

Mobileye Devops-IT home Assignment:

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Tools Used in This Assignment

This assignment leverages a variety of industry-standard tools to facilitate efficient development, testing, and deployment. Below is a brief overview of each tool and its role in my work assignment

Postman: API testing tool used to design, build and test the GitLab document APIs provided. It allows me sending HTTP requests (e.g., GET, POST, PUT, DELETE) to API endpoints and verifying the responses before writing the code

Docker: A platform for developing, shipping, and running applications in lightweight on my Mac Laptop, portable containers. Docker packages software and its dependencies into a single uni

Docker Desktop: application for macOS environments that allows me to build and share containerized applications and microservice

GitHub: platform for version control and collaboration. It is used for hosting my code repository to be share as part of the work assignment

GitLab: Personal account that is used for DevOps lifecycle tool that provides Git repository management, CI/CD

Visual Studio Code (VS Code): source code editor to write the script. It allows me to debugging and write the script

Mac Operating System Dependencies :

- **Requests** module use to send the API call using the ready token and gitlab URL and use by the Python scripts
- **curl** to run the API command using Terminal

GitLab Simulation Environment on Docker provided in the assignment.

<https://archives.docs.gitlab.com/15.11/ee/install/docker.html#install-gitlab-using-docker-engine>

Environment Setup

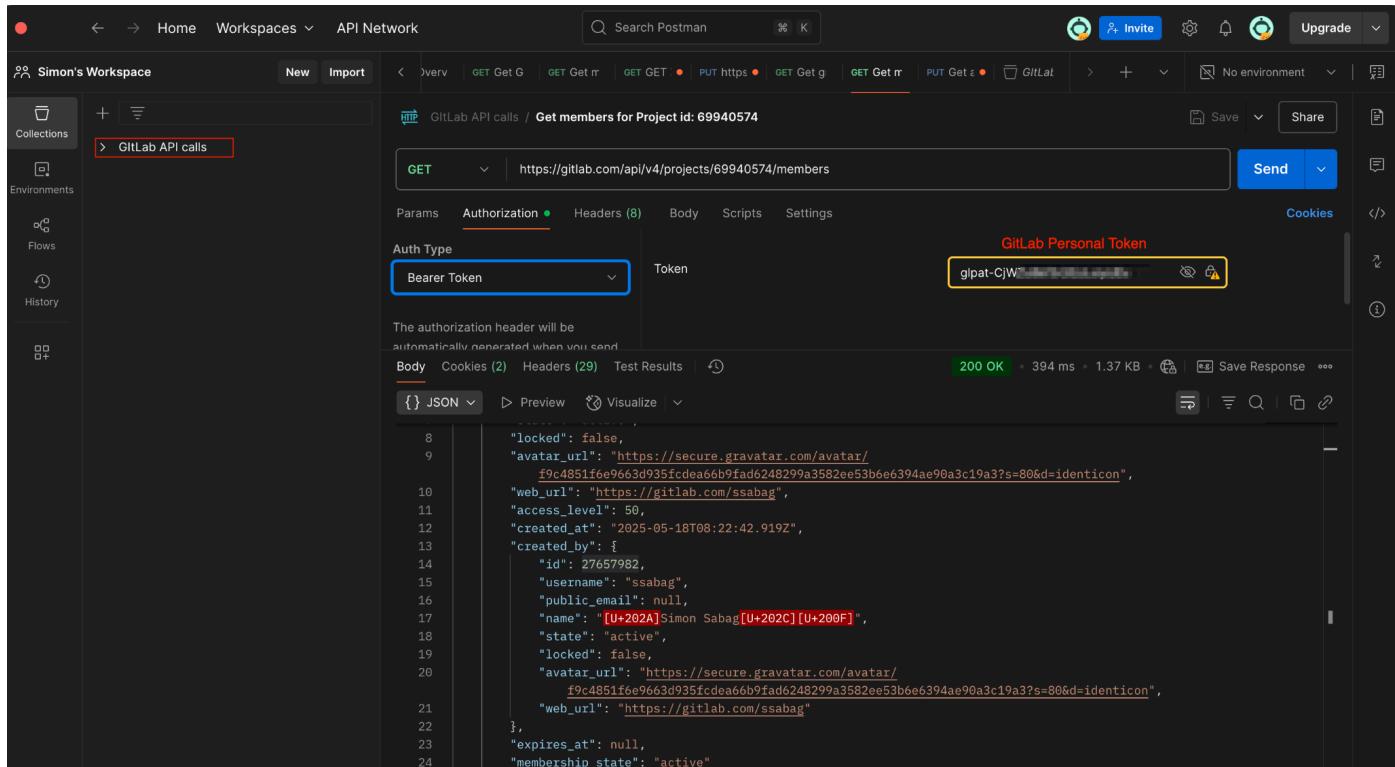
Postman

1. Installation:

- **Download Postman:**
 - Go to the official Postman website:
<https://www.postman.com/downloads/>
- **Launch Postman:** Open the Postman application and create account

2. Setting up Environments in Postman:

- **Create an Environment:**
 - Setting up the request API call base on the Doc API provided
 - Setting up the Token create in Git lab (will be explained later in this doc)



The screenshot shows the Postman application interface. The left sidebar displays 'Simon's Workspace' with sections for Collections, Environments, Flows, and History. The main workspace shows a collection named 'GitLab API calls' with one item: 'Get members for Project id: 69940574'. The request details are as follows:

- Method:** GET
- URL:** https://gitlab.com/api/v4/projects/69940574/members
- Authorization:** Bearer Token (selected)
- Token:** glpat-CjW... (redacted)

The response status is 200 OK, with a response time of 394 ms and a size of 1.37 KB. The response body is displayed in JSON format:

```
8   "locked": false,
9   "avatar_url": "https://secure.gravatar.com/avatar/
10  _f9c4851f6e9663d935fcdeaa66b9fad6248299a3582ee53b6e6394ae90a3c19a3?s=80&d=identicon",
11  "web_url": "https://gitlab.com/ssabag",
12  "access_level": 50,
13  "created_at": "2025-05-18T08:22:42.919Z",
14  "created_by": {
15    "id": 27657982,
16    "username": "ssabag",
17    "public_email": null,
18    "name": "[U+202A]Simon Sabag[U+202C][U+200F]",
19    "state": "active",
20    "locked": false,
21    "avatar_url": "https://secure.gravatar.com/avatar/
22  _f9c4851f6e9663d935fcdeaa66b9fad6248299a3582ee53b6e6394ae90a3c19a3?s=80&d=identicon",
23    "web_url": "https://gitlab.com/ssabag"
24  },
25  "expires_at": null,
26  "membership_state": "active"
```

Docker & Docker Desktop

Below is a screen capture of my personal docker hub account will help me to analyze the ready docker image

The screenshot shows the Docker Desktop application interface. On the left, a sidebar includes options like Ask Gordon, Containers, Images (selected), Volumes, Builds, Docker Hub, Docker Scout, and Extensions. The main area is titled 'Images' and shows a list of local images and Docker Hub repositories. Local images include 'node-app' (tag 1.0, created 6 days ago, size 258.83 MB) and 'ssabag/simon-repo' (tag latest, created 6 days ago, size 258.83 MB). Docker Hub repositories listed are 'nodejs/node' (tag v14.15.0, created 4 days ago, size 6.239B), 'node-snp' (tag 1.0, created 5 days ago, size 259MB), 'ssabag/simon-repo' (tag latest, created 5 days ago, size 259MB), 'mongo' (tag latest, created 2 weeks ago, size 1.17GB), 'nginx' (tag latest, created 4 weeks ago, size 281MB), 'gcr.io/k8s-minikube/kicbase' (tag v0.0.46, created 4 months ago, size 1.72GB), 'gcr.io/k8s-minikube/kicbase' (tag <none>, created 4 months ago, size 1.72GB), 'dockersamples/hello-world' (tag latest, created 7 years ago, size 43.3MB), and 'jwilder/nginx-proxy' (tag latest, created 11 hours ago, status healthy, ports 8.0.0.0:22->22/tcp, 8.0.0.0:80->80/tcp, 8.0.0.0:443->443/tcp, name gitlab).

Running Docker environment on my laptop:

```
Last login: Sun May 18 22:17:35 on ttys014
[simonsabag@MacBook-Air ~]$ docker images
REPOSITORY          TAG      IMAGE ID      CREATED        SIZE
gitlab/gitlab-ee    latest   4d7c2f0d774   4 days ago   6.239B
node-snp            1.0     5faa06ece374   5 days ago   259MB
ssabag/simon-repo   latest   5faa06ece374   5 days ago   259MB
mongo               latest   2e018e38a689   2 weeks ago  1.17GB
nginx               latest   c15da6c91d8b   4 weeks ago  281MB
gcr.io/k8s-minikube/kicbase <none>  f2d0445ddcc3   4 months ago  1.72GB
gcr.io/k8s-minikube/kicbase <none>  f2d0445ddcc3   4 months ago  1.72GB
dockersamples/hello-world latest   e6739b946772   7 years ago   43.3MB
[simonsabag@MacBook-Air ~]$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS               NAMES
38f1fb8dcde6        gitlab/gitlab-ee:latest   "/assets/init-contai..."   11 hours ago       Up 11 hours (healthy)   8.0.0.0:22->22/tcp, 8.0.0.0:80->80/tcp, 8.0.0.0:443->443/tcp   gitlab
[simonsabag@MacBook-Air ~]$ docker
Usage: docker [OPTIONS] COMMAND
A self-sufficient runtime for containers

Common Commands:
  run      Create and run a new container from an image
  exec    Execute a command in a running container
  ps      List containers
  build   Build an image from a Dockerfile
```

GitHub

using my GitHub account for delivery the work assignment files:

<https://github.com/ssabag4/Home-Assignment-/tree/main>

GitLab

To effectively simulate API calls, I'm using my personal GitLab account and it's also been configured. And I have populated it with data. This allows for realistic testing and validation using various tools and methods:

The API Doc link use:<https://archives.docs.gitlab.com/15.11/ee/api/members.html#roles>

Below is a screen capture of my GitLab account with the populated data:

