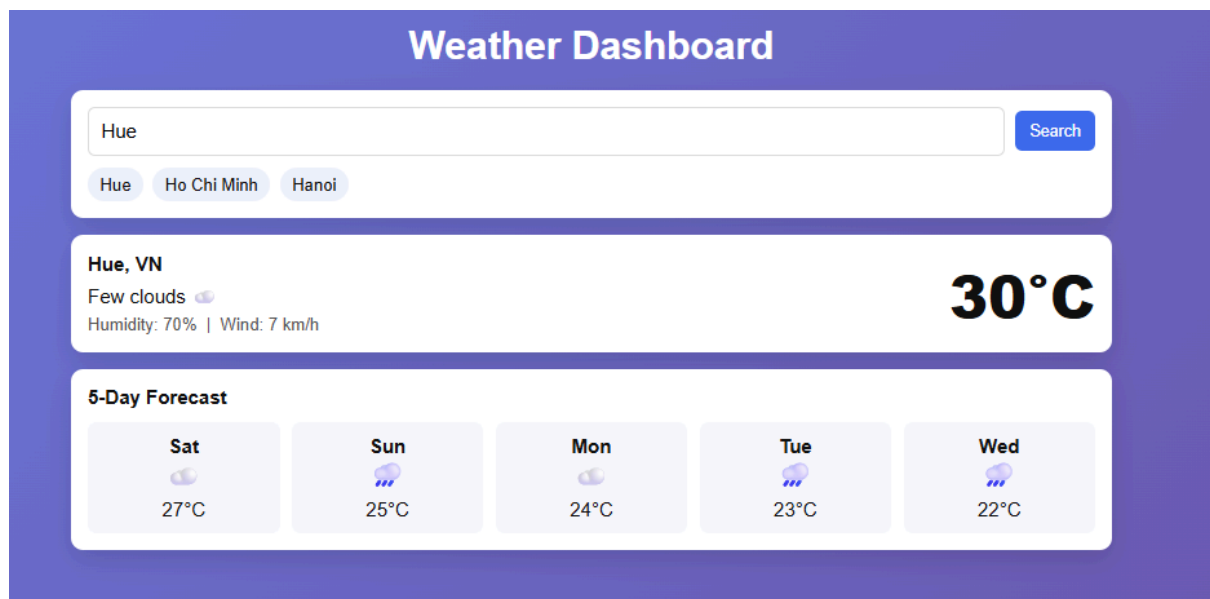# WEB APPLICATION ASSIGNMENT LAB 3

Student ID: **ITCSIU21160**
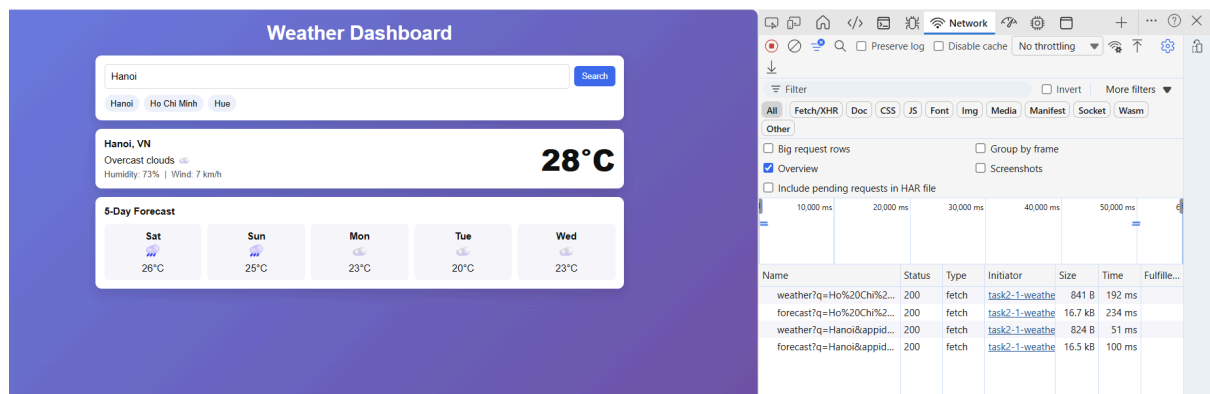*Student name:* **Ngô Thị Thương**
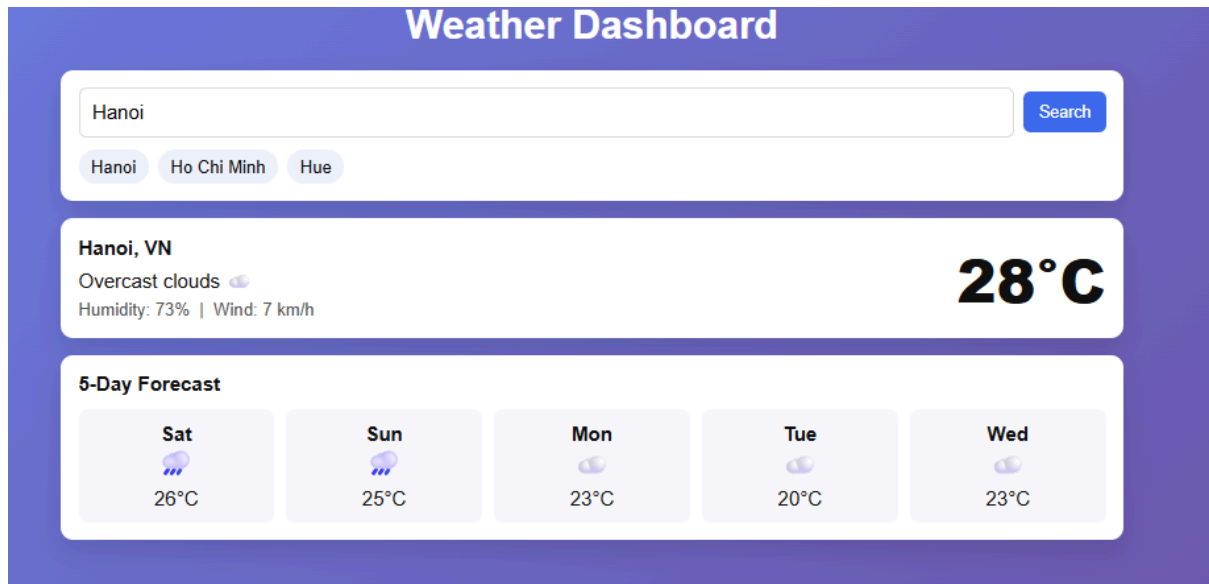
Task 2.1: Weather Dashboard

1. API integration works:

Network panel shows HTTP 200 responses from OpenWeatherMap for both current weather and forecast requests; responses contain JSON payloads with "weather" and "main"

2. Current weather display:

Current weather hiển thị: Hanoi, 28°C, Scattered clouds, Humidity 73%, Wind 7 km/h:

Code:

```
// hiển thị current weather (tên, mô tả, humidity, wind)
function displayCurrent(data){
  const name = `${data.name}${data.sys?.country ? ', ' + data.sys.country : ''}`;
  const descRaw = data.weather[0].description || '';
  const desc = descRaw.charAt(0).toUpperCase() + descRaw.slice(1); // viết hoa đầu
  const emoji = ICON[data.weather[0].main] || '🌥';
  const temp = Math.round(data.main.temp);
  const humidity = data.main.humidity;
  const windKmh = Math.round((data.wind?.speed || 0) * 3.6); // m/s -> km/h
  currentEl.innerHTML = `
    <div class="card">
      <div class="current-row">
        <div>
          <div class="city-info">${name}</div>
          <div style="margin-top:6px">${desc} ${emoji}</div>
          <div class="meta">Humidity: ${humidity}%  |  Wind: ${windKmh} km/h</div>
        </div>
        <div class="temp">${temp}°C</div>
      </div>
    </div>
  `;
}
```

