

# **Building WebOpt environment**

# How LLM can optimize web app?

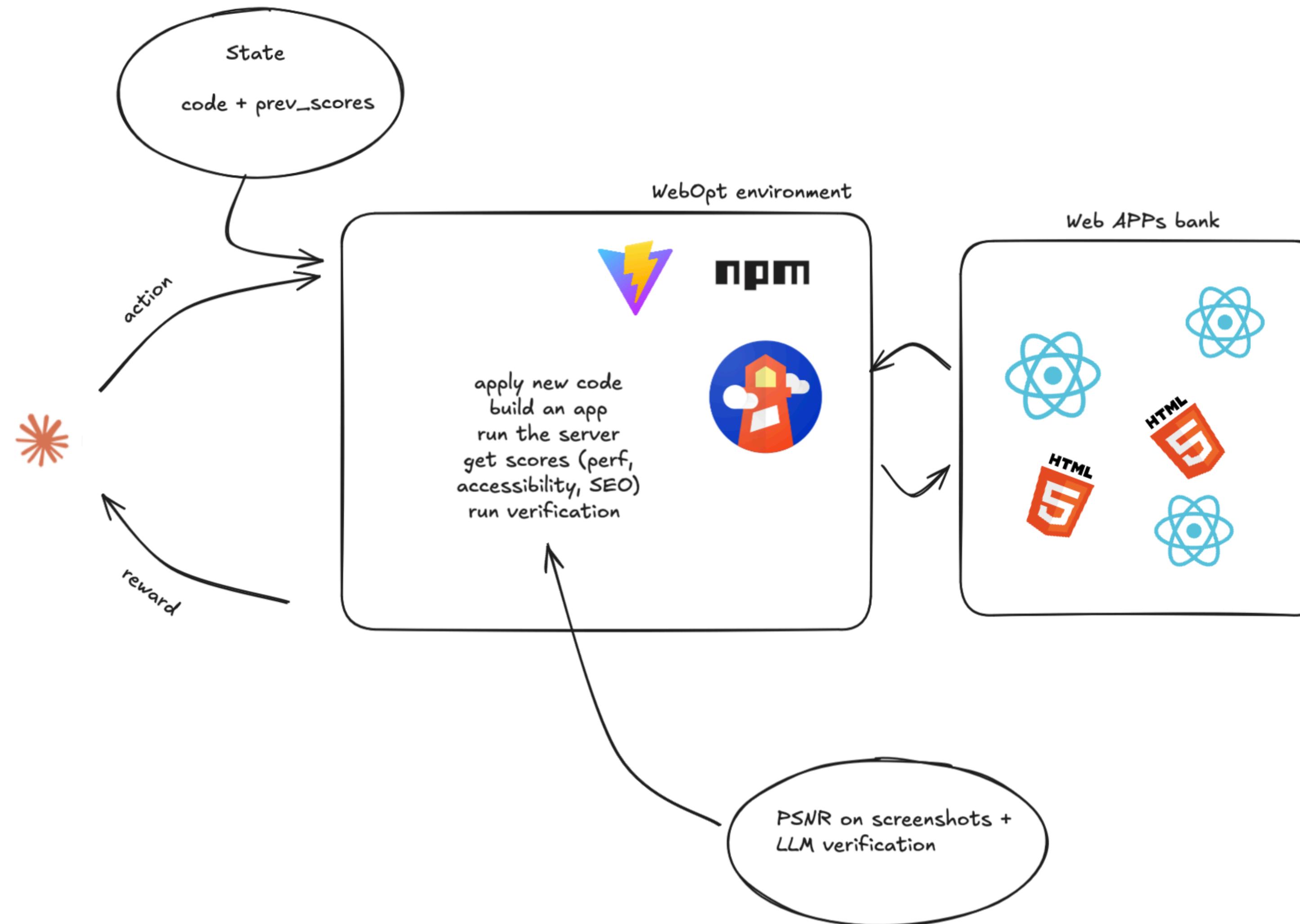
- Just by editing the code?
- ...But it's not enough

We've built the better environment  
for optimizing the web :)

# WebOpt env

- Based on openEnv standard
- Checks state of the art metrics for the web app
- Scores the whole pipeline, not just a code
- 30% vibecoded with 😎 

# How it works?



# Projects bank

- The environment contains a bank of web application
- You can add new applications to the bank to make your agents scale

# Rewards

- Average lighthouse metrics for perf, seo and accessibility
- Visual similarity evaluation (verification)
- Functional evaluation with Claude: (verification)
  - Create a specification of the original web app based on the screenshot
  - Score the new version of the app against the specification

# Why it's usefull?

- Works e2e. Modifications of the build configs will be scored as well
- Mixed reward function allows to adjust the reward based on web app structure, optimize for SEO or performance

# Claude baseline

```
Initial Reward: 0
Modifying file: /tmp/current_project/src/pages/Home.jsx
Reward: 0.6112568039520013
Step 1 completed.
=====

Modifying file: /tmp/current_project/src/pages/Home.css
Reward: 0.0
Step 2 completed.
=====

Modifying file: /tmp/current_project/src/pages/Home.jsx
Reward: -0.6276425293325595
Step 3 completed.
=====

Modifying file: /tmp/current_project/src/pages/Home.css
Reward: 0.0
Step 4 completed.
=====

Modifying file: /tmp/current_project/src/main.jsx
Reward: 0.2902594403503856
Step 5 completed.
=====
```

# Check this out

<https://github.com/alex-kharlamov/WebOptEnv>