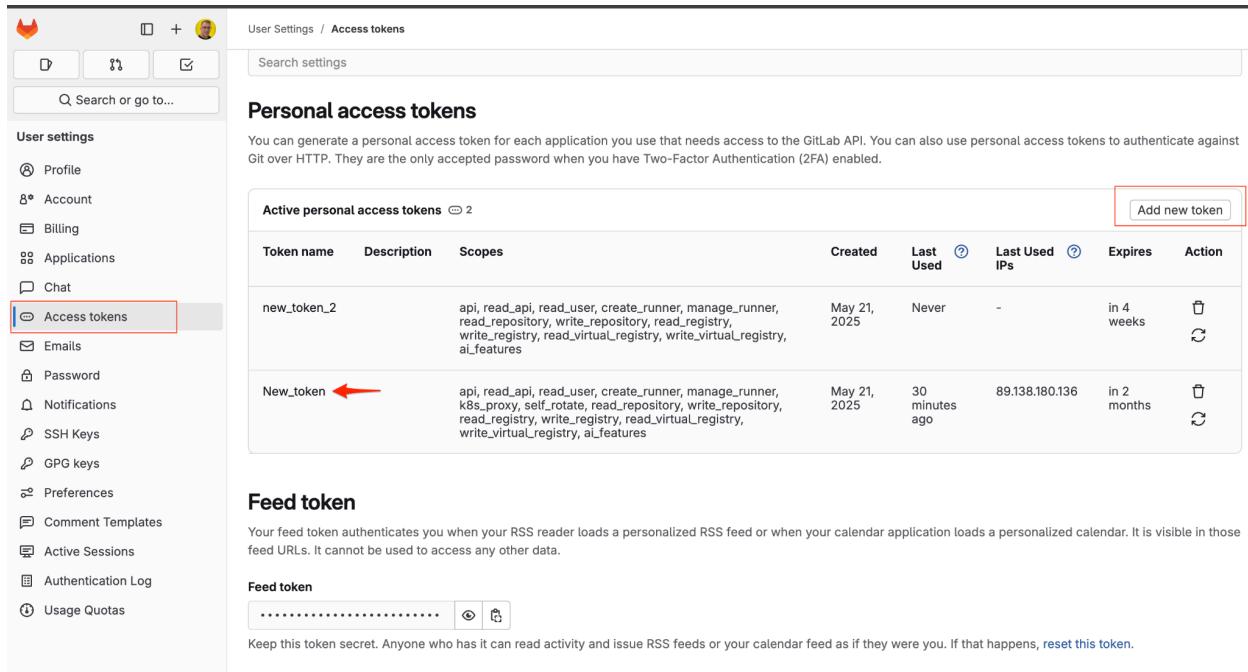
The screenshot shows a GitLab pipeline interface for a project named "my-gitlab-app". The pipeline consists of several stages:

- Docker in Docker**: Passed, 0:00:55, 1 day ago.
- Building Docker Image Job**: Passed, 0:00:56, 1 day ago.
- Create Dockerfile**: Failed, 0:00:18, 1 day ago. Status message: "branch: fork".
- correcting stage**: Passed, 0:00:15, 1 day ago.
- update the main for docker session**: Failed, 1 day ago. Status message: "error branch: fork".
- adding app version control and name**: Passed, 0:00:20, 1 day ago.
- adding app version control and name**: Passed, 0:00:49, 1 day ago. Status message: "latest merge request branch: fork".

The interface includes a sidebar with navigation links like Project, Pipelines, Jobs, Environments, Manage, Plan, Code, Build, Secure, Deploy, Operate, Monitor, and Analyze. At the bottom, there are navigation buttons for 'Previous' and 'Next'.

Generate Personal Access token

I have generated a GitLab personal **Access token** with the full suite of scopes for the purpose of work assignment. However, for optimal security, it is advisable to configure the token with only the necessary permissions.



The screenshot shows the 'User Settings / Access tokens' page. On the left sidebar, 'Access tokens' is selected. The main area displays 'Personal access tokens' with two entries:

Token name	Description	Scopes	Created	Last Used	Last Used IPs	Expires	Action
new_token_2		api, read_api, read_user, create_runner, manage_runner, read_repository, write_repository, read_registry, write_registry, read_virtual_registry, write_virtual_registry, ai_features	May 21, 2025	Never	-	in 4 weeks	Delete Edit
New_token		api, read_api, read_user, create_runner, manage_runner, k8s_proxy, self_rotate, read_repository, write_repository, read_registry, write_registry, read_virtual_registry, write_virtual_registry, ai_features	May 21, 2025	30 minutes ago	89.138.180.136	in 2 months	Delete Edit

A red arrow points to the 'New_token' row. A red box highlights the 'Add new token' button at the top right of the table area.

Note: the personal key is kept locally and not exposed by the code utilizing the os python module, later on I have provided guide how to setup it in this doc

Creating Project and Group in GitLab for Testing the code

My Group and Projects Overview of GitLab Groups and Projects Structure:



The screenshot shows the 'Your work / Groups' page. On the left sidebar, 'Groups' is selected. The main area displays 'Groups' with two entries:

Name	Type	Owner	Members	Issues	Commits	Pushes	Jobs	...
ssabag76-group	Developer		0	2	2	0	0	...
ssabag-group	Owner		0	5	3	0	0	...

Creating Pipeline and Populate it - Merge Request & Issues

Branch	Last Commit	Status	Action Buttons
main (default, protected)	3a09eb4b · using the build we creat in our deployment · 1 day ago	30 4	[Green Checkmark] [New] [More]
feature/mysite	d6474aad · fixing code · 1 day ago	31 1	[Green Checkmark] [New] [More]
feature/simple-pipeline	1dca5a39 · simplify pipeline · 2 days ago	32 1	[Green Checkmark] [New] [More]
feature/lint4	cce19b50 · new merge request · 2 days ago	32 1	[Green Checkmark] [New] [More]
feature/lint3	b4d7e4a8 · adding comment · 2 days ago	32 1	[Green Checkmark] [New] [More]
feature/newtest	867fc1f1 · adding lint 2 · 2 days ago	32 2	[Green Checkmark] [New] [More]
feature/lint	351471e1 · revert · 2 days ago	32 4	[Red X] [12] [More]

Status	Job	Pipeline	Coverage
Passed	#10066939398: notify_prod	#1822909502	
Passed	#10066939396: build_website	#1822909502	
Passed	#10066909230: notify_prod	#1822902149	
Passed	#10066909228: notify_staging	#1822902149	
Passed	#10066909225: unit_tests	#1822902149	
Passed	#10066909223: test_artifacts	#1822902149	

populated my GitLab account with four issues:

Issue Type	Title	Description	Created By	Created Date
Open	This is Test issue 3	#3 · created 10 hours ago by Simon Sabag	Simon Sabag	10 hours ago
Open	This is Test issue 2	#2 · created 10 hours ago by Simon Sabag	Simon Sabag	10 hours ago
Open	This is a test issue 1	#1 · created 10 hours ago by Simon Sabag	Simon Sabag	10 hours ago

Creating Test Project to build the Docker Image

For this work assignment, the "**Test**" project within my GitLab environment functions as the primary repository during the work for hosting the application's codebase and building the ready docker image

The screenshot shows a GitLab project interface for a repository named 'test'. The left sidebar includes links for Project, Issues, Merge requests, Pipelines, Jobs, Environments, Manage, Plan, Code, Build, Secure, and DevOps. The main area displays a commit history:

Name	Last commit	Last update
cl	test7	1 day ago
.gitlab-ci.yml	adding env	11 hours ago
README.md	Initial commit	2 days ago
main.py	test image	11 hours ago
requirements.txt	test3	1 day ago
README.md		

On the right, the 'Project information' sidebar shows:

- 28 Commits
- 1 Branch
- 0 Tags
- 323 KIB Project Storage

Below this are buttons for README, CI/CD configuration, and various add-ons like LICENSE, CHANGELOG, CONTRIBUTING, Kubernetes cluster, Wiki, and Configure Integrations.

Utilizing the integrated IDE within GitLab, and code changes will be committed to both **branches** and the **main** branch.

Visual Studio Code (VS Code)

- Development of the **main.py** script will be carried out in Visual Studio Code

Operating System Dependencies:

The following dependencies need to be installed on my operating system:

- brew install jq:** Installs jq, a command-line JSON processor used here to format the output of curl requests for better readability.
- pip3 install requests:** Installs the requests Python library, which is a necessary module for the Python script:
<https://github.com/ssabag4/Home-Assignment-/blob/main/main.py>
- pip3 install python-dotenv** need it for implanting of keeping the access token locally

Environment Testing validation Using Postman, Curl, Code (POC)

- Getting ALL Merge Request in my account
- https://gitlab.com/api/v4/merge_requests
- curl --header "PRIVATE-TOKEN: glpat--xxxxxx..." "https://gitlab.com/api/v4/merge_requests" | JQ .

The screenshot shows the Postman interface with the following details:

- Method:** GET
- URL:** https://gitlab.com/api/v4/merge_requests
- Auth Type:** Bearer Token
- Body:** JSON
- Response Status:** 200 OK
- Response Time:** 613 ms
- Response Size:** 4.48 KB
- Response Content:** A table showing two merge requests. The first has an ID of 384133796, title "adding app version control and name", state "merged", and was created at 2025-05-17T15:27:36.711Z. The second has an ID of 384132421, title "e2e job cleanout", state "merged", and was created at 2025-05-17T14:43:40.356Z.


```
simonsabag@MacBook-Air-sl-Simon ~ % curl --header "PRIVATE-TOKEN: glpat-CjWZz... " "https://gitlab.com/api/v4/merge_requests" | JQ .
% Total    % Received % Xferd  Average Speed   Time   Time  Current
          Dload  Upload Total Spent   Left  Speed
100 43867  100 43867    0     0 76148      0 ---:---:---:--- 76290
[ {
  "id": 384133796,
  "iid": 21,
  "project_id": 69905560,
  "title": "adding app version control and name",
  "description": "",
  "state": "merged",
  "created_at": "2025-05-17T15:27:36.711Z",
  "updated_at": "2025-05-17T15:30:07.474Z",
  "merged_by": {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "Simon Sabag",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag"
  },
  "merge_user": {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "Simon Sabag",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag"
  },
  "merged_at": "2025-05-17T15:30:06.884Z",
}
```

- **Getting ALL members in GroupID: 106969600 (with Token)**
- <https://gitlab.com/api/v4/groups/106969600/members/all>
- curl --header "PRIVATE-TOKEN: glpat-xxxxxx.." "https://gitlab.com/api/v4/groups/106969600/members/all" | JQ .

Authorization (selected) Headers (8) Body Scripts Settings Cookies

Auth Type: Bearer Token

The authorization header will be automatically generated when you send the request. Learn more about [Bearer Token](#) authorization.

