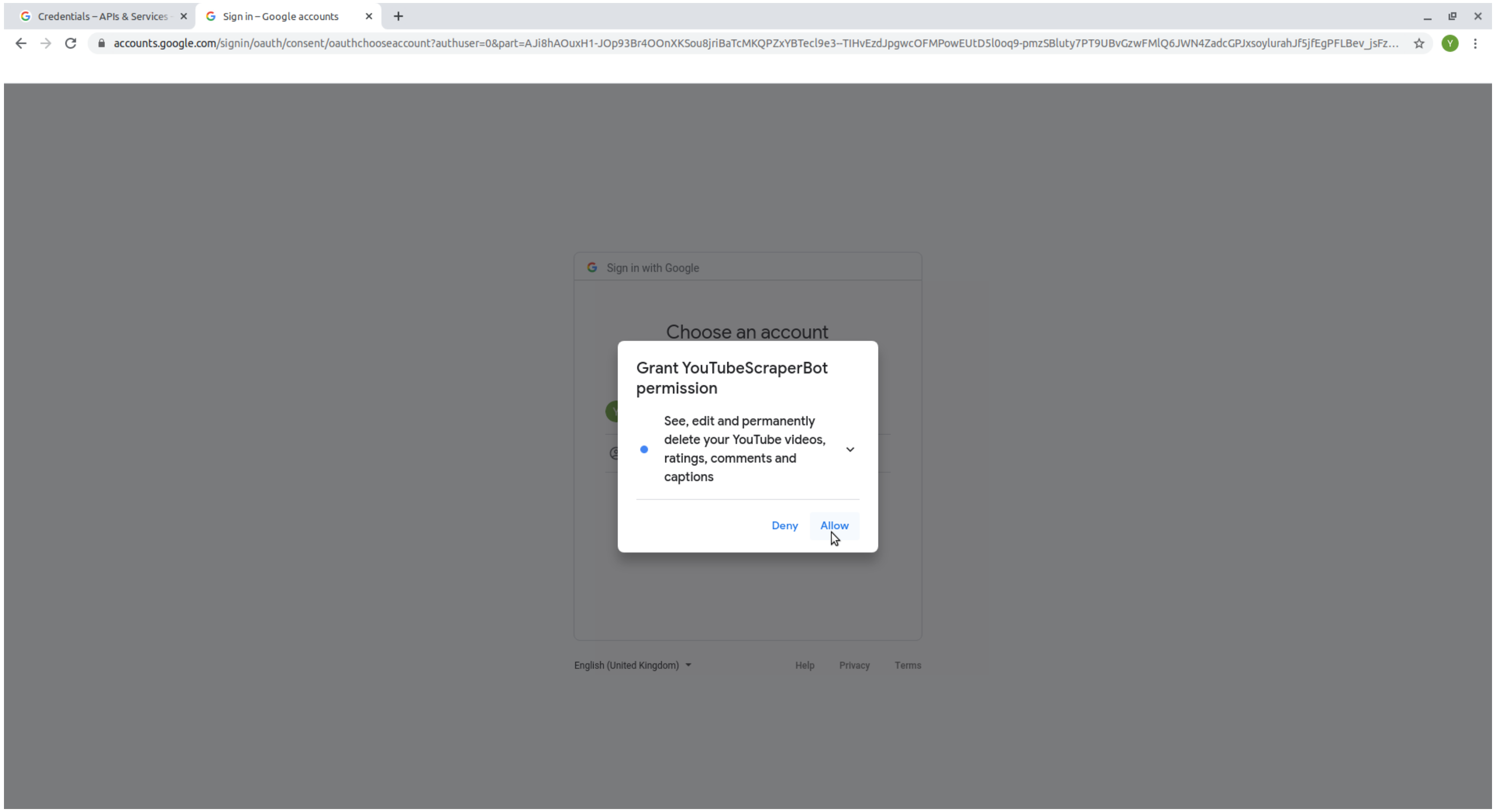
Google hasn't reviewed this app yet and can't confirm it's authentic. Unverified apps may pose a threat to your personal data. Learn more

Go to YouTubeScraperBot (unsafe)

https://accounts.google.com/#

Granting Access to Your "Unsecure App" (3)

- Click "Allow"


Credentials – APIs & Services
Sign in – Google accounts
accounts.google.com/signin/oauth/consent/oauthchooseaccount?authuser=0&part=AJi8hAOuxH1-JOp93Br4OOnXKSou8jriBaTcMKQPZxYBTecl9e3--TIHvEzdJpgwcOFMPowEUtD5l0oq9-pmzSBluty7PT9UBvGzwFMlQ6JWN4ZadcGPJxsoylurahJf5jfEgPFLBev_jsFz...
Sign in with Google
Choose an account
English (United Kingdom)
Help
Privacy
Terms

