

SOLUTION IOT DATAVIZ OPT API TEMPS ATTENTE + MATRICE LED



MIAGE M2 - 2024/2025

EQUIPE



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CHT - Ingénieur logiciel

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CCI - Architecte sys/rés



PROJET

Expérience DEV

Projet DATAVIZ



COMMENT?

Utilisation capacités matrice LED



POURQUOI?

Affichage "temps d'attente en agence"

Démonstration polyvalence matrice LED



PLAN

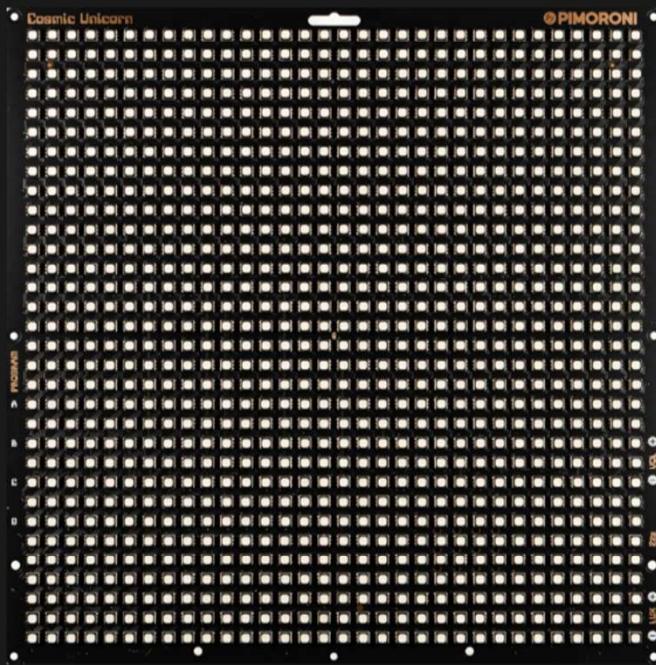
Matériel
APIGEE
Script
Affichages
Que retenir?
Sources



MATÉRIEL



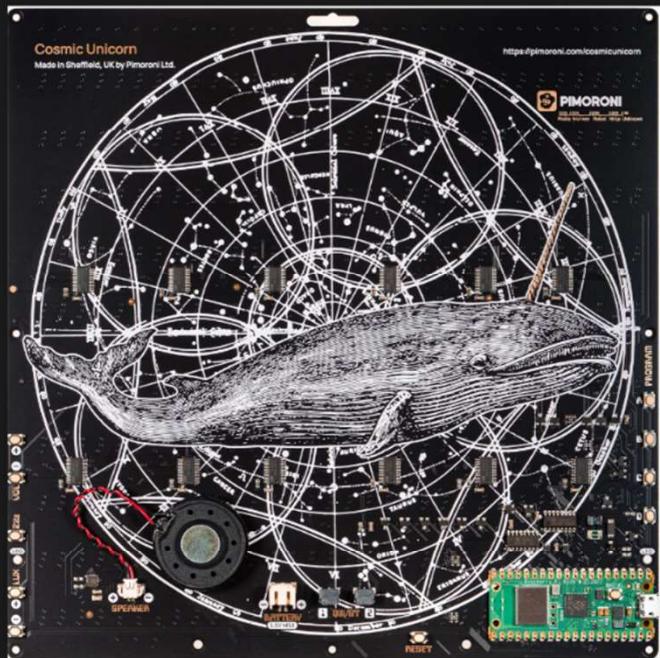
Pimoroni Cosmic-Unicorn



Face avant
1024 LEDs RGB
Grille 32x32



Pimoroni Cosmic-Unicorn



Face arrière
Alim/Prog USB
9 boutons (8 prog)