3. 5-day forecast display:
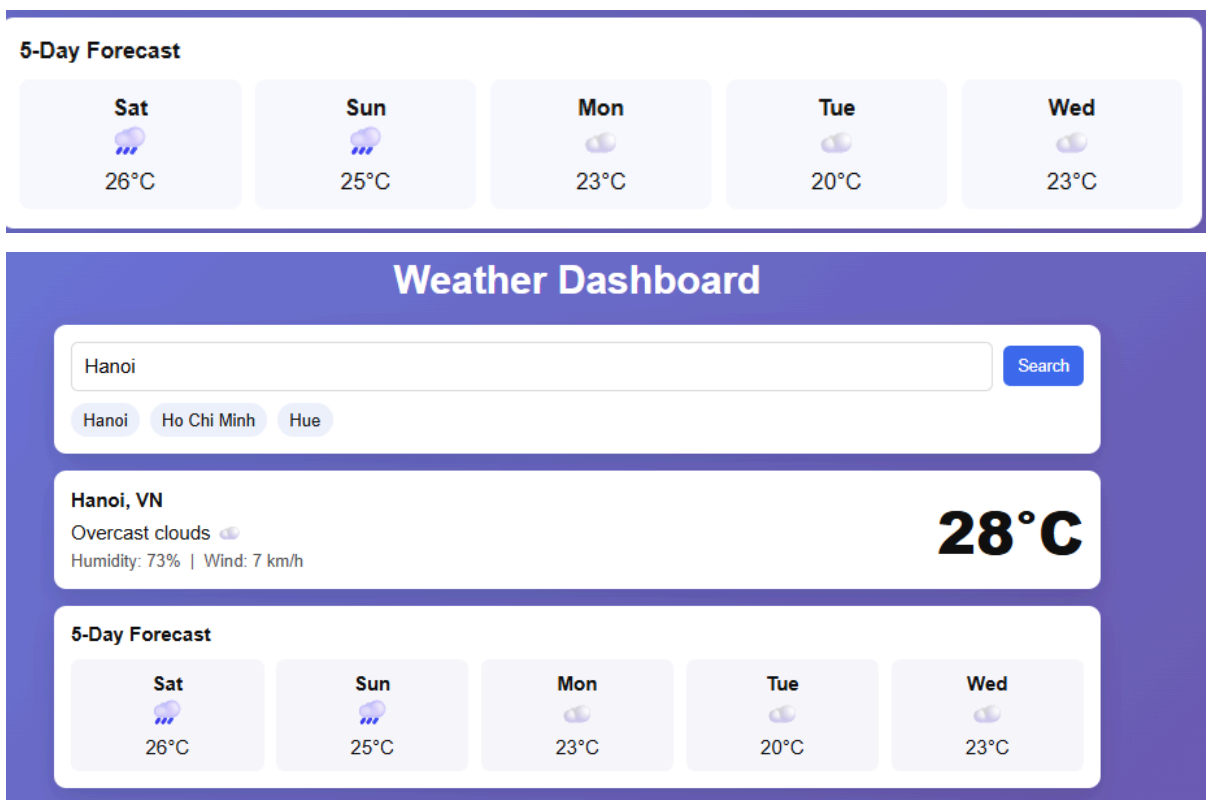
Code:

```javascript
// lọc forecast: chọn record có "12:00:00" mỗi ngày (1 entry/ngày)
function pickDaily(list){
  const map = {};
  for(const item of list){
    const [date, time] = item.dt_txt.split(' ');
    if(!map[date] || time === '12:00:00') map[date] = item;
  }
  return Object.keys(map).slice(0,5).map(d => map[d]);
}

// hiển thị forecast 5 ngày đơn giản
function displayForecast(data){
  const items = pickDaily(data.list || []);
  if(!items || items.length === 0){ forecastEl.innerHTML = ''; return; }
  let html = '<div class="card"><div style="font-weight:700;margin-bottom:8px">5-Day Forecast</div><div class="forc
  for(const it of items){
    const dt = new Date(it.dt * 1000);
    const day = dt.toLocaleDateString(undefined, {weekday:'short'});
    const t = Math.round(it.main.temp);
    const em = ICON[it.weather[0].main] || '🌤';
    html += `<div class="fitem"><div style="font-weight:700">${day}</div><div style="font-size:22px">${em}</div><di
  }
  html += '</div></div>';
  forecastEl.innerHTML = html;
}
```

