

SOLUTION IOT DATAVIZ OPT API TEMPS ATTENTE + MATRICE LED



MIAGE M2 - 2024/2025

EQUIPE



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PROJET

Expérience DEV

Projet DATAVIZ



COMMENT?

Utilisation capacités matrice LED



POURQUOI?

Affichage "temps d'attente en agence"

Démonstration polyvalence matrice LED



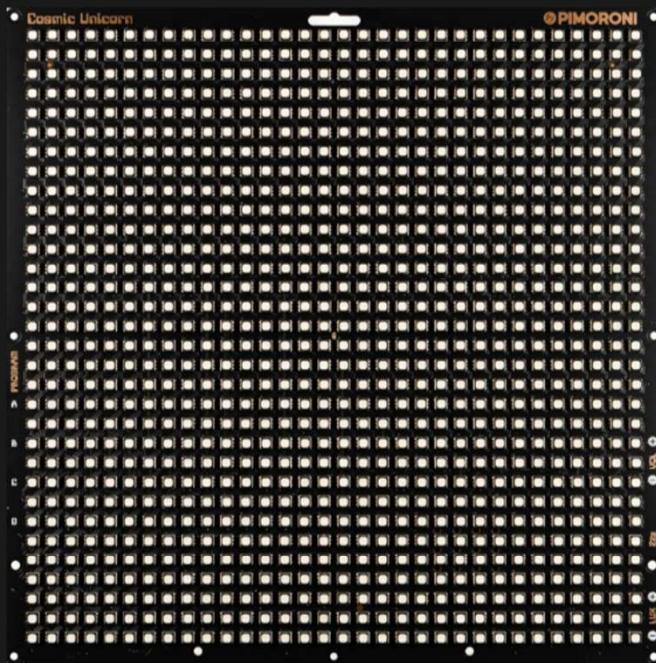
PLAN



MATÉRIEL



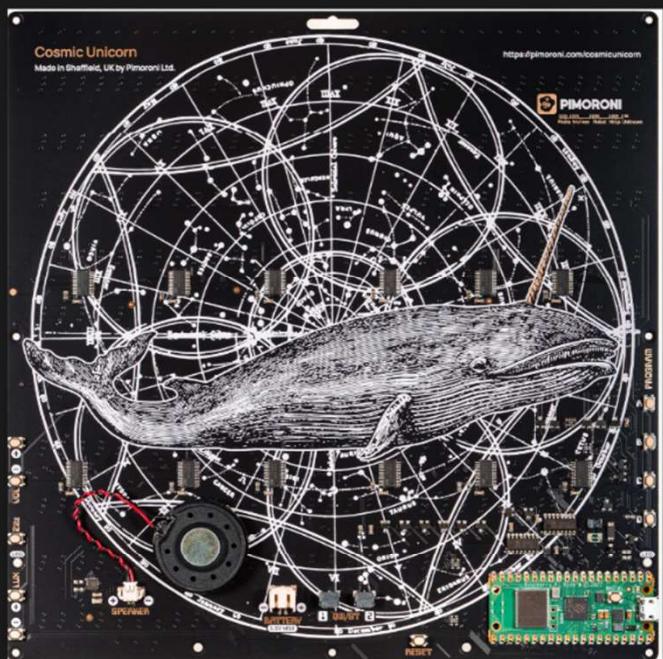
Pimoroni Cosmic-Unicorn



Face avant
1024 LEDs RGB
Grille 32x32



Pimoroni Cosmic-Unicorn



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



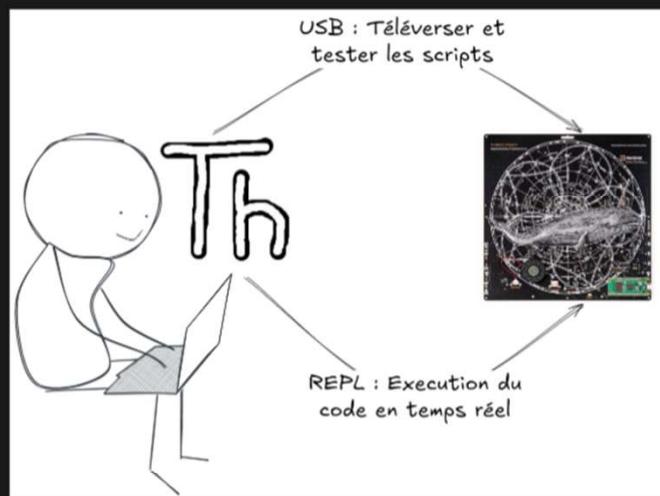
Raspberry Pi PicoW intégré



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



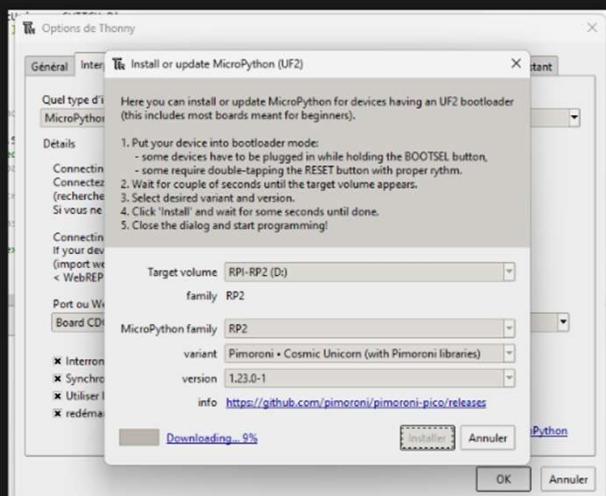
Stack Logiciel



Matrice LED
MycroPython
Thonny
USB/REPL



Thonny



Install/upgrade/hard-reset

```
>>> sudo reboot
RTC initialisé avec succès
RTC synchronisation via NTP avec time.windows.com
Synchronisation RTC réussie.
homedir change en "/libexec/Centre de Traitement Postal", 01.1112, -.
Téléchargement terminé
Temps mis à jour pour Centre de Traitement Postal : 0 minutes
heure synchronisée via NTP avec time.windows.com
```

Gestion/test/téléversement