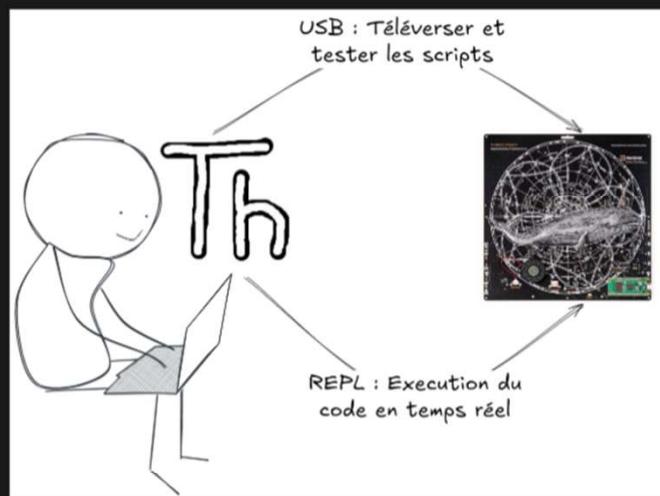
Raspberry Pi PicoW intégré



Processeur Dual Arm
Mémoire 2 Mo flash
Wifi 2.4G
C/C++ & MicroPython



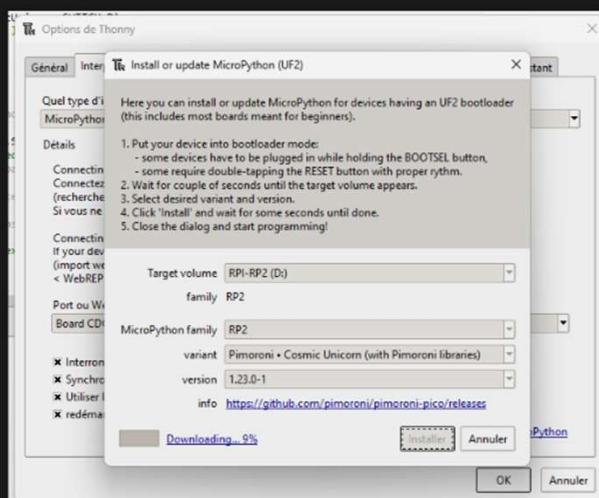
Stack Logiciel



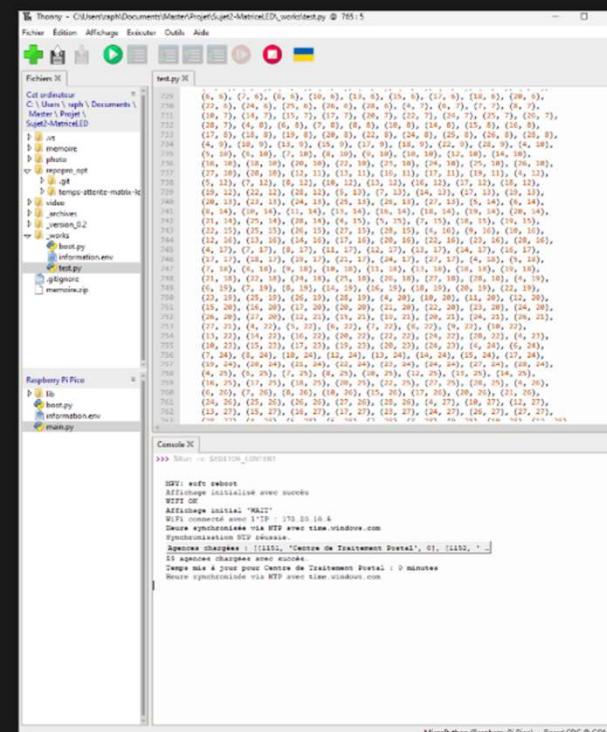
MycroPython
Thonny
USB/REPL



Thonny



Install/upgrade/hard-reset



Gestion/test/téléversement

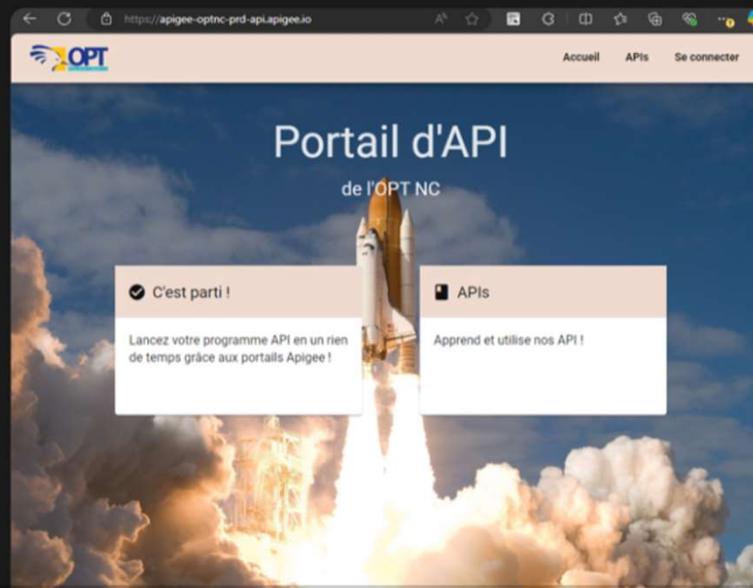
APIGEE



Plateforme de gestion d'API

Portail de développeurs permet :

- Accès aux API
- Création simplifiée API
- Accès documentaires



Apigee OPT NC

opt-temps-attente-agences-api

The screenshot displays the Apigee API console interface with two main panels.