4. Recent searches with localStorage

Recent searches lưu vào localStorage dưới key recent_weathers
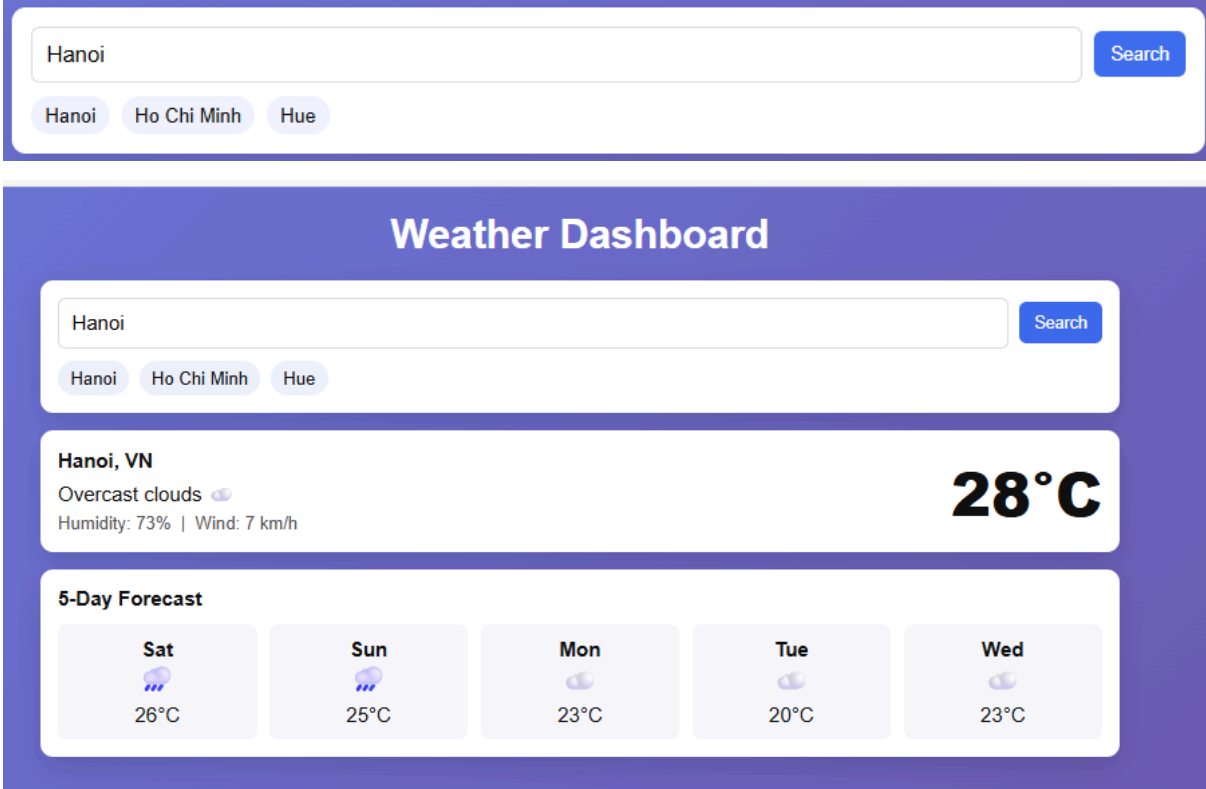
Name	Status	Type	Initiator	Size	Time	Fulfille...
weather?q=Hanoi&appid=...	200	fetch	task2-1-weather	824 B	227 ms	
forecast?q=Hanoi&appid=...	200	fetch	task2-1-weather	16.5 kB	280 ms	
weather?q=Ho%20Chi%20...	200	fetch	task2-1-weather	841 B	51 ms	
forecast?q=Ho%20Chi%20...	200	fetch	task2-1-weather	16.7 kB	95 ms	
weather?q=Ho%20Chi%20...	200	fetch	task2-1-weather	841 B	47 ms	
forecast?q=Ho%20Chi%20...	200	fetch	task2-1-weather	16.7 kB	101 ms	
weather?q=Hue&appid=55...	200	fetch	task2-1-weather	809 B	51 ms	
forecast?q=Hue&appid=55...	200	fetch	task2-1-weather	16.6 kB	95 ms	
weather?q=Hue&appid=55...	200	fetch	task2-1-weather	809 B	45 ms	
forecast?q=Hue&appid=55...	200	fetch	task2-1-weather	16.6 kB	99 ms	

```
const forecastEl = document.getElementById('forecast');

// load recent searches từ localStorage (max 5)
function loadRecent(){
  const arr = JSON.parse(localStorage.getItem('recent_weathers') || '[]');
  recentEl.innerHTML = arr.map(c => `<div class="chip" onclick="onRecent('${escapeHtml(c)}')">${c}</div>`).join('')
}

// helper escape cho onclick string
function escapeHtml(s){ return s.replace(/'/g,"\\'").replace(/"/g,'&quot;'); }

// lưu recent search mới, giữ unique, max 5
function saveRecent(city){
  if(!city) return;
  const key = 'recent_weathers';
  const arr = JSON.parse(localStorage.getItem(key) || '[]');
  const n = city.trim();
  const filtered = arr.filter(x => x.toLowerCase() !== n.toLowerCase());
  filtered.unshift(n);
  localStorage.setItem(key, JSON.stringify(filtered.slice(0,5)));
  loadRecent();
}
```