Body Cookies (2) Headers (29) Test Results ⚡

200 OK 405 ms 1.55 KB ⏱ Save Response ⚙️

	id	username	public_email	name	state	locked	avatar_url
0	27657982	ssabag		Simon Sabag	active	false	https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png
1	27953483	ssabag76	null	Shimon Sabag	active	false	https://secure.gravatar.com/avatar/bd49fb91e3d46451768a609c8602611f78ead43&s=80&d=identicon
27657981	comudifallab			Samy	active	false	https://secure.gravatar.com/avatar/5524c888c74377410c0c612b4a502b640f2141a1

ssabag-group

S ssabag-group

Subgroups and projects Shared projects Shared groups Inactive

Copy group ID 106969600

Group settings

Pinned

```

simonsabag@MacBook-Air-s1-Simon ~ % curl --header "PRIVATE-TOKEN: glpat-CjWZz8kf3r2GJlxiyUEx" "https://gitlab.com/api/v4/groups/106969600/members/all" | jq .
% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload Upload Total Spent   Left Speed
100  1638  100  1638    0     0  4000      0 --:--:-- --:--:-- 4004
[ {
  "id": 27657982,
  "username": "ssabag",
  "public_email": "",
  "name": "Simon Sabag",
  "state": "active",
  "locked": false,
  "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
  "web_url": "https://gitlab.com/ssabag",
  "access_level": 50,
  "created_at": "2025-05-05T20:19:20.879Z",
  "expires_at": null,
  "membership_state": "active"
},
{
  "id": 27953483,
  "username": "ssabag76",
  "public_email": null,
  "name": "Shimon Sabag",
  "state": "active",
  "locked": false,
  "avatar_url": "https://secure.gravatar.com/avatar/bd49fb91e3d46481768a609c8602611f78ead4385073535adcfb7829ffd45167?s=80&d=identicon",
  "web_url": "https://gitlab.com/ssabag76",
  "access_level": 10,
  "created_at": "2025-05-18T13:55:01.015Z",
  "created_by": {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "Simon Sabag",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag"
  },
  "expires_at": null,
  "membership_state": "active"
}
]

```

- **Getting ALL members in Project ID 69940574 (with Token)**
- <https://gitlab.com/api/v4/projects/69940574/members>
- `curl --header "PRIVATE-TOKEN: glpat-xxxxxx..."`

The authorization header will be automatically generated when you send.

	<code>id</code>	<code>username</code>	<code>public_email</code>	<code>name</code>	<code>state</code>	<code>locked</code>	<code>avatar_url</code>
0	27657982	ssabag		Simon Sabag	active	false	https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png
1	27657981	samydifallah	null	Samy DIFALLAH	active	false	https://secure.gravatar.com/avatar/55246888c74877410e9e618b4a502b649f214?s=80&d=identicon

```

simonsabag@MacBook-Air-sl-Simon ~ % curl --header "PRIVATE-TOKEN: glpat-6XXXXXXXXXXXXX" "https://gitlab.com/api/v4/groups/106969600/members/all" | jq .
% Total    % Received % Xferd  Average Speed   Time   Time     Time Current
          Dload Upload Total Spent   Left Speed
100  1638  100  1638    0      0  4140      0 --:--:-- --:--:-- --:--:--  4136
[
  {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "Simon Sabag",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag",
    "access_level": 50,
    "created_at": "2025-05-06T20:19:20.879Z",
    "expires_at": null,
    "membership_state": "active"
  },
  {
    "id": 27953483,
    "username": "ssabag76",
    "public_email": null,
    "name": "Shimon Sabag",
    "state": "active",
    "locked": false,
    "avatar_url": "https://secure.gravatar.com/avatar/bd49fb91e3d46451768a609c8602611f78ead4385073535adcfb7829ffd45167?s=80&d=identicon",
    "web_url": "https://gitlab.com/ssabag76",
    "access_level": 10,
    "created_at": "2025-05-18T13:55:01.015Z",
    "created_by": {
      "id": 27657982,
      "username": "ssabag",
      "public_email": "",
      "name": "Simon Sabag",
      "state": "active",
      "locked": false,
      "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
      "web_url": "https://gitlab.com/ssabag"
    },
    "expires_at": null,
    "membership_state": "active"
  },
  {
    "id": 27657981,

```

- **Getting ALL MR for given year 2025**

- curl --header "PRIVATE-TOKEN: <your_access_token>"
https://gitlab.example.com/api/v4/projects/123/merge_requests?created_after=2024-01-01T00:00:00Z&created_before=2025-01-01T00:00:00Z
- curl --header "PRIVATE-TOKEN: glpat--xxxxxx..."
https://gitlab.com/api/v4/merge_requests?created_after=2025-01-15T15:27:36.711Z&created_before=2025-12-01T00:00:00Z

GitLab API calls

- `PUT` Change ProjectID value - restrict_user_defin...
- `GET` Get GitLab ProjectID Info 69940574
- `GET` Get members for Project id: 69940574
- `GET` Get groups members for id 106969600
- `GET` Get all groups members
- `GET` Get member by user_id on project
- `GET` get ALL merge_requests for year2025
- `GET` Listing Issues Created in 2025
- `GET` ALL merge_requests in my account

You've made new changes [Post an update](#) to inform others.

HTTP GitLab API calls / get ALL merge_requests for year2025

GET https://gitlab.com/api/v4/merge_requests?created_after=2025-01-15T15:27:36.711Z&created_before=2025-12-C... Send Cookies </>

Params Authorization Headers (8) Body Scripts Settings

Key	Value	Description	Bulk Edit
<input checked="" type="checkbox"/> created_after	2025-01-15T15:27:36.712		
<input checked="" type="checkbox"/> created_before	2025-12-01T00:00:00Z		
Key	Value	Description	

Body Cookies (2) Headers (29) Test Results 200 OK · 551 ms · 4.77 KB · Save Response

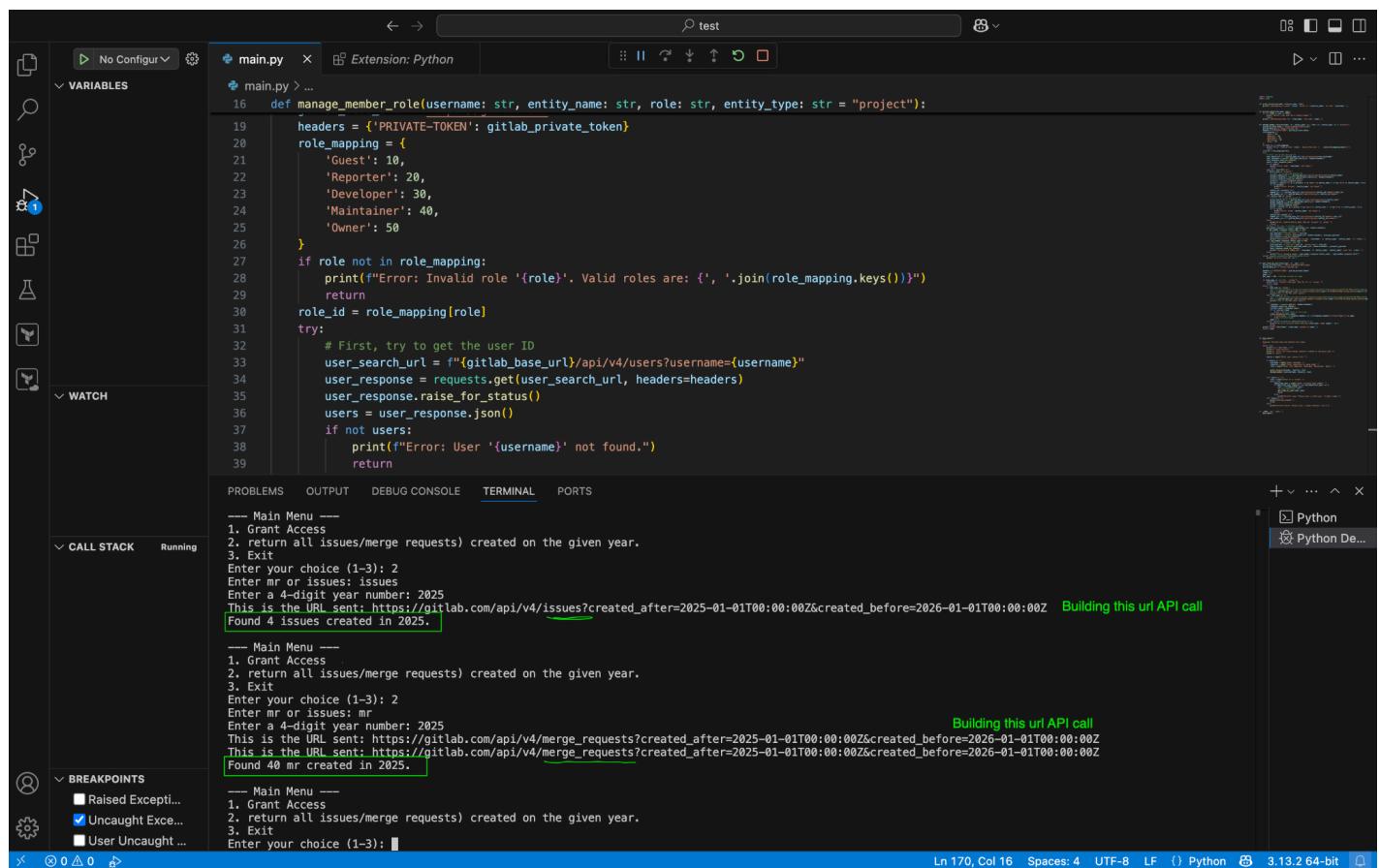
```
{
  "references": {
    "short": "12",
    "relative": "12",
    "full": "ssabag-group/learn-gitlab-app!2"
  },
  "web_url": "https://gitlab.com/ssabag-group/learn-gitlab-app/-/merge_requests/2",
  "time_stats": {
    "time_estimate": 0,
    "total_time_spent": 0,
    "human_time_estimate": null,
    "human_total_time_spent": null
  },
  "squash": true,
  "squash_on_merge": true,
  "task_completion_status": {
    "count": 0,
    "completed_count": 0
  }
}
```

simonsabag@MacBook-Air-s1-Simon ~ % curl --header "PRIVATE-TOKEN: gipat-CjWZ..." "https://gitlab.com/api/v4/merge_requests?created_after=2025-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z" | jq .% Total % Received % Xferd Average Speed Time Time CurrentDload Upload Total Left Speed100 43867 100 43867 0 0 70529 0 --:--:-- --:--:-- 70412[{"id": 384133796, "iid": 21, "project_id": 69905560, "title": "adding app version control and name", "description": "adding app version control and name", "state": "merged", "created_at": "2025-05-17T15:27:36.711Z", "updated_at": "2025-05-17T15:30:07.474Z", "merged_by": {"id": 27657982, "username": "ssabag", "public_email": "", "name": "Simon Sabag", "state": "active", "locked": false, "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png", "web_url": "https://gitlab.com/ssabag"}, "merge_user": {"id": 27657982, "username": "ssabag", "public_email": "", "name": "Simon Sabag", "state": "active", "locked": false, "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png", "web_url": "https://gitlab.com/ssabag"}, "merged_at": "2025-05-17T15:30:06.884Z"}]

- checking user name
- curl --header "PRIVATE-TOKEN: glpat-xxxxx..." "https://gitlab.com/api/v4/users?username=ssabag" | jq .

```
simonsabag@MacBook-Air-sl-Simon ~ % curl --header "PRIVATE-TOKEN: glpat-CjWzz8kf3r2GJLxiyUE" "https://gitlab.com/api/v4/users?username=ssabag" | jq .
% Total    % Received % Xferd  Average Speed   Time   Time  Current
          Dload  Upload Total Spent   Left Speed
100  238  100  238    0     0  541      0 --:--:-- --:--:-- 542
[{
  "id": 27657982,
  "username": "ssabag",
  "public_email": "",
  "name": "Simon Sabag",
  "state": "active",
  "locked": false,
  "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
  "web_url": "https://gitlab.com/ssabag"
}]
simonsabag@MacBook-Air-sl-Simon ~ %
```

The code will be simulated using the debugger in Visual Studio Code (VSC).