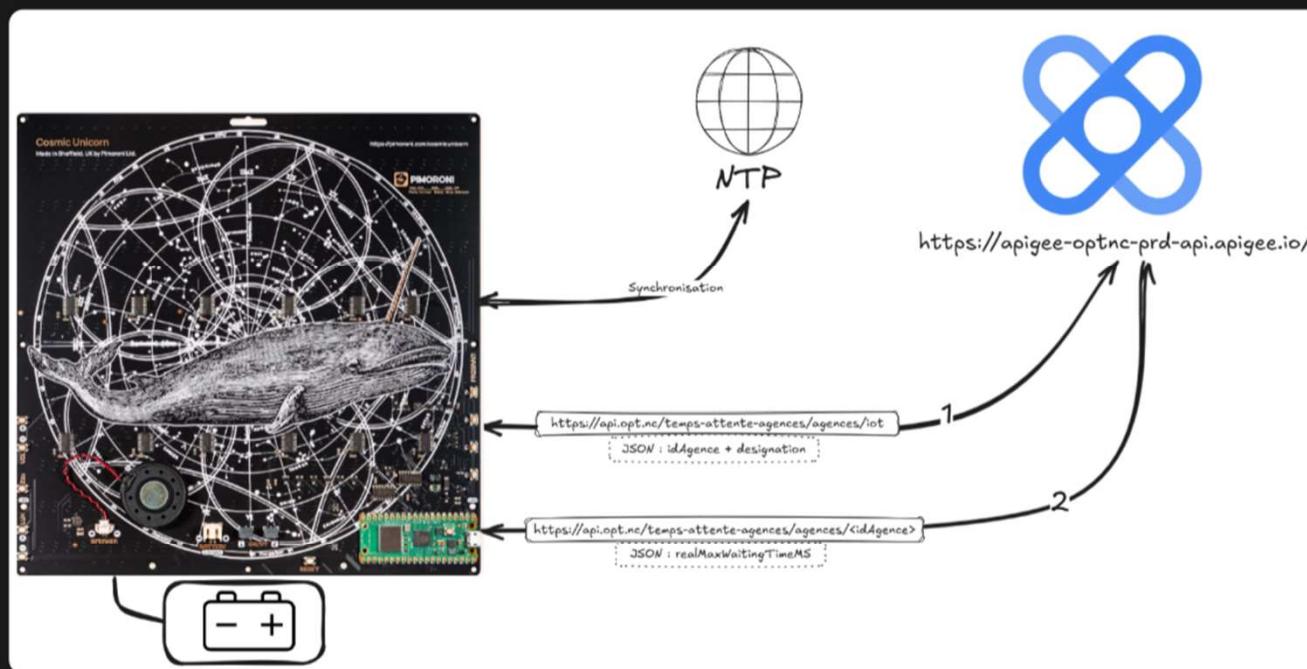
Left Panel: Shows the `opt-temps-attente-agences-api` API overview. It includes a sidebar with paths like `/agences`, `(id)`, `(id)/...`, `sync`, and `/communes`. The `GET /agences/iot` endpoint is selected, which retrieves a list of agencies and their IoT ID. The response body is shown as JSON:

```
[{"idAgence": 1151, "designation": "agence principale"}, {"idAgence": 4151, "designation": "agence secondaire"}]
```

Right Panel: Shows the `opt-temps-attente-agences-api API` details. It lists the `GET /agences/{id}` endpoint, which retrieves an agency by its ID. The `Path Parameters` section shows `id` (required) as an integer (int32). The `Response Types` section shows a 200 status code returning an agency object. The response body is shown as JSON:

```
{"idAgence": 1151, "designation": "Agence principale", "realAgenceLastingTimeMs": 0, "realAgenceLastingTimeMs": 0, "estimatedAgenceLastingTimeMs": 0, "coordonneesX": 166.448, "coordonneesY": -22.276, "coordonneesXPrécise": 0, "coordonneesYPrécise": 0, "position": {"lon": 166.448, "lat": -22.276}, "commune": "Nouméa", "type": "Agence principale", "codeESIRius": "1191", "codePostal": "98800"}
```