5. **Error handling**

Không tìm thấy thành phố
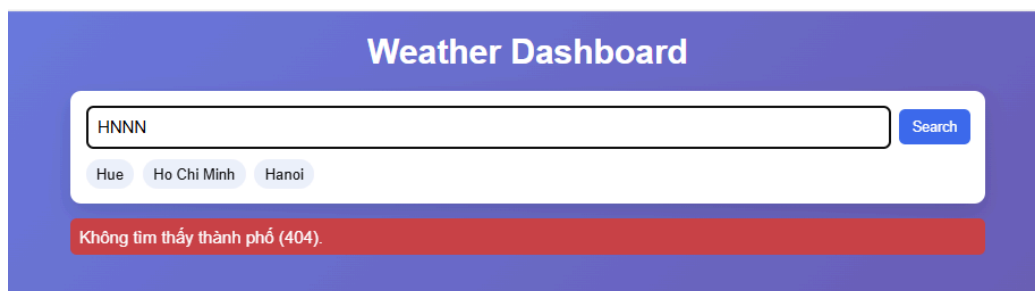
JSON:

6. Loading state:
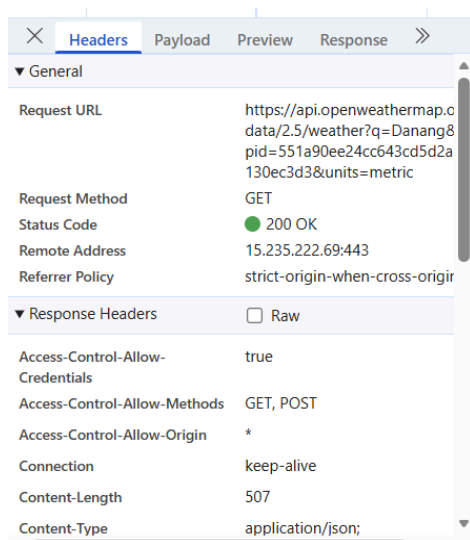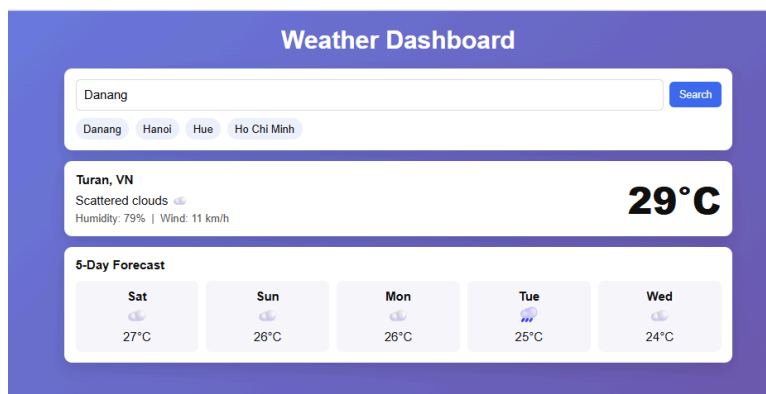

```javascript
// hàm tìm chính: gọi API, xử lý loading, lỗi, lưu recent
async function searchWeather(){
  const city = cityInput.value.trim();
  if(!city){ showError('Nhập tên thành phố.'); return; }
  clearError();
  currentEl.innerHTML = `<div class="loading">Loading current weather...</div>`;
  forecastEl.innerHTML = `<div class="loading">Loading forecast...</div>`;
  try {
    // gọi song song 2 API
    const [cur, fcast] = await Promise.all([fetchWeather(city), fetchForecast(city)]);
    displayCurrent(cur);
    displayForecast(fcast);
    saveRecent(city);
  } catch (err) {
    if(err && err.status === 404) showError('Không tìm thấy thành phố (404).');
    else if(err && err.status === 401) showError('API key không hợp lệ (401).');
    else if(err && err.status === 429) showError('Quá nhiều yêu cầu (rate limit).');
    else showError('Lỗi khi lấy dữ liệu thời tiết.');
    currentEl.innerHTML = '';
    forecastEl.innerHTML = '';
  }
}
```