Ln 170, Col 16 Spaces: 4 UTF-8 LF () Python 3.13.2 64-bit

'Grant Role' access to Project 'Test4' for user 'ssabag76'. (using the code)

The screenshot shows a terminal window within a code editor interface. The code editor has tabs for 'main.py 1' and 'manage_member_role'. The code itself is a Python script that defines a function `manage_member_role` which takes parameters like `username`, `entity_name`, `role`, and `entity_type`. It uses a mapping of roles to IDs and makes API requests to a GitLab instance to update the user's role in a specific project.

The terminal output shows the script being run:

```
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 1
Enter username: ssabag76
Enter repository or group name: Test4
Enter role (Reporter, Developer, Maintainer, Owner): Developer
Attempting to grant 'Developer' access to 'Test4' for user 'ssabag76'.
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Developer'.
```

Below the terminal, a 'Main Menu' is displayed with three options:

- 1. Grant Access
- 2. return all issues/merge requests) created on the given year.
- 3. Exit

The user has selected option 1.

- **Listing Issues Created in Year 2025**

- **Example:** curl --header "PRIVATE-TOKEN: <your_access_token>"

["https://gitlab.example.com/api/v4/issues?created_after=2024-01-01T00:00:00Z&created_before=2025-01-01T00:00:00Z"](https://gitlab.example.com/api/v4/issues?created_after=2024-01-01T00:00:00Z&created_before=2025-01-01T00:00:00Z)

- curl --header "PRIVATE-TOKEN: glpat-xxxx"

["https://gitlab.com/api/v4/issues?created_after=2025-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z"](https://gitlab.com/api/v4/issues?created_after=2025-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z)

GET https://gitlab.com/api/v4/issues?created_after=2025-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z

Params Authorization Headers (8) Body Scripts Settings Cookies

Query Params

Key	Value	Description	Bulk Edit
created_after	2025-01-01T00:00:00Z		
created_before	2025-12-01T00:00:00Z		
Key	Value	Description	

Body Cookies (2) Headers (29) Test Results

{ } JSON Preview Visualize

id	iid	project_id	title	description	state	created_at	updated_at	closed_at	closed_by																
167524843	4	69905560	This is Test issue 4	This is Test issue 4	closed	2025-05-19T08:57:35.855Z	2025-05-19T08:58:18.454Z	2025-05-19T08:58:18.440Z	<table border="1"> <tr><td>id</td><td>27657982</td></tr> <tr><td>username</td><td>ssabag</td></tr> <tr><td>public_email</td><td></td></tr> <tr><td>name</td><td>Simon Sabag</td></tr> <tr><td>state</td><td>active</td></tr> <tr><td>locked</td><td>false</td></tr> <tr><td>avatar_url</td><td>https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png</td></tr> <tr><td>web_url</td><td>https://gitlab.com/ssabag</td></tr> </table>	id	27657982	username	ssabag	public_email		name	Simon Sabag	state	active	locked	false	avatar_url	https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png	web_url	https://gitlab.com/ssabag
id	27657982																								
username	ssabag																								
public_email																									
name	Simon Sabag																								
state	active																								
locked	false																								
avatar_url	https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png																								
web_url	https://gitlab.com/ssabag																								
167524820	3	69905560	This is a test issue 3	This is a test issue 3	opened	2025-05-19T08:57:35.855Z	2025-05-19T08:57:35.855Z	null	null																

```
simonsebag@MacBook-Air-s1-Simon ~ % curl --header "PRIVATE-TOKEN: glpat-XXXXXXXXXXXXXXXXXXXXXX" "https://gitlab.com/api/v4/issues?created_after=2025-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z" | jq .[0].closed_by
% Total    % Received % Xferd  Average Speed   Time     Time   Current
          0       0      0  0  0  0 14950  0  --:--:-- 0:00:00 0:00:00 14979
[{"id": 167524843,
 "iid": 4,
 "project_id": 69905560,
 "title": "This is Test issue 4",
 "description": "This is Test issue 4",
 "state": "closed",
 "created_at": "2025-05-19T08:57:35.855Z",
 "updated_at": "2025-05-19T08:58:18.454Z",
 "closed_at": "2025-05-19T08:58:18.440Z",
 "closed_by": {
   "id": 27657982,
   "username": "ssabag",
   "public_email": "",
   "name": "Simon Sabag",
   "state": "active",
   "locked": false,
   "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
   "web_url": "https://gitlab.com/ssabag"
 },
 "labels": [],
 "milestone": null,
 "assignees": [],
 "author": {
   "id": 27657982,
   "username": "ssabag",
   "public_email": "",
   "name": "Simon Sabag",
   "state": "active",
   "locked": false,
   "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
   "web_url": "https://gitlab.com/ssabag"
 }
```

The screenshot shows a Python development environment with the following interface elements:

- Top Bar:** Includes file navigation (Back, Forward, Home), search bar, and various tool icons.
- Left Sidebar:** Contains sections for **VARIABLES**, **WATCH**, and **CALL STACK**. The **CALL STACK** section is currently active and displays the following stack trace:

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 2
Enter mr or issues: issues
Enter a 4-digit year number: 2025
This is the URL sent: https://gitlab.com/api/v4/issues?created_after=2025-01-01T00:00:00Z&created_before=2026-01-01T00:00:00Z Building this url API call
Found 4 issues created in 2025.

--- Main Menu ---
1. Grant Access
2. Return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 2
Enter mr or issues: mr
Enter a 4-digit year number: 2025
This is the URL sent: https://gitlab.com/api/v4/merge_requests?created_after=2025-01-01T00:00:00Z&created_before=2026-01-01T00:00:00Z Building this url API call
This is the URL sent: https://gitlab.com/api/v4/merge_requests?created_after=2025-01-01T00:00:00Z&created_before=2026-01-01T00:00:00Z
Found 40 mr created in 2025.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

- Code Editor:** Shows a Python script named `main.py` with code related to managing member roles on GitLab. The code includes imports for `requests` and `os`, and uses `gitlab_private_token` as a header key.
- Terminal:** Shows the output of the script execution, including URLs for API calls and counts of issues and merge requests found in 2025.
- Bottom Status Bar:** Displays line and column numbers (Ln 170, Col 16), spaces used (Spaces: 4), encoding (UTF-8), and file type (Python).

- **Getting ALL MR for given year 2025 with projectId**
 - **Example:** curl --header "PRIVATE-TOKEN: <your_access_token>" "https://gitlab.example.com/api/v4/projects/123/merge_requests?created_after=2024-01-01T00:00:00Z&created_before=2025-01-01T00:00:00Z"
 - curl --header "PRIVATE-TOKEN: glpat-CjWZz8kf3r2GJLxiyUEx" "https://gitlab.com/api/v4/projects/69905560/merge_requests?created_after=2024-01-01T00:00:00Z&created_before=2025-12-01T00:00:00Z"

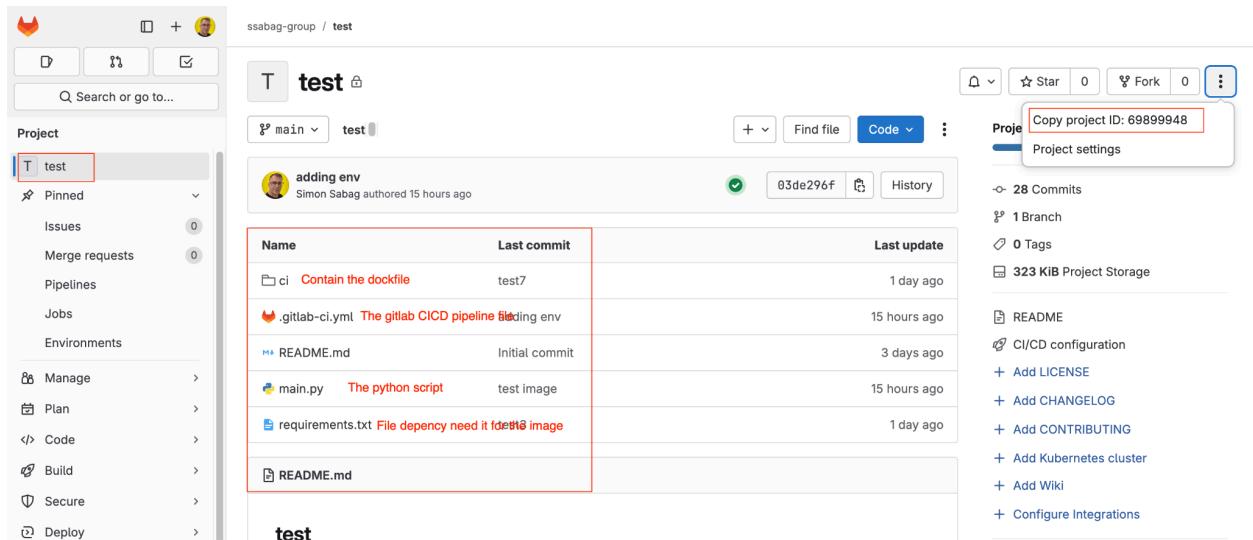
```
simonbabag@MacBook-Air-s1-Simon ~ % curl -H "PRIVATE-TOKEN: gplat-C" https://gitlab.com/api/v4/projects/6998556/merge_requests?created_after=2024-01-01T00:00:00Z&created_before=2025-01-01T00:00:00Z --output merge_requests.json
simonbabag@MacBook-Air-s1-Simon ~ % jq . merge_requests.json
simonbabag@MacBook-Air-s1-Simon ~ %
```

Creating the Dockerfile

This stage involves leveraging the GitLab project, specifically the "**Test**" project I have created, as a repository for all the essential files required to build the Docker image for my application. The process includes the following steps

Creating a New Project: A new GitLab project named "**Test**" has been created

Uploading Files: The relevant files, such as the Dockerfile, application code, and any configuration files, will be uploaded to the "**Test**" project repository. These files will then be used by the Docker build process



The screenshot shows the GitLab web interface for a project named "test". The sidebar on the left lists various project management sections like Issues, Merge requests, Pipelines, and Environments. The main area displays a list of files in the "main" branch. The "Dockerfile" is highlighted with a red border. Other visible files include ".gitlab-ci.yml", "requirements.txt", "main.py", and "README.md". The right sidebar provides project statistics and links for CI/CD configuration and integrations.