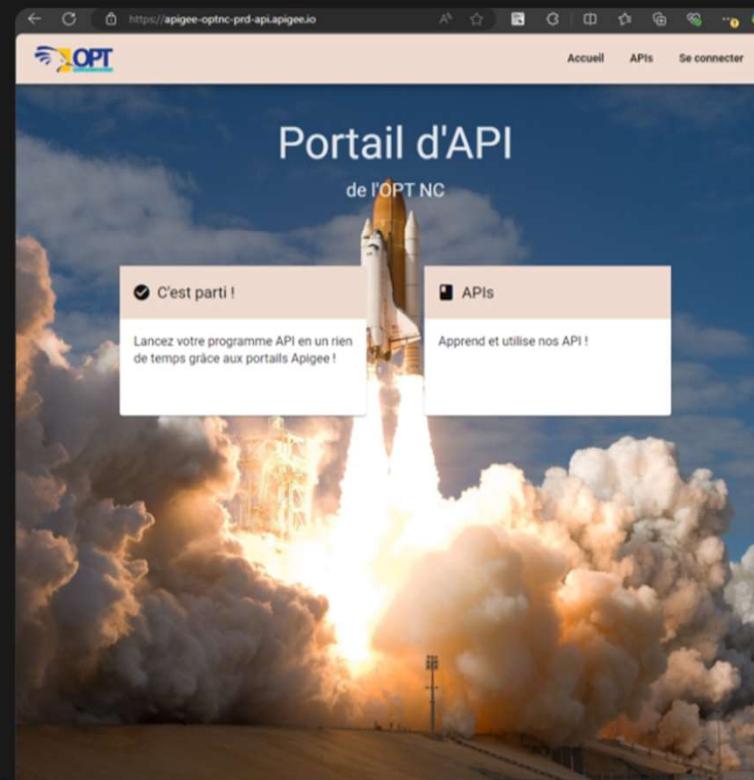


APIGEE



Plateforme de gestion d'API

Accès API / Crédit simplifié / accès doc



Apigee Endpoint 1 OPT

IoT : Récupérer listing agences

The screenshot shows the Apigee API console interface. On the left, the sidebar lists various components and schemas. The main panel displays the details for the `GET /agences/iot` endpoint. The description states: "Récupère la liste des agences et de leur id pour IoT". The `HTTP request` field contains the URL `https://apigee-optnc-prd-api.apigee.io/docs/temps-dattente-en-agence-opt/1/routes/agences/iot/get`. The `Response Types` section indicates a `200: Liste des agences pour IoT` response in `application/json`. An `Example` block shows a JSON array of agency objects:

```
[{"idAgence": 1111, "designation": "Agence principale"}, {"idAgence": 4333, "designation": "Agence secondaire"}]
```

The `Body` section shows the schema for the `agence` field:

```
agence: integer (int32)
```

The `designation` field is shown as a string:

```
designation: string
```

Below the example, the `Authentication Requirements` section specifies `API Key Authentication` with a key location of `headers` and a parameter name of `x-apitoken`.