Task 2.2: GitHub Repository Finder

🔍 **GitHub Repository Finder**
Search and explore GitHub repositories

Search repositories... (e.g. react)   Se

Sort by: stars ⌄

🔍 **GitHub Repository Finder**
Search and explore GitHub repositories

python| Search

Sort by: stars ⌄

donnemartin/system-design-primer
Learn how to design large-scale systems. Prep for the system design interview. Includes Anki flashcards.
⭐ 325.8k 🔱 53.1k 👤 donnemartin ◆ Python Updated: 08/11/2025

vinta/awesome-python
An opinionated list of awesome Python frameworks, libraries, software and resources.
⭐ 268.3k 🔱 26.7k 👤 vinta ◆ Python Updated: 08/11/2025

practical-tutorials/project-based-learning
Curated list of project-based tutorials
⭐ 249.2k 🔱 32.6k 👤 practical-tutorials ◆ — Updated: 08/11/2025

TheAlgorithms/Python
All Algorithms implemented in Python
⭐ 212.7k 🔱 49.2k 👤 TheAlgorithms ◆ Python Updated: 08/11/2025

tensorflow/tensorflow
An Open Source Machine Learning Framework for Everyone
⭐ 192.3k 🔱 75.0k 👤 tensorflow ◆ C++ Updated: 08/11/2025

CyC2018/CS-Notes
:books: 技术面试必备基础知识、Leetcode、计算机操作系统、计算机网络、系统设计
⭐ 182.8k 🔱 51.3k 👤 CyC2018 ◆ — Updated: 08/11/2025

ohmyzsh/ohmyzsh
😊 A delightful community-driven (with 2,400+ contributors) framework for managing your zsh configuration. Includes 300+ optional

1. **Search functionality works**

Search for "python" returns repository list; requests to GitHub Search API returned HTTP 200.