API consommées





SCRIPT

BOOT.PY

Fichier de boot de la matrice



MAIN.PY

Fichier micropython du projet

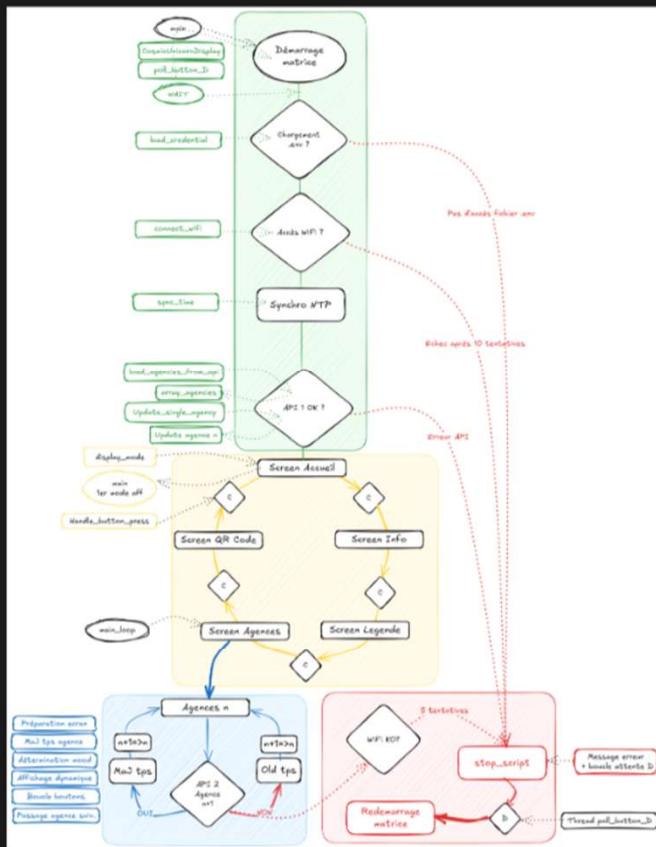


INFORMATION.ENV

Stockage des différents credential



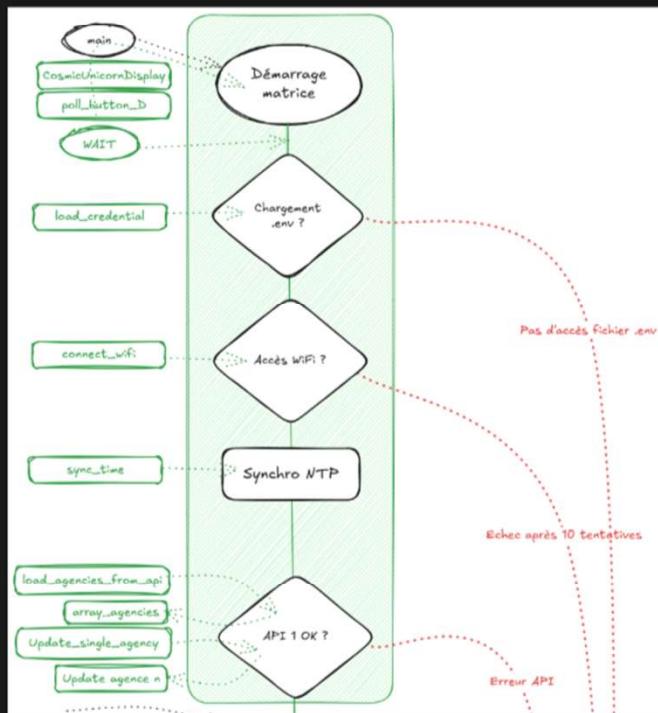
Principe du script



Phase de démarrage
Phase affichages
Phase agences
Phase erreurs



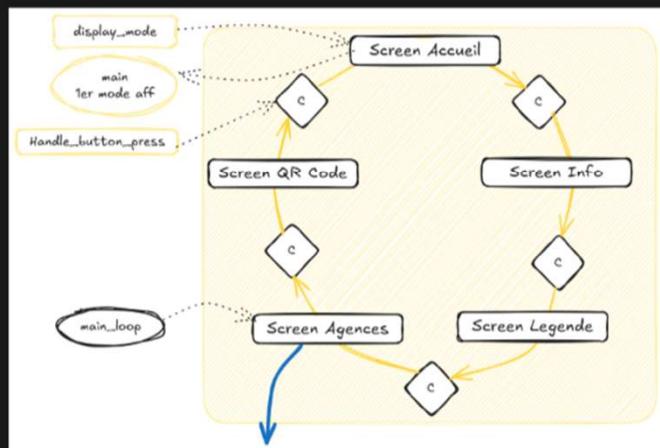
Phase de démarrage



Chargement .env
Connexion WiFi
Synchronisation NTP
Retour API



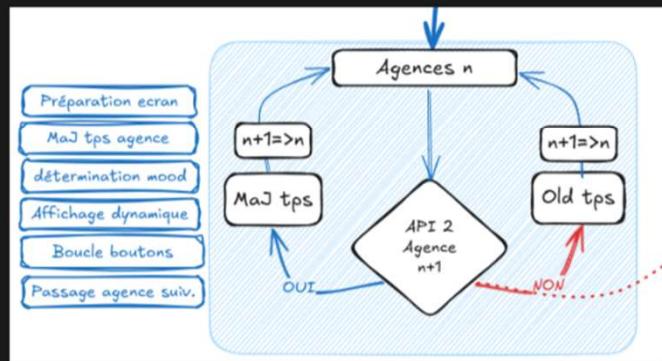
Phase d'affichages



Acceuil
Informations
Légendes
Agences
QR Code
=> Bascule par pression C



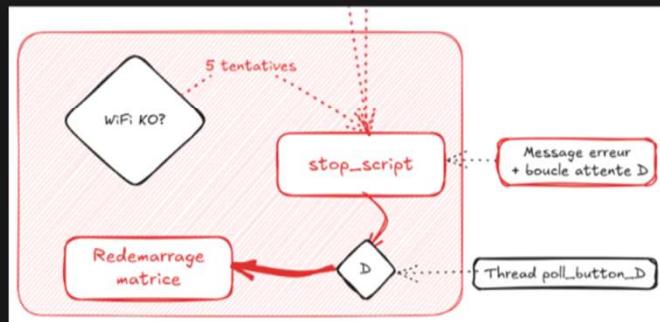
Phase agence



Affichage agences n
Retour API agence n+1
Bascule sur agence n+1



Contrôle d'erreur



Affichage "Erreur"
Pression bouton D



AFFICHAGES



Accueil



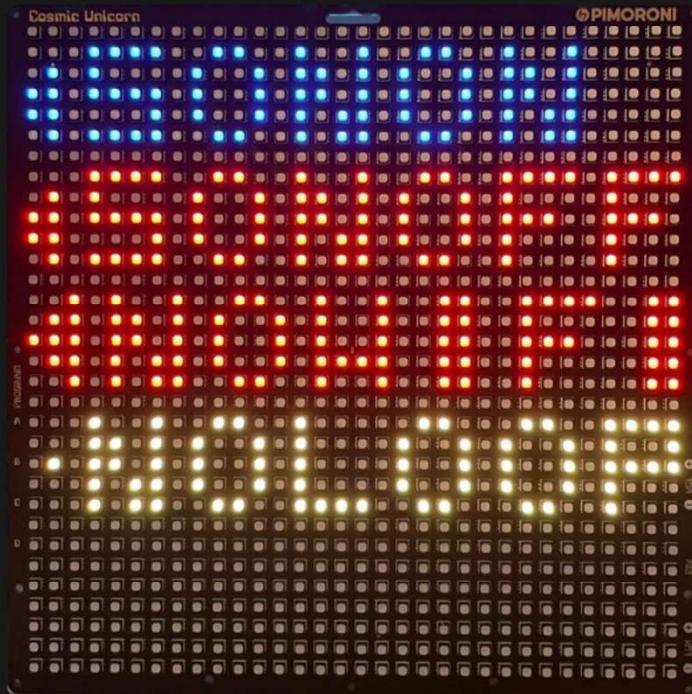
Information



Info accès WiFi
Info lecture clé API



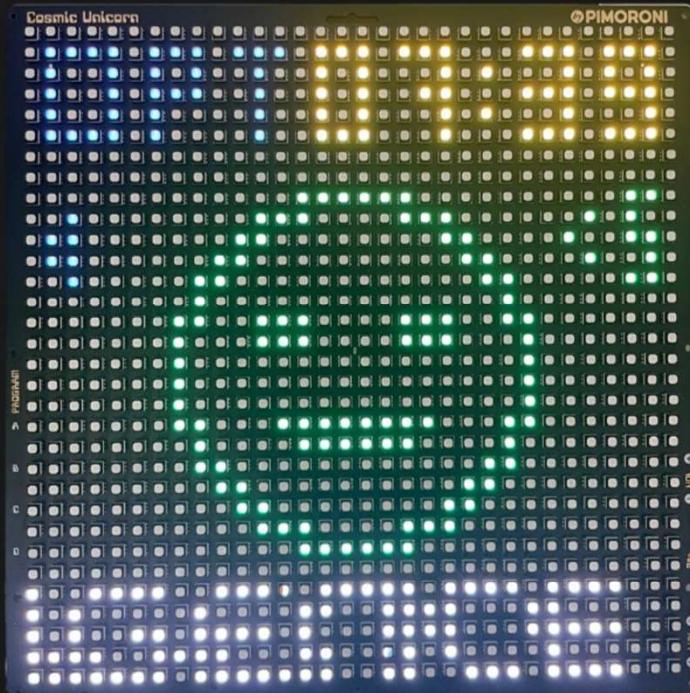
Légendes affichage agence



- Icone son activé
- Icone son désactivé
- Icone état WIFI
- Icone arrêt boucle



Agences



Sigle OPT
Heure NTP
Smiley temps attente
Icone Son
Information Temps
Icone Wifi
Icone boucle
Défilement agence