Name	Last commit	Last update
ci Dockerfile	test7	1 day ago
.gitlab-ci.yml	The gitlab CICD pipeline building env	15 hours ago
README.md	Initial commit	3 days ago
main.py	The python script	test image
requirements.txt	File dependency need it for the image	1 day ago
README.md		

Creating the CI Pipeline:

- A pipeline created by committing the necessary configuration files, including the **Dockerfile** provided below, directly to the main branch of the GitLab repository using the GitLab Web IDE. (files will share in the repo)
- The **dockerfile** can be found on the repo
<https://github.com/ssabag4/Home-Assignment-/blob/main/Dockerfile>
- Dockerfile **requirements.txt**
<https://github.com/ssabag4/Home-Assignment-/blob/main/requirements.txt>
- Gitlab Pipeline file **.gitlab-ci.yml** located here
<https://github.com/ssabag4/Home-Assignment-/blob/main/.gitlab-ci.yml>
- The ready python script **main.py**
<https://github.com/ssabag4/Home-Assignment-/blob/main/main.py>

Creating the Pipeline in GitLab Project:

build new image with fixed code

Passed Simon Sabag created pipeline for commit e26b22e3 46 minutes ago, finished 42 minutes ago
For main
latest branch 3 jobs 4.27 4 minutes 15 seconds, queued for 7 seconds

Pipeline Jobs 3 Tests 0

```
graph LR; subgraph .pre; build_docker_image; end --> build[build]; build --> deploy[deploy];
```

Status	Pipeline	Created by	Stages	Actions
Passed 00:01:15 25 minutes ago	Building the ready Image #1824698921 [main] < d67d18fc	Simon Sabag	.pre, build, deploy	<button>↓</button>

Below is the a screen of the worker creating the build:

the full file can be found in the Repo link below

https://github.com/ssabag4/Home-Assignment-/blob/main/creating_docker_image_Gitlab_log

```
ssabag-group / my-gitlab-app / Jobs / #10115668443
$ docker push $CI_REGISTRY_IMAGE/myapp2
Using default tag: latest
The push refers to repository [registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2]
589 6ef3476b6b07: Preparing
590 3844661af24f: Preparing
591 1225038c1cd1: Preparing
592 07f3f38ac2df: Preparing
593 69beb2787ffc: Preparing
594 b1e89496ceb6: Preparing
595 ace34d1d784c: Preparing
596 b1e89496ceb6: Waiting
597 16b1c710f703: Preparing
598 b1e89496ceb6: Waiting
599 ace34d1d784c: Waiting
600 1225038c1cd1: Pushed
601 07f3f38ac2df: Pushed
602 6ef3476b6b07: Pushed
603 b1e89496ceb6: Pushed
604 ace34d1d784c: Pushed
605 16b1c710f703: Pushed
606 ace34d1d784c: Pushed
607 69beb2787ffc: Pushed
608 3844661af24f: Pushed
609 b1e89496ceb6: Pushed
610 b1e89496ceb6: Pushed
611 16b1c710f703: Pushed
612 ace34d1d784c: Pushed
613 69beb2787ffc: Pushed
614 latest: digest: sha256:891bbcd56d97c22d37ae21c16b65e83bbe15a08b01c91e2ee8ab37e235a7dc size: 228
615 Cleaning up project directory and file based variables
616 Job succeeded
```

Duration: 1 minute 29 seconds
Finished: 27 minutes ago
Queued: 0 seconds
Timeout: 1h (from project)
Runner: #12270807 (jiaL-DqxS) - blue.saas-linux-small-amd64.runners-manager.gitlab.com/default
Source: Push
Commit e26b22e3 build new image with fixed code
Pipeline #1830797954 Passed for main
.pre

Related jobs
→ build_docker_image

The image has been pushed to GitLab container registry:

The screenshot shows the GitLab Container Registry interface. On the left, there's a sidebar with options like Manage, Plan, Code, Build, Secure, Deploy, Releases, Feature flags, and Package registry. The 'Container registry' option is highlighted with a red box. The main area is titled 'myapp2'. It shows '1 tag' (latest), '156.73 MiB', 'Cleanup disabled', 'Created May 22, 2025 08:32', and 'Last published at May 22, 2025 08:32'. There's a search bar, a 'Published' dropdown, and a 'Delete selected' button. A message at the bottom right says 'Published 48 minutes ago' and 'Digest: 891bbcd'.

Pulling and Running the Image

- running the following commands:
- [`docker images`](#)
- [`docker login registry.gitlab.com`](#)
- (*use my personal user name account*)

```
simonsabag@MacBook-Air-sl-Simon test % docker login registry.gitlab.com
Authenticating with existing credentials... [Username: ssabag]

Info : To login with a different account, run 'docker logout' followed by 'docker login'

Login did not succeed, error: Error response from daemon: Get "https://registry.gitlab.com/v2/": unauthorized: HTTP Basic: Access denied. If a password was provided for Git authentication, the password was incorrect or you're required to use a token instead of a password. If a token was provided, it was either incorrect, expired, or improperly scoped. See https://gitlab.com/help/user/profile/account/two_factor_authentication_troubleshooting.md#error-http-basic-access-denied-if-a-password-was-provided-for-git-authentication-Username (ssabag): ssabag

Info : A Personal Access Token (PAT) can be used instead.
To create a PAT, visit https://app.docker.com/settings

[Password:
Login Succeeded]
```

- [`docker pull registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2`](#)

```
simonsabag@MacBook-Air-sl-Simon test % docker pull registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2
Using default tag: latest
latest: Pulling from ssabag-group/learn-gitlab-app/myapp2
567335d51235: Pull complete
09c4893e5320: Pull complete
9d545c45fb8c: Pull complete
fa70febde0f6: Pull complete
c069d04e7109: Pull complete
3dae71ba6b94: Pull complete
1188209dfa2c: Pull complete
9e66e6dc2729: Pull complete
27ad0a948300: Pull complete
Digest: sha256:891bbcdbb56d97c22d37ae21c16b65e83bbe15a08b01c91e2ee8ab37e235a7dc
Status: Downloaded newer image for registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2:latest
registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2:latest
```

- **docker images**

```
simonsabag@MacBook-Air-s1-Simon test % docker images
REPOSITORY                                     TAG      IMAGE ID      CREATED        SIZE
registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2    latest   891bbcd5b6d  About an hour ago  676MB
registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp     latest   9a23285db5b2  14 hours ago   690MB
<none>                                         <none>  bca7b6a028e1  14 hours ago   690MB
```

Running the docker container using the ready image myapp2

- `docker run --rm -it --volume /Users/simonsabag/mobScript/test/.env:/.env registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2`

Command details:

This command is running a container using image

registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2

I make the container interactive and allocate a terminal to interact with **-it**.

Mount to my local **.env** file having the gitlab personal token from my **/Users/simonsabag/mobScript/test/.env** directly into the root of the container as **/.env**.

the **.env** holds the my gitlab personal token

Automatically remove the container once you stop or exit it by using the flag **-rm**.

```
simonsabag@MacBook-Air-s1-Simon test % docker run --rm -it --volume /Users/simonsabag/mobScript/test/.env:/.env registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
[Enter your choice (1-3): 2
[Enter me or issues: issues
[Enter a 4-digit year number: 2025
[

{
  "id": 167524843,
  "iid": 4,
  "project_id": 69905560,
  "title": "This is Test issue 4",
  "description": "This is Test issue 4",
  "state": "closed",
  "created_at": "2025-05-19T08:57:35.855Z",
  "updated_at": "2025-05-19T08:58:18.454Z",
  "closed_at": "2025-05-19T08:58:18.440Z",
  "closed_by": {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "\u202aSimon Sabag\u202c\u200f",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag"
  },
  "labels": [],
  "milestone": null,
  "assignees": [],
  "author": {
    "id": 27657982,
    "username": "ssabag",
    "public_email": "",
    "name": "\u202aSimon Sabag\u202c\u200f",
    "state": "active",
    "locked": false,
    "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
    "web_url": "https://gitlab.com/ssabag"
  }
}
```

Setup my Gitlab private token locally for Protection

- `pip3 install python-dotenv`
- `cd /Users/simonsabag/mobScript/test`

Creating the .env file and update the KEY=Value

- `touch .env`
- `vi .env`

In my code case I have creating the following key:

```
GITLAB_PRIVATE_TOKEN="my token value"
```

```
[simonsabag@MacBook-Air-sl-Simon test % pwd  
/Users/simonsabag/mobScript/test  
[simonsabag@MacBook-Air-sl-Simon test % cat .env  
GITLAB_PRIVATE_TOKEN="glpat [REDACTED]"  
simonsabag@MacBook-Air-sl-Simon test %
```

Created new file called `.gitignore` on the same directory and update it with the name for the env file: e.g `.env`

- `touch .env`
- `vi .gitignore`

```
[simonsabag@MacBook-Air-sl-Simon test % cat .gitignore  
.env  
simonsabag@MacBook-Air-sl-Simon test %
```

Testing the Code using Ready Container to Retrieve and update Data

Below are some use case testing the code using the container:

Use case 1:

Getting all merge requests for year 2025

- **docker run --rm -it --volume /Users/simonsabag/mobScript/test/.env:/.env registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2**

```
Last login: Wed May 21 20:52:11 on ttys006
simonsabag@MacBook-Air-sl-Simon ~ % docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS
S
01eba3db66a3      registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2   "python main.py"   9 minutes ago    Up 9 minutes       8000/tcp
```