2. **Repository cards display correctly**

Each repository card shows full_name, description, stars, forks, owner, language and updated date.
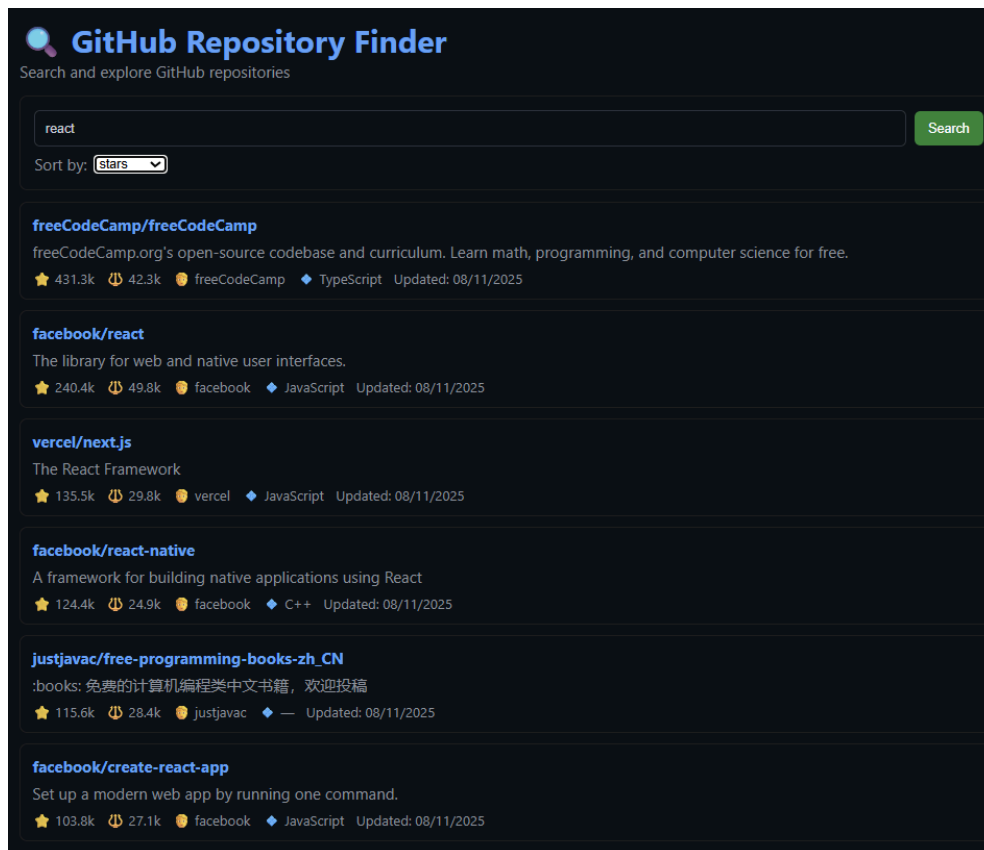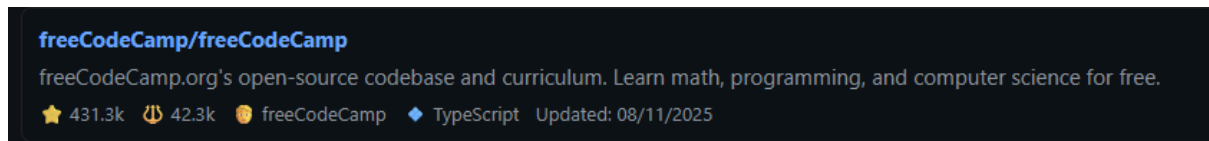
Code:

```
*/
function createRepoCard(repo){
  const desc = repo.description ? repo.description : '';
  const lang = repo.language ? repo.language : '—';
  return `
    <div class="repo">
      <div><a href="${repo.html_url}" target="_blank" rel="noopener">${repo.full_name}</a></div>
      <div class="repo-desc" style="color:#8b949e;margin-top:6px">${desc}</div>
      <div class="meta">
        <div>⭐ ${formatNumber(repo.stargazers_count)}</div>
        <div>🍴 ${formatNumber(repo.forks_count)}</div>
        <div>👤 ${repo.owner?.login || '—'}</div>
        <div class="language">◆ ${lang}</div>
        <div>Updated: ${new Date(repo.updated_at).toLocaleDateString()}</div>
      </div>
    </div>
  `;
}
```

```
function displayRepositories(items, append=false){
  if(!append) repoListEl.innerHTML = '';
  if(!items || items.length === 0){
    if(!append) repoListEl.innerHTML = `<div class="empty">No results</div>`;
    return;
  }
  const html = items.map(createRepoCard).join('');
  if(append) repoListEl.insertAdjacentHTML('beforeend', html);
  else repoListEl.innerHTML = html;
}
```