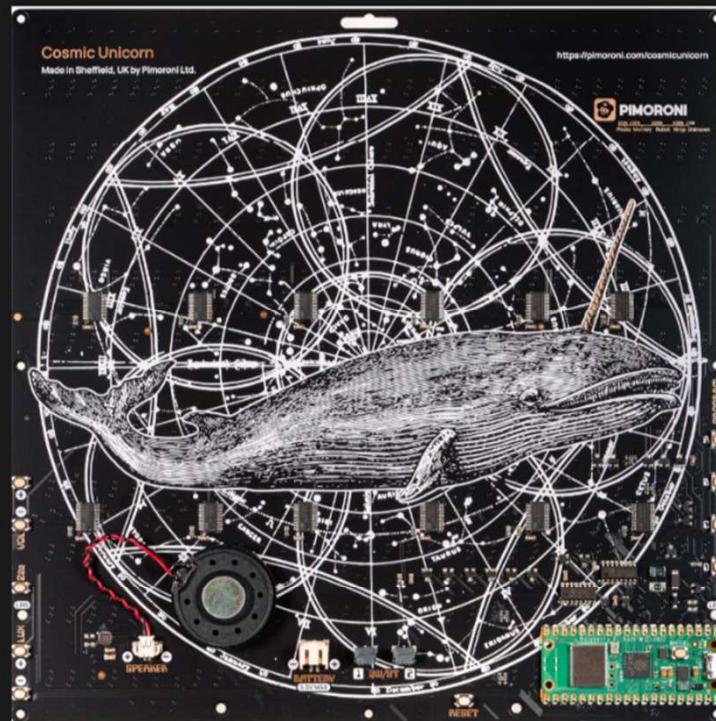
QR Code



Boutons programmables

Volume +/-

Lux +/-



- A: Son
- B: Boucle
- C: Screen
- D: Reboot



QUE RETENIR ?



POINTS SENSIBLES

Univers DevOps

Langage MicroPython

Utilisation de GitHub



GAINS POSSIBLES

Solution modulable

Optimisation script

Ajout de matrices

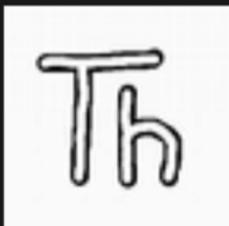


SOURCES



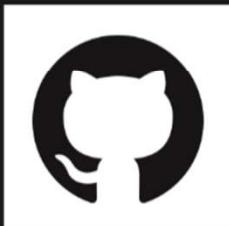
Sources matrice

GitHub Pimoroni Ltd



Gestion Data matrice

Logiciel Thonny



Support projet

<https://github.com/adriens/temps-attente-matrix-led>



Hackster.io - <https://bit.ly/3YZZRkJ>