- type 2
- type 'mr'
- type '2025'

```
simonsabag@MacBook-Air-sl-Simon test % docker run --rm -it --volume /Users/simonsabag/mobScript/test/.env:/.env registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
|Enter your choice (1-3): 2
|Enter mr or issues: mr
|Enter a 4-digit year number: 2025
[  
  {
    "id": 385023095,
    "iid": 2,
    "project_id": 69899948,
    "title": "new brance",
    "description": "",
    "state": "merged",
    "created_at": "2025-05-21T12:05:48.315Z",
    "updated_at": "2025-05-21T12:06:04.059Z",
    "merged_by": {
        "id": 27657982,
        "username": "ssabag",
        "public_email": "",
        "name": "\u202aSimon Sabag\u202c\u200f",
        "state": "active",
        "locked": false,
        "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
        "web_url": "https://gitlab.com/ssabag"
    },
    "merge_user": {
        "id": 27657982,
        "username": "ssabag",
        "public_email": "",
        "name": "\u202aSimon Sabag\u202c\u200f",
        "state": "active",
        "locked": false,
        "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
        "web_url": "https://gitlab.com/ssabag"
    },
    "merged_at": "2025-05-21T12:06:01.520Z",
    "closed_by": null,
    "closed_at": null,
    "target_branch": "main",
    "source_branch": "feature/new",
    "user_notes_count": 0,
}
```



```
        },
        "web_url": "https://gitlab.com/ssabag-group/learn-gitlab-app/-/merge_requests/4",
        "time_stats": {
            "time_estimate": 0,
            "total_time_spent": 0,
            "human_time_estimate": null,
            "human_total_time_spent": null
        },
        "squash": true,
        "squash_on_merge": true,
        "task_completion_status": {
            "count": 0,
            "completed_count": 0
        },
        "has_conflicts": false,
        "blocking_discussions_resolved": true,
        "approvals_before_merge": null
    }
]
Found 40 mr created in 2025.
```

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
```

```
Enter your choice (1-3):
```

Use case 2:

Getting all issues for year 2025 (created 4 reacods dummy data)

- type 2
- type 'issues'
- type '2025'

```
Found 40 MR created in 2025.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
[Enter your choice (1-3): 2
[Enter mr or issues: issues
[Enter a 4-digit year number: 2025
[
  {
    "id": 167524843,
    "iid": 4,
    "project_id": 69905560,
    "title": "This is Test issue 4",
    "description": "This is Test issue 4",
    "state": "closed",
    "created_at": "2025-05-19T08:57:35.855Z",
    "updated_at": "2025-05-19T08:58:18.454Z",
    "closed_at": "2025-05-19T08:58:18.440Z",
    "closed_by": {
      "id": 27657982,
      "username": "ssabag",
      "public_email": "",
      "name": "\u202aSimon Sabag\u202c\u200f",
      "state": "active",
      "locked": false,
      "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
      "web_url": "https://gitlab.com/ssabag"
    },
    "labels": [],
    "milestone": null,
    "assignees": [],
    "author": {
      "id": 27657982,
      "username": "ssabag",
      "public_email": "",
      "name": "\u202aSimon Sabag\u202c\u200f",
      "state": "active",
      "locked": false,
      "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",
      "web_url": "https://gitlab.com/ssabag"
    },
    "type": "ISSUE",
    "assignee": null,
    "user_notes_count": 1,
    "merge_requests_count": 0,
    "upvotes": 1,
    "downvotes": 0,
    "due_date": null,
    "confidential": false,
    "discussion_locked": null,
    "issue_type": "issue",
    "web_url": "https://gitlab.com/ssabag-group/learn-gitlab-app/-/issues/4",
    "time_stats": {
      "time_estimate": 0,
      "total_time_spent": 0,
      "human_time_estimate": null,
      "human_total_time_spent": null
    }
  }
]
```



```

    "has_tasks": true,
    "task_status": "0 of 0 checklist items completed",
    "_links": {
        "self": "https://gitlab.com/api/v4/projects/69905560/issues/1",
        "notes": "https://gitlab.com/api/v4/projects/69905560/issues/1/notes",
        "award_emoji": "https://gitlab.com/api/v4/projects/69905560/issues/1/award_emoji",
        "project": "https://gitlab.com/api/v4/projects/69905560",
        "closed_as_duplicate_of": null
    },
    "references": {
        "short": "#1",
        "relative": "#1",
        "full": "ssabag-group/learn-gitlab-app#1"
    },
    "severity": "UNKNOWN",
    "moved_to_id": null,
    "imported": false,
    "imported_from": "none",
    "service_desk_reply_to": null
}
]
Found 4 issues created in 2025.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 
```

Grant access to username on a Project

Role	access_level
Guest	10
Reporter	20
Developer	30
Maintainer	40
Owner	50

Use case 3:

- Type 1 for granat access
- type **ssabag76** for username
- type **Test4** for project
- Type: **Owner**

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 1
Enter username: ssabag76
Enter repository or group name: Test4
Enter role (Reporter, Developer, Maintainer, Owner): Owner
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Owner'.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

verification using postman

The screenshot shows a Postman request to the GitLab API endpoint `/api/v4/projects/69940574/members`. The response status is `200 OK` and the time taken is `371 ms`. The response body is a JSON object representing a user member:

```
{ "id": 27953483, "username": "ssabag76", "public_email": null, "name": "Shimon Sabag", "state": "active", "locked": false, "avatar_url": "https://secure.gravatar.com/avatar/bd49fb91e3d46451768a609c8602611f78ead4385073535adcfb7829ffd45167?s=80&d=https://gitlab.com/ssabag76", "web_url": "https://gitlab.com/ssabag76", "access_level": 50, "created_at": "2025-05-18T14:59:13.421Z", "created_by": { "id": 27657982, "username": "ssabag76", "public_email": null, "name": "Shimon Sabag", "state": "active", "locked": false, "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png", "web_url": "https://gitlab.com/ssabag76" } }
```

Use case 4:

- Type 1 for granat access
- type **ssabag76** for username
- type **Test4** for project
- Type: **Maintainer**

```
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Owner' .  
  
--- Main Menu ---  
1. Grant Access  
2. return all issues/merge requests) created on the given year.  
3. Exit  
Enter your choice (1-3): 1  
Enter username: ssabag76  
Enter repository or group name: Test4  
Enter role (Reporter, Developer, Maintainer, Owner): Maintainer  
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Maintainer'.  
  
--- Main Menu ---  
1. Grant Access  
2. return all issues/merge requests) created on the given year.  
3. Exit  
Enter your choice (1-3): █
```

HTTP GitLab API calls / Get members for Project id: 69940574

GET https://gitlab.com/api/v4/projects/69940574/members

Params Authorization Headers (8) Body Scripts ● Settings

Pre-request 1 var template = '
2 <style type="text/css">
3 | .tftable {font-size:14px;color:#333333;width:100%;border-width: 1px; border-color: #87ceeb; border-collapse: c
Post-response 200 OK 350 ms

Body Cookies (2) Headers (29) Test Results

{ } JSON ▶ Preview Visualization

```
43 |     "locked": false,  
44 |     "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png",  
45 |     "web_url": "https://gitlab.com/ssabag"  
46 | },  
47 |     "expires_at": null,  
48 |     "membership_state": "active"  
49 | },  
50 | {  
51 |     "id": 27953483,  
52 |     "username": "ssabag76",  
53 |     "public_email": null,  
54 |     "name": "Shimon Sabag",  
55 |     "state": "active",  
56 |     "locked": false,  
57 |     "avatar_url": "https://secure.gravatar.com/avatar/bd49fb91e3d46451768a609c8602611f78ead4385073535adcfb7829ffd45167?s=80&d=mm",  
58 |     "web_url": "https://gitlab.com/ssabag76",  
59 |     "access_level": 40,  
60 |     "created_at": "2025-05-18T14:59:13.421Z",  
61 |     "created_by": {  
62 |         "id": 27657982,  
63 |         "username": "ssabag",
```

Use case 5:

- Type 1 for granat access
- type **ssabag76** for username
- type **Test4** for project
- Type: **Developer**

```
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Maintainer'.
```

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
[Enter your choice (1-3): 1
[Enter username: ssabag76
[Enter repository or group name: Test4
[Enter role (Reporter, Developer, Maintainer, Owner): Developer
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Developer'.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

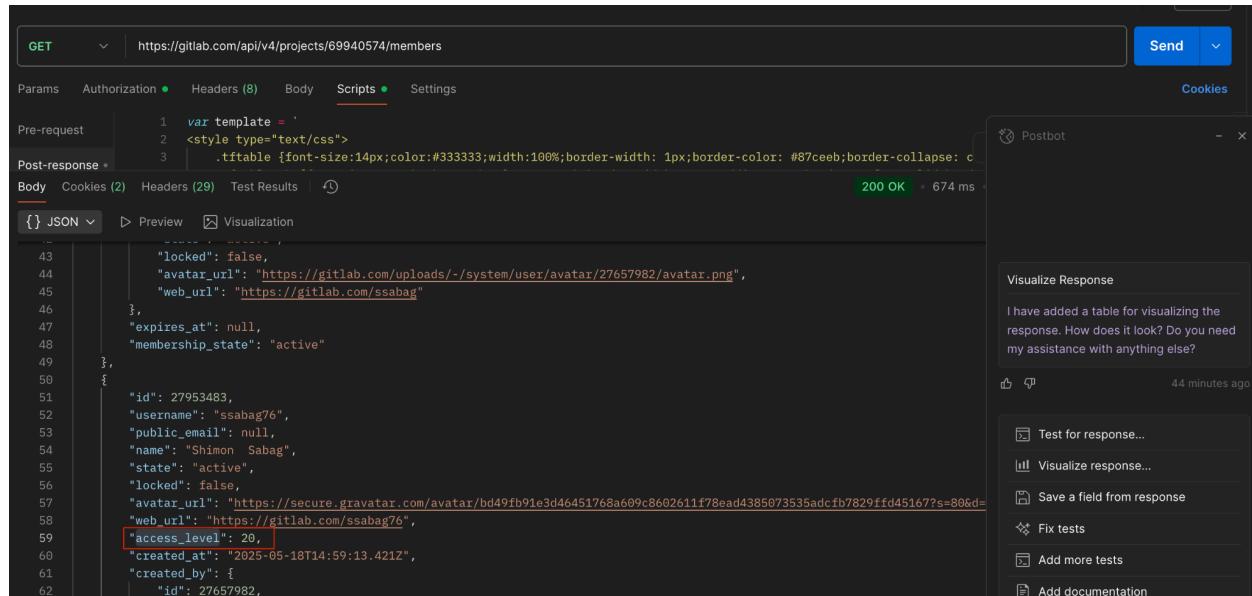
The screenshot shows a Postman API client interface. The URL in the header is `https://gitlab.com/api/v4/projects/69940574/members`. The response status is `200 OK` with a response time of `359 ms`. The response body is displayed in JSON format:

```
{ "id": 27953483, "username": "ssabag76", "public_email": null, "name": "Shimon Sabag", "state": "active", "locked": false, "avatar_url": "https://gitlab.com/uploads/-/system/user/avatar/27657982/avatar.png", "web_url": "https://gitlab.com/ssabag" }, { "id": 27953483, "username": "ssabag76", "public_email": null, "name": "Shimon Sabag", "state": "active", "locked": false, "avatar_url": "https://secure.gravatar.com/avatar/bd49fb91e3d46451768a609c8602611f78ead4385073535adcfb7829ffd45167?s=80&d=https://gitlab.com/ssabag76", "web_url": "https://gitlab.com/ssabag76", "access_level": 30, "created_at": "2025-05-18T14:59:13.421Z", "created_by": { "id": 27657982, "username": "ssabag" }}
```

Use case 6:

- Type 1 for granat access
- type **ssabag76** for username
- type **Test4** for project
- Type: **Reporter**

```
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Developer' .  
--- Main Menu ---  
1. Grant Access  
2. return all issues/merge requests) created on the given year.  
3. Exit  
[Enter your choice (1-3): 1  
[Enter username: ssabag76  
[Enter repository or group name: Test4  
[Enter role (Reporter, Developer, Maintainer, Owner): Reporter  
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Reporter'.  
  