On the right side, there is a `Try this API` section with a `EXECUTE` button. A modal window titled `200 OK` displays the JSON response from the API call:

```
[{"idAgence": 4333, "designation": "Agence de NOUVEAU PLURI", "hasBorneNFCIRUS": false}, {"idAgence": 4333, "designation": "Agence de NOUVELLE AGENCE", "hasBorneNFCIRUS": true}, {"idAgence": 4333, "designation": "Agence de NOUVELLE AGENCE PRINCIPALE", "hasBorneNFCIRUS": true}, {"idAgence": 4333, "designation": "Agence de OUEGUA", "hasBorneNFCIRUS": true}]
```



Apigee Endpoit 2 OPT

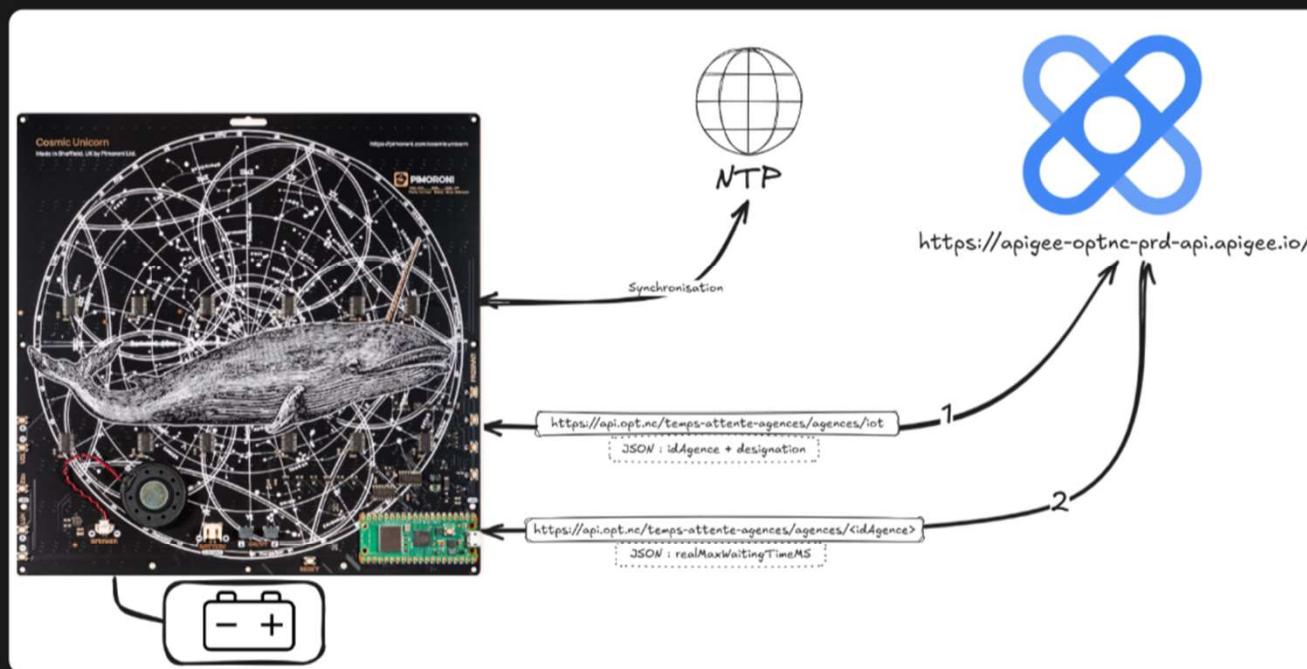
Récupérer RealMaxWaitingTimeMS / agence

The screenshot shows the Apigee API documentation for the 'opt-temps-attente-agences-api'. The left sidebar lists various components and schemas. The main panel details the 'GET /agences/{id}' endpoint, which retrieves an agency and its information based on its identifier. It includes an example HTTP request URL: `https://apigee-optnc-prd-api.apigee.io/docs/temps-dattente-en-agence-opt/v1/routes/agences/%7Bid%7D/get`. The 'Path Parameters' section shows a required parameter `id` with a value of `1151`. The 'Response Types' section shows a sample JSON response:

```
{ "agence": 1151, "designation": "Agence principale", "realMaxWaitingTime": 0, "realWaitingTime": 0, "dateCreation": "2024-10-08T09:46:00", "coordonnees": 164.448, "coordonnee": -22.276, "coordonneeX": 0, "coordonneeY": 0, "position": [ { "lon": 164.448, "lat": -22.276 } ], "nom": "Nouvelles", "type": "Agence principale", "codeIdentifiant": "1151", "codeIdentifiantType": "Nouvelles", "lienDittoribu": "", "localite": "Nouvelles", "idRef": "98834", "idRefType": "98800", "localiteRef": "Nouvelles", "updatedDate": "2024-10-08T09:46:00" }
```