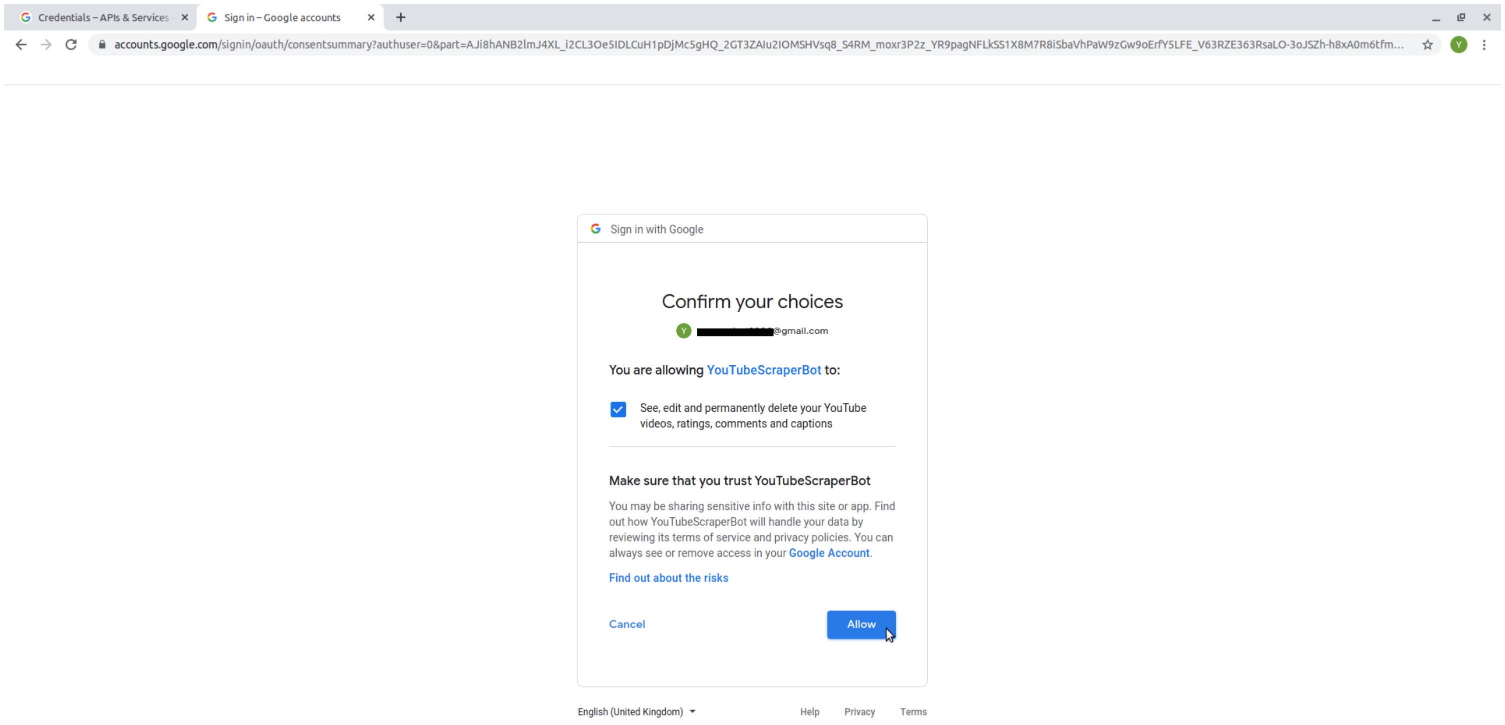
Grant YouTubeScraperBot permission

See, edit and permanently delete your YouTube videos, ratings, comments and captions

Deny Allow

Access "Unsecure App" (1)

- Click "Allow" again to confirm your choice



Credentials – APIs & Services | Sign in – Google accounts

accounts.google.com/signin/oauth/consentsummary?authuser=0&part=AJi8hANB2lmJ4XL_i2CL3Oe5IDLCuH1pDjMc5gHQ_2GT3ZAIu2IOMSHVsq8_S4RM_moxr3P2z_YR9pagNFLkSS1X8M7R8iSbaVhPaW9zGw9oErfY5LFE_V63RZE363RsaLO-3oJSZh-h8xA0m6tfm...

Sign in with Google

Confirm your choices

[redacted]@gmail.com

You are allowing YouTubeScraperBot to:

☑ See, edit and permanently delete your YouTube videos, ratings, comments and captions

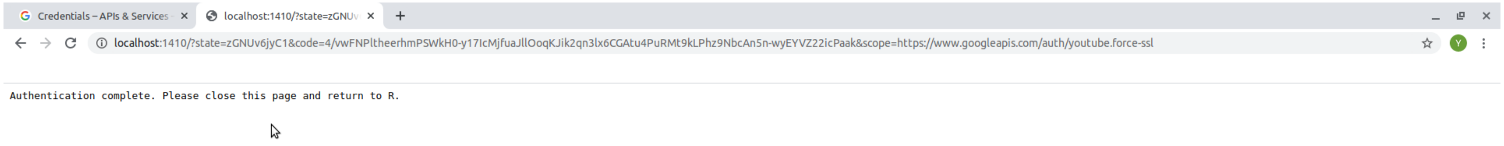
Make sure that you trust YouTubeScraperBot

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

Find out about the risks

Access "Unsecure App" (2)

- You should now see the message "Authentication complete. Please close this page and return to R"



```
localhost:1410/?state=zGNUv6jyC1&code=4/vwFNPltheerhmPSWkH0-y17IcMjfuaJllOoqKJik2qn3lx6CGAtu4PuRMt9kLPhz9NbcAn5n-wyEYVZ22icPaak&scope=https://www.googleapis.com/auth/youtube.force-ssl
```

```
Authentication complete. Please close this page and return to R.
```

Test API call

- To check if everything worked, let's try to collect some data about a video

```
# get statistics of 1 video
get_stats(video_id="HluANRwPyNo")
```

Output

- If everything worked correctly, your output should look something like this:

```
$id
[1] "HluANRwPyNo"

$viewCount
[1] "10244939"

$likeCount
[1] "509791"

$dislikeCount
[1] "4799"

$favoriteCount
[1] "0"

$commentCount
[1] "20581"
```

We hope that you are now all set up and look forward to seeing you in Cologne!