--- Main Menu ---  
1. Grant Access  
2. return all issues/merge requests) created on the given year.  
3. Exit  
Enter your choice (1-3): █
```



The screenshot shows a POSTMAN interface with the following details:

- Method:** GET
- URL:** https://gitlab.com/api/v4/projects/69940574/members
- Headers:** (8)
- Body:** (raw) JSON

```
1 var template = '  
2 <style type="text/css">  
3 | .tftable {font-size:14px;color:#333333;width:100%;border-width: 1px;border-color: #87ceeb; border-collapse: collapse; }  
4 | .tftable th {background-color:#333333; color:white; text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
5 | .tftable td {text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
6 | </style>'  
7 | <table border="1" style="width:100%; border-collapse: collapse;">| Project Members | |
| Name | Access Level |
| Shimon Sabag | 20 |
'
```
- Script:** (8)
- Settings:** (1)
- Pre-request:** (1)

```
1 var template = '  
2 <style type="text/css">  
3 | .tftable {font-size:14px;color:#333333;width:100%;border-width: 1px;border-color: #87ceeb; border-collapse: collapse; }  
4 | .tftable th {background-color:#333333; color:white; text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
5 | .tftable td {text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
6 | </style>'  
7 | <table border="1" style="width:100%; border-collapse: collapse;">| Project Members | |
| Name | Access Level |
| Shimon Sabag | 20 |
'
```
- Post-response:** (1)

```
1 var template = '  
2 <style type="text/css">  
3 | .tftable {font-size:14px;color:#333333;width:100%;border-width: 1px;border-color: #87ceeb; border-collapse: collapse; }  
4 | .tftable th {background-color:#333333; color:white; text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
5 | .tftable td {text-align:left; padding: 8px; border-width: 1px; border-color: #87ceeb; border-collapse: collapse; }  
6 | </style>'  
7 | <table border="1" style="width:100%; border-collapse: collapse;">| Project Members | |
| Name | Access Level |
| Shimon Sabag | 20 |
'
```
- Body:** (2)
- Cookies:** (2)
- Headers:** (29)
- Test Results:** (1)
- Response Status:** 200 OK | 674 ms
- Visualizations:** (1)

Visualize Response
I have added a table for visualizing the response. How does it look? Do you need my assistance with anything else?

 - Test for response...
 - Visualize response...
 - Save a field from response
 - Fix tests
 - Add more tests
 - Add documentation

Use case 7:

- Type 1 for granat access
- type **ssabag76** for username
- type **Test4** for project
- Type: **Guest**

```
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Reporter'.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 1
Enter username: ssabag76
Enter repository or group name: Test4
Enter role (Reporter, Developer, Maintainer, Owner): Guest
Successfully updated role of user 'ssabag76' in project 'Test4' to 'Guest'.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

The screenshot shows a POSTMAN interface with the following details:

- Method:** GET
- URL:** <https://gitlab.com/api/v4/projects/69940574/members>
- Headers:** (8)
- Body:** (Raw) - Contains a script to set a CSS style for the table.
- Script:** (Raw) - Contains the following code:

```
var template = '
<style type="text/css">
  .tftable {font-size:14px;color:#333333;width:100%;border-width: 1px; border-color: #87ceeb; border-collapse: collapse; margin-bottom: 10px; border: 1px solid #87ceeb; padding: 10px; width: 100%;}
  .tftable tr {border-top: 1px solid #87ceeb; border-bottom: 1px solid #87ceeb; background-color: #f2f2f2; }
  .tftable tr:nth-child(2n) {background-color: #d9e1f2; }
  .tftable th {background-color: #87ceeb; color: white; text-align: center; padding: 8px; border-bottom: 1px solid #87ceeb; border-top: 1px solid #87ceeb; }
  .tftable td {padding: 8px; border-bottom: 1px solid #87ceeb; border-top: 1px solid #87ceeb; }
  .tftable th:last-child, .tftable td:last-child {border-right: 1px solid #87ceeb; }
  .tftable tr:last-child td {border-bottom: none; }
  .tftable tr:last-child th {border-bottom: none; }
  .tftable th:first-child, .tftable td:first-child {border-left: 1px solid #87ceeb; }
  .tftable td:last-child {border-left: 1px solid #87ceeb; }
  .tftable th:last-child {border-left: 1px solid #87ceeb; }
  .tftable tr:last-child th {border-left: 1px solid #87ceeb; }
  .tftable tr:last-child td {border-left: 1px solid #87ceeb; }
  .tftable th, .tftable td {text-align: left; vertical-align: bottom; font-weight: normal; font-size: 1em; }
```
- Post-response:** (2) - Contains the JSON response body.
- Body:** (JSON) - Shows the raw JSON response:

```
{ "id": 27953483, "username": "ssabag76", "public_email": null, "name": "Shimon Sabag", "state": "active", "locked": false, "access_level": 10, "created_at": "2025-05-18T14:59:13.421Z", "created_by": { "id": 27657982, "username": "ssabag", "public_email": "" } }
```

- Visualizations:** A table titled "Visualize Response" is present, containing the following rows:
 - I have added a table for visualizing the response. How does it look? Do you need my assistance with anything else?
- Actions:** A sidebar on the right includes links for "Test for response...", "Visualize response...", "Save a field from response", "Fix tests", "Add more tests", and "Add documentation".

Use case 8:

Testing user name that doesn't exist:

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
[Enter your choice (1-3): 1
[Enter username: ssabag10
[Enter repository or group name: Test4
[Enter role (Reporter, Developer, Maintainer, Owner): Reporter
Error: User 'ssabag10' not found.

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

wornged role name:

```
--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3): 1
[Enter username: 1
[Enter repository or group name: ssabag76
[Enter role (Reporter, Developer, Maintainer, Owner): Developerr
Error: Invalid role 'Developerr'. Valid roles are: Guest, Reporter, Developer, Maintainer, Owner

--- Main Menu ---
1. Grant Access
2. return all issues/merge requests) created on the given year.
3. Exit
Enter your choice (1-3):
```

The code and files are share on public GitHub repo

<https://github.com/ssabag4/Home-Assignment-/tree/main>

the file called README.pdf

Thank you for the opportunity. 😊

Converting my Original Base code to web application

As part of my learning practice I have started looking at how I can transform my original Python script into a web application using a web framework. in case we want to simulate the code using web interface rather than contain prompt mentioned above section, for that I have engage with AI for troubleshooting and for completing this task

- Form Handling: Use `request.form.get()` to retrieve data submitted through web forms.
- Flask is a popular choice for its simplicity and flexibility, making it ideal for this kind of task.

Code modification:

1. Upload your converted files is this order

Prerequisites:

- pip install Flask python-dotenv requests
- `.env` file with the personal key (without "")

```
├── app.py
└── .env
    └── templates/
        ├── index.html
        ├── grant_access.html
        ├── get_items.html
        └── result.html
```

Files are placed on the repo

https://github.com/ssabag4/Home-Assignment-/tree/main/web_application

2. installed `pip3 install Flask` in order to run the `app.py`
3. Create new `.env` file with the with the private token where the `app.py` file is located ,on my laptop its place on

```

drwxr-xr-x  6 simonsabag  staff   192 19:10 22 'ןן templates
-rw-r--r--  1 simonsabag  staff  10372 19:19 22 'ןן app.py
[simonsabag@MacBook-Air-sl-Simon web % cat .env
GITLAB_PRIVATE_TOKEN="XXXXXXXXXX"
simonsabag@MacBook-Air-sl-Simon web %

```

4. run the application locally on your computer using the command

python3 app.py

```

simonsabag@MacBook-Air-sl-Simon web % python3 app.py
 * Serving Flask app 'app'
 * Debug mode: on
[WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
[ * Running on http://127.0.0.1:5000
[Press CTRL+C to quit
[ * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 729-408-410

```

127.0.0.1:5000 ⓘ

GitLab Management Tool

Welcome to the GitLab management web interface. Please choose an option:

1. Grant Access 2. Get Issues/Merge Requests by Year

Grant Access to GitLab

GitLab Username: ssabag76

Project or Group Name/ID: Test4

Entity Type: Project

Role: Guest

Grant Access

Back to Main Menu

Grant Access to GitLab

Successfully updated role of user 'ssabag76' in project 'Test4' to 'Guest'.

GitLab Username:

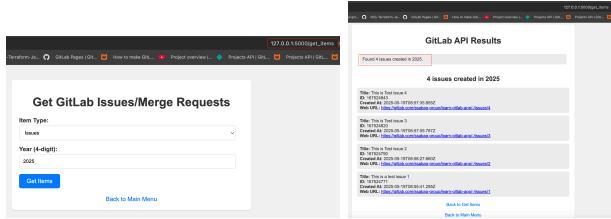
Project or Group Name/ID:

Entity Type: Project

Role: Guest

Grant Access

Back to Main Menu



Building the web Docker Image and Run its as a Container

Creating Gitlab Project and place the following file for creating the image

Project Structure on your Computer (before Git commit)

```

├── app.py
├── .env
├── Dockerfile
├── .dockerignore
├── .gitlab-ci.yml
├── requirements.txt
└── templates/
    ├── index.html
    ├── grant_access.html
    ├── get_items.html
    └── result.html

```

Files are stored on the Gitlab repo

.gitlab-ci.yml - This file configures my GitLab CI/CD pipeline.

