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CAPYTALE

A Creation and Sharing Platform for Programming Education

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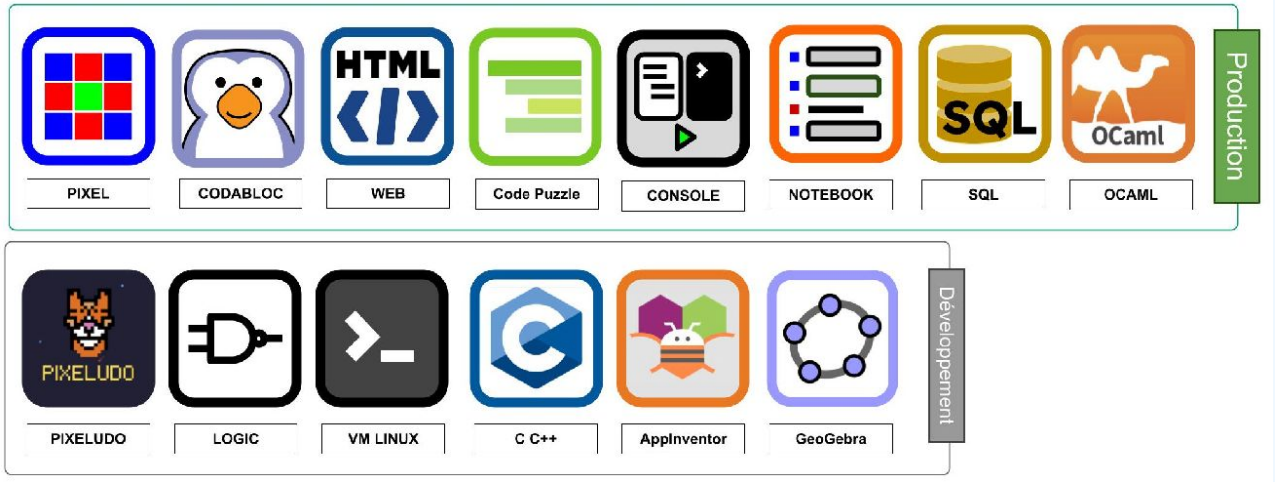
A standardized work environment adapted to the needs of secondary education



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Infrastructure

First attempt

A **DIY CMS** to manage users and contents.

One docker per user to load a dedicated notebook running a given ipynb file.

3 servers: Intel Xeon Gold 5220 CPU @ 2.20GHz **18 cores + 512GB RAM**

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A **DIY CMS** to manage users and contents.

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Current solution

A **Drupal 9 CMS** to manage users and contents.

Basthon: a static website (html + JS + Wasm) that deals with the CMS via REST-API and **runs contents on client's browser**.

1 server: Intel Xeon 2 CPU E5-2620 v3 @ 2.40GHz **2 cores + 15GB RAM**

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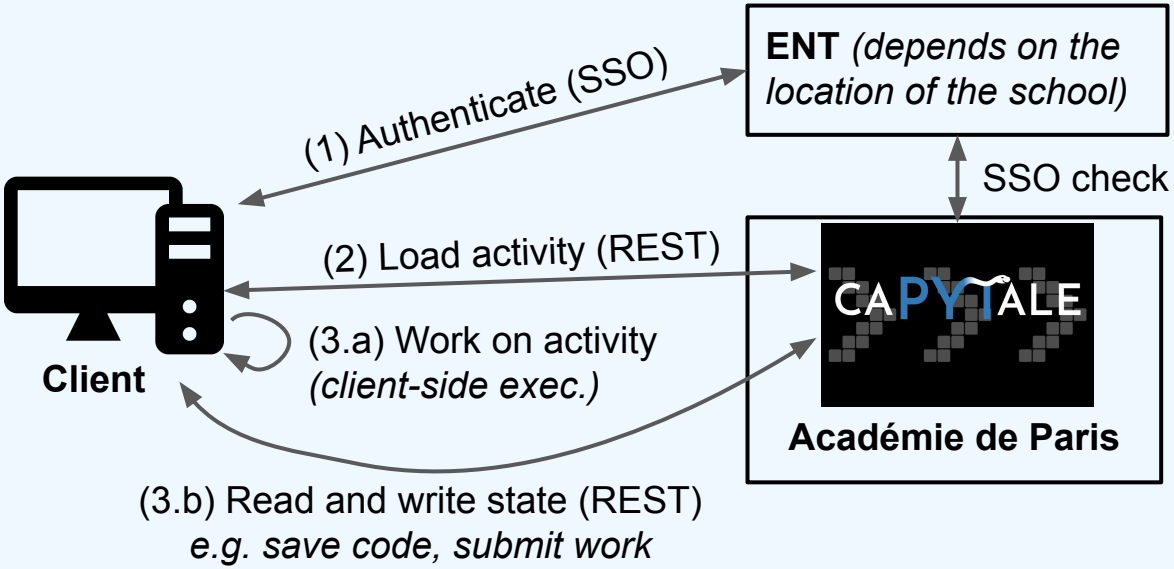
Client-side execution



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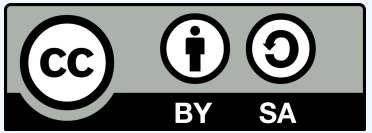
A few numbers

- 5,000 schools
- 100% French public high schools
- 210,000+ active users
- 1,100,000+ activities
- 80,000 notebooks/week
- 100,000 pyodide/week

Public library



Teachers can share their activities:

- 2,800 activities shared
- public activities cloned 37 times (on average)

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The future (Python side)

- We want to move to a web-worker
- We **need** to keep the modules used by teachers
  - turtle
  - p5 (port of p5.js)
  - matplotlib, graphviz, rcviz,
  - python tutor
  - …
- Move to a more modern notebook (v7?)

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A Creation and Sharing Platform for Programming Education

- **Secondary education** in mind
- A selection of **web apps** including **notebooks** and **Python console**
- **Client-side execution**: no big servers needed
- **Public library** to share activities (CC-BY-SA) - 2,800 public activities
- 1,100,000+ activities
- 210,000+ active users
- 80,000 notebooks/week
- 100,000 pyodide/week

Thank you for your attention