A browser window in the background shows the same API documentation page. The status bar at the bottom of the screenshot indicates '4 . 4'.

API consommées





SCRIPT

BOOT.PY

Fichier de boot de la matrice



MAIN.PY

Fichier micropython du projet

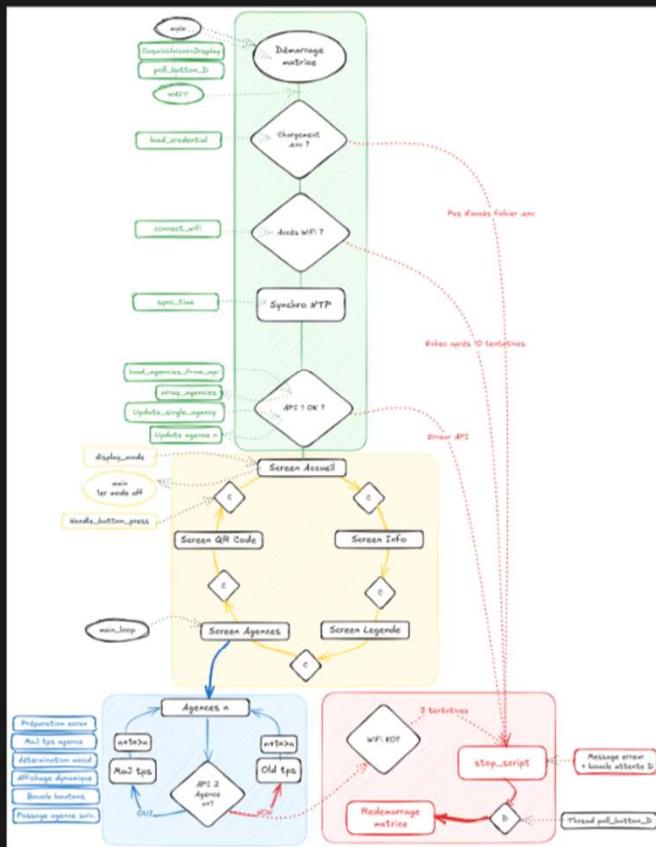


INFORMATION.ENV

Stockage des différents credential



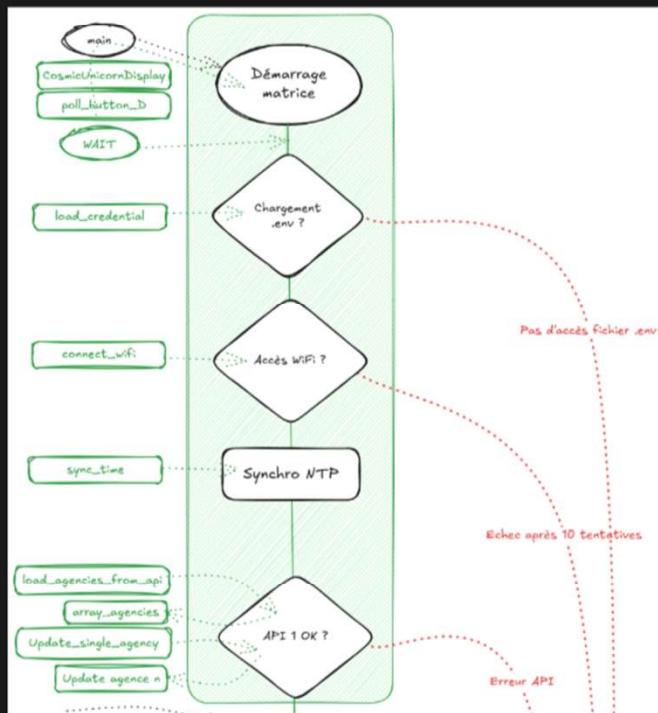
Principe du script



Phase de démarrage
Phase affichages
Phase agences
Phase erreurs



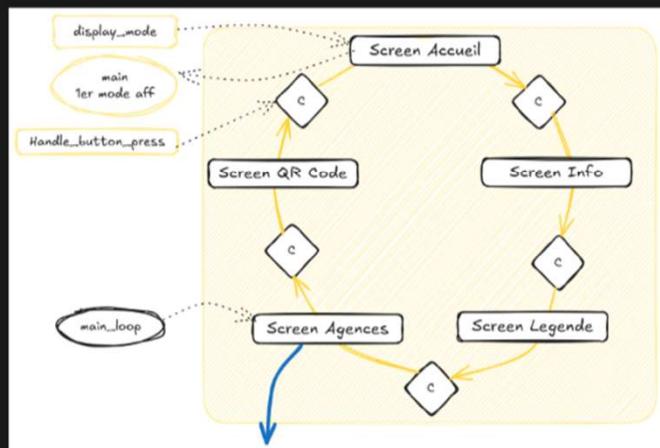
Phase de démarrage



Chargement .env
Connexion WiFi
Synchronisation NTP
Retour API



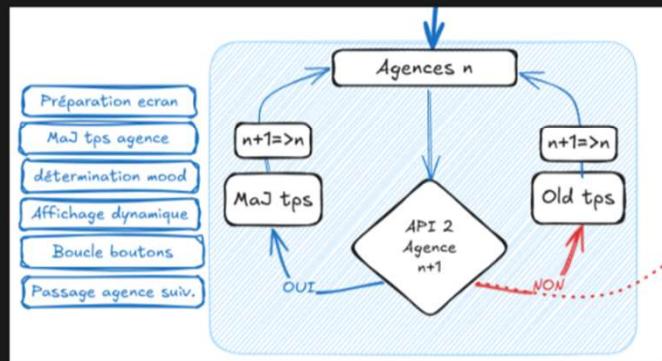
Phase d'affichages



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



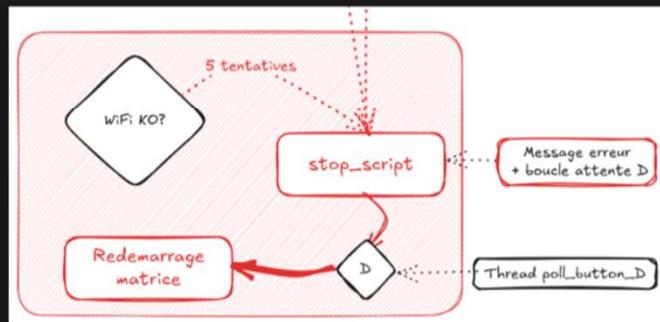