.dockerignore - This ignores your environment variable file, which contains my API keys GITLAB_PRIVATE_TOKEN , rest of the lines are best practice that exclude unnecessary files (like `.env`, `__pycache__`, virtual environments) from Docker image.

Dockerfile - defines how to build Docker image.

requirements.txt - lists all Python dependencies need it for the base image

.env - holds the personal token need it to access my gitlab account

app.py - main application

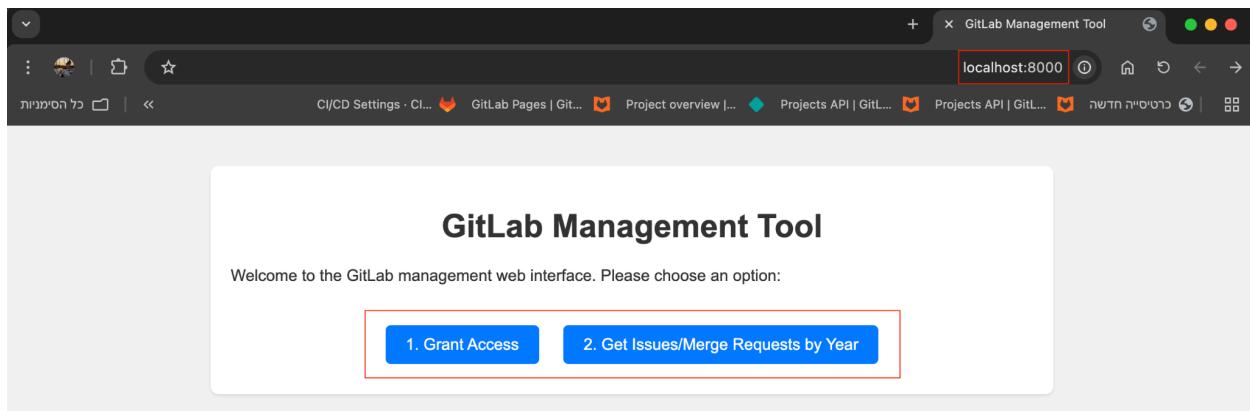
templates:* - basic HTML files (index.html, grant_access.html, get_items.html, result.html) to serve as the user interface.

To deploy it on Docker container run the following command:

- docker stop my-gitlab-webapp
- docker rm my-gitlab-webapp
- Run Docker container to ensure the container picks up the updated environment variable from your .env file.

docker run -d --name my-gitlab-webapp -p 8000:5000 --env-file ./env
[registry.gitlab.com/ssabag-group/my-gitlab-webapp/gitlab-flask-app:latest](https://registry.gitlab.com/ssabag-group/my-gitlab-webapp/gitlab-flask-app/latest)

- run the docker image in detached mode (-d)
- with human readable name “**my-gitlab-webapp**” (--name)
- port forwarding to maps a port on my host (-p 8000:5000)
- This option **--env-file ./env** tells Docker to read environment variables from a specified file (in my case **.env** located in the current directory) and pass them into the container's environment.
- full path of the image in the GitLab Container Registry.
- Test application in the browser at <http://localhost:8000>



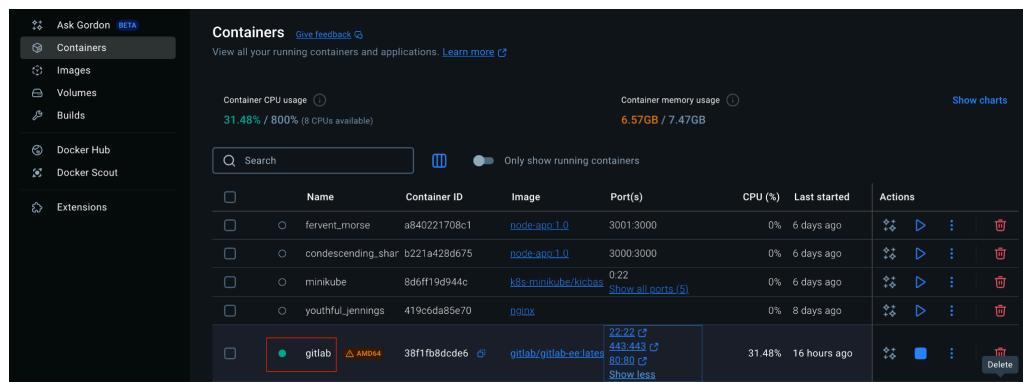
```
simonsabag@MacBook-Air-s1-Simon web % docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
3487d9ba2b15 registry.gitlab.com/ssabag-group/my-gitlab-webapp/gitlab-flask-app:latest "gunicorn --bind 0.0.0.0:5000" 12 minutes ago Up 12 minutes 0.0.0.0:8000->5000/tcp my-gitlab-webapp
bf07842314fe registry.gitlab.com/ssabag-group/learn-gitlab-app/myapp2 "python main.py" 24 minutes ago Up 24 minutes 8000/tcp nostalgic_shockley
simonsabag@MacBook-Air-s1-Simon web %
```

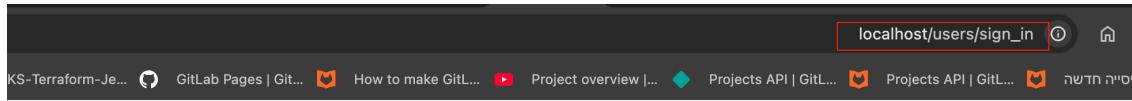
Gitlab Docker Simulator Incase I will need another environment for testing (eventually it was not in use)

- **Pull the Docker Image:** Begin by retrieving the official GitLab Docker image using the **docker login/pull** commands. This will download the necessary files to run GitLab locally.
- **Extract the Initial Root Password:** After the container starts, I retrieve the initial root password. This is typically found in the container's logs.
- **Populate Data:** populating my GitLab environment with projects, users, groups, and any other necessary data for my work assignment.

```
simonsabag@MacBook-Air-sl-Simon ~ % docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
simonsabag@MacBook-Air-sl-Simon ~ % sudo docker run --detach \
--hostname gitlab.example.com \
--publish 443:443 --publish 80:80 --publish 22:22 \
--name gitlab \
--restart always \
--volume $GITLAB_HOME/config:/etc/gitlab \
--volume $GITLAB_HOME/logs:/var/log/gitlab \
--volume $GITLAB_HOME/data:/var/opt/gitlab \
--shm-size 256m \
gitlab/gitlab-ce:latest
Unable to find image 'gitlab/gitlab-ce:latest' locally
latest: Pulling from gitlab/gitlab-ce
f1693e13474a: Pull complete
e/b27b55dcfc: Pull complete
7ce07e0e9c07: Pull complete
5e642901bc45: Pull complete
7a23267a2251: Pull complete
0622fa788ed1: Pull complete
bf5b3bdd7179: Pull complete
2dec9c729e44: Pull complete
ee5bc962d9b: Pull complete
Digest: sha256:4d7a2f20d77d211f1fd8be64653af6a4b74f89f153fa0eb6a0faa8f6273ca48e
Status: Downloaded newer image for gitlab/gitlab-ce:latest
WARNING: The requested image's platform (linux/amd64) does not match the detected host platform (linux/arm64/v8) and no specific platform was requested
38ff1fb8dcd6e8f7db58f499accd5356e030e0b7b7488a2b7dcc184cad7622b
simonsabag@MacBook-Air-sl-Simon ~ % docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
38ff1fb8dcd6e gitlab/gitlab-ce:latest "/assets/init-contai..." 11 seconds ago Up 10 seconds (health: starting) 0.0.0.0:22->22/tcp, 0.0.0.0:80->80/tcp, 0.0.0.0:443->443/tcp gitlab
simonsabag@MacBook-Air-sl-Simon ~ %
simonsabag@MacBook-Air-sl-Simon ~ % docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
38ff1fb8dcd6e gitlab/gitlab-ce:latest "/assets/init-contai..." 50 seconds ago Up 49 seconds (health: starting) 0.0.0.0:22->22/tcp, 0.0.0.0:80->80/tcp, 0.0.0.0:443->443/tcp gitlab
simonsabag@MacBook-Air-sl-Simon ~ %
zsh: command not found: pingn
simonsabag@MacBook-Air-sl-Simon ~ % ping gitlab.example.com
ping: cannot resolve gitlab.example.com: Unknown host
simonsabag@MacBook-Air-sl-Simon ~ % docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
38ff1fb8dcd6e gitlab/gitlab-ce:latest "/assets/init-contai..." 3 minutes ago Up 3 minutes (healthy) 0.0.0.0:22->22/tcp, 0.0.0.0:80->80/tcp, 0.0.0.0:443->443/tcp gitlab
simonsabag@MacBook-Air-sl-Simon ~ %

simonsabag@MacBook-Air-sl-Simon Day-17-start % docker exec -it gitlab bash -c 'cat /etc/gitlab/initial_root_password' | grep -i password
#           1. If provided manually (either via '$GITLAB_ROOT_PASSWORD' environment variable or via 'gitlab_rails['initial_root_password']' setting in 'gitlab.rb', it was provided before or the first time (usually, the first reconfigure run).
#           2. Password hasn't been changed manually, either via UI or via command line.
#           If the password shown here doesn't work, you must reset the admin password following https://docs.gitlab.com/ee/security/reset_user_password.html#reset-your-root-password.
Password: h7JSE1vB1lr9hanNw
```





A screenshot of the User Settings / Access tokens page. It shows a message "Your new personal access token has been created." Below this is a modal titled "Your new personal access token" containing a long string of characters and two copy buttons. The main table lists one active token: "new_token" with scopes "api, read_api, read_user, create_runner, manage_runner, k8s_proxy, self_rotate, read_repository, write_repository, read_virtual_registry, write_virtual_registry, ai_features, sudo, admin_mode, read_service_ping". The token was created on May 18, 2025, last used on May 18, 2025, and expires in 4 weeks.

A screenshot of a project details page for "Test1" in the "docker_test_group" namespace. The page shows a file tree with "main" and "test" branches. The "test" branch has files "ci", "gitlab-ci.yml", "README.md", "main.py", and "requirements.txt". The "main" branch has a file "README.md". The right sidebar displays "Project information" including 5 commits, 1 branch, 0 tags, 9 KIB Project Storage, and links to README, CI/CD configuration, LICENSE, CHANGELOG, CONTRIBUTING, Auto DevOps enabled, Add Kubernetes cluster, Add Wiki, and Configure Integrations.

code diagram