3. Sort functionality

Sort by "stars" triggers API request with sort=stars and shows highest-starred repos first
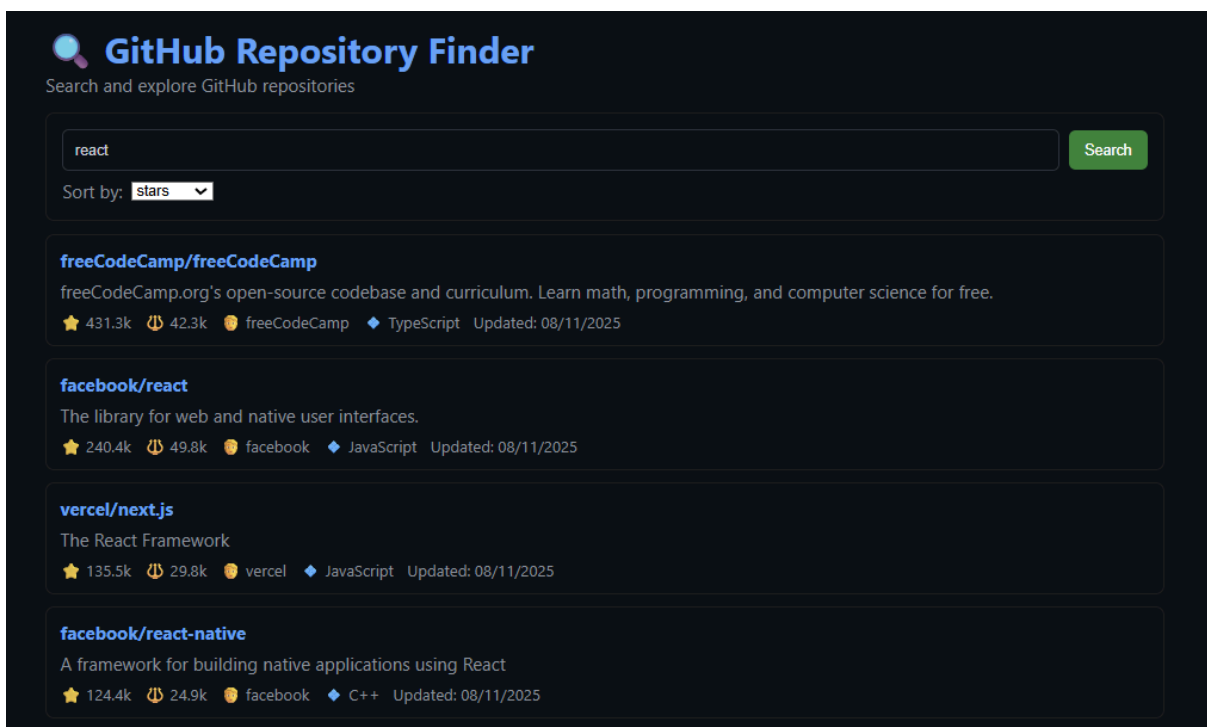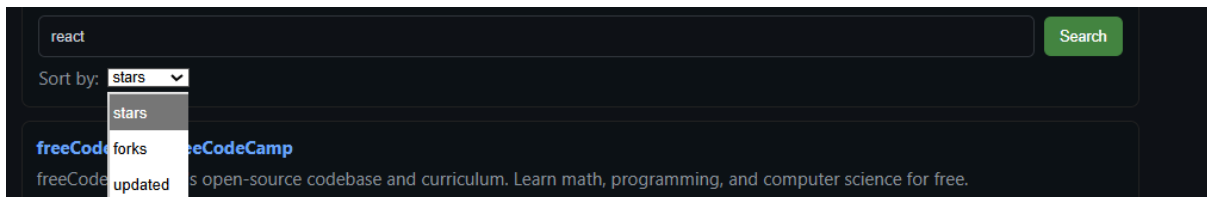
fork:

🔍 **GitHub Repository Finder**
Search and explore GitHub repositories

react | Search

Sort by: [forks ▼]

ChatGPTNextWeb/NextChat
✨ Light and Fast AI Assistant. Support: Web | iOS | MacOS | Android | Linux | Windows
⭐ 86.4k � 60.9k 👤 ChatGPTNextWeb ◆ TypeScript Updated: 08/11/2025

ant-design/ant-design
An enterprise-class UI design language and React UI library
⭐ 96.6k ⏱ 53.9k 👤 ant-design ◆ TypeScript Updated: 08/11/2025

facebook/react
The library for web and native user interfaces.
⭐ 240.4k ⏱ 49.8k 👤 facebook ◆ JavaScript Updated: 08/11/2025

freeCodeCamp/freeCodeCamp
freeCodeCamp.org's open-source codebase and curriculum. Learn math, programming, and computer science for free.
⭐ 431.3k ⏱ 42.3k 👤 freeCodeCamp ◆ TypeScript Updated: 08/11/2025

mui/material-ui
Material UI: Comprehensive React component library that implements Google's Material Design. Free forever.
⭐ 97.0k ⏱ 32.7k 👤 mui ◆ JavaScript Updated: 08/11/2025

update:

🔍 **GitHub Repository Finder**
Search and explore GitHub repositories

react | Search

Sort by: [updated ▼]

ismailhabeeb/mommenta
A modern social media platform built with React, Node.js, and MongoDB — featuring posts, comments, media uploads, and real-time engagement.
⭐ 0 ⏱ 0 👤 ismailhabeeb ◆ JavaScript Updated: 08/11/2025

NgocDuyAndroidVN/mo-portfolio-2025
🎨 Explore Mohamed Datt's creative portfolio, showcasing skills in design and development with a focus on innovative solutions and seamless user experiences.
⭐ 0