Phase agence



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



Contrôle d'erreur



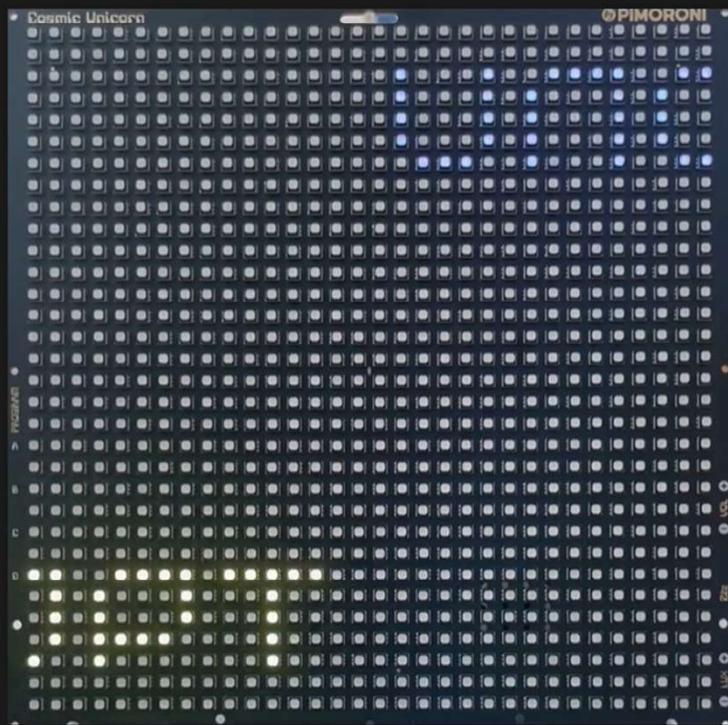
Affichage "Erreur"
Pression bouton D



AFFICHAGES



Accueil



Information



Info accès WiFi
Info lecture clé API



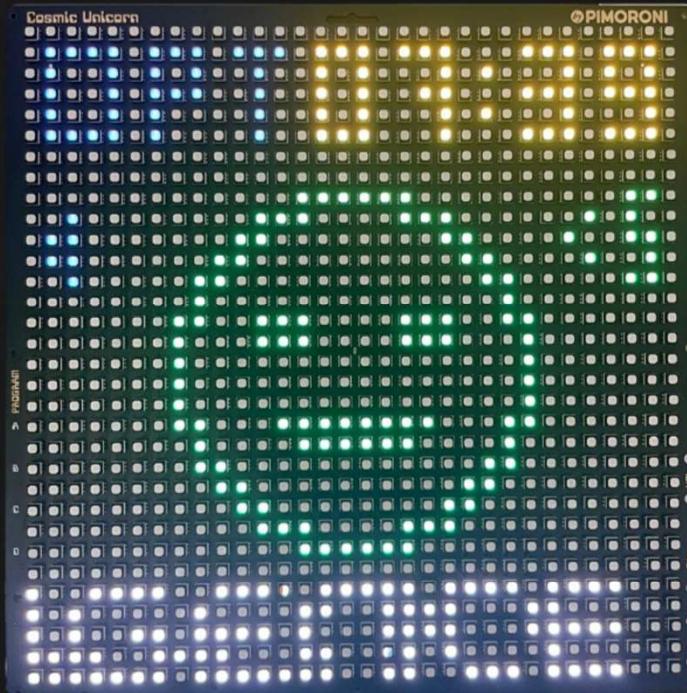
Légendes affichage agence



- 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



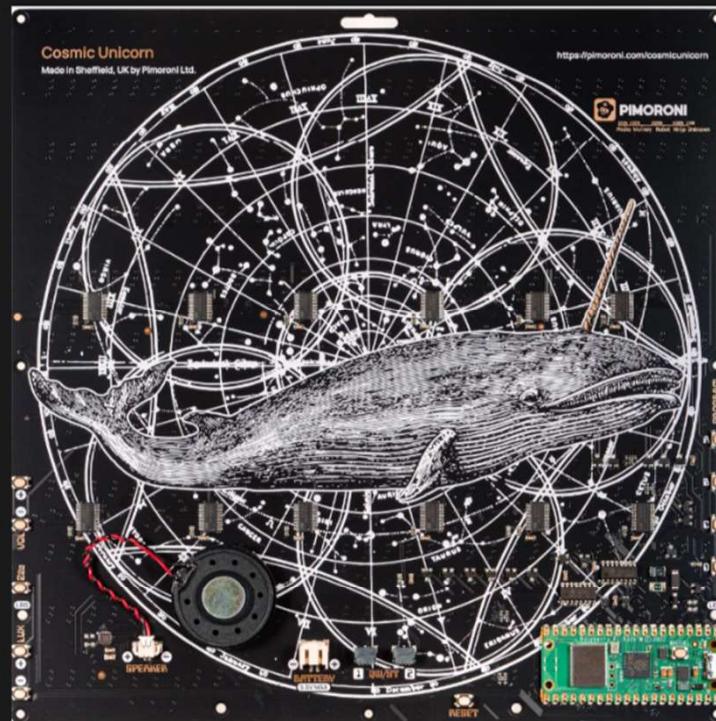
A screenshot of a project page on the hackster.io website. The header includes the hackster.io logo, a search bar, and a "Sign up" button. Below the header, there are navigation links for "Projects", "Channels", "News", "Contests", and "Events". The main content features a profile picture of Adrien Sales and the text "Published November 15, 2024 © Apache-2.0". The title of the project is "Post-Office Wait Time API-driven waiting time LED Matrix". Below the title, there are three numbered steps: 1. Hey stranger! Sign up to access unlimited projects featuring Art and more – it's free. 2. Sign up (button) 3. Not now. At the bottom of the page are navigation icons for back, forward, upload, and file operations.



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

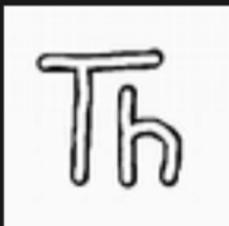


SOURCES



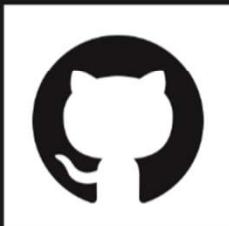
Sources matrice

GitHub Pimoroni Ltd



Gestion Data matrice

Logiciel Thonny



Support projet

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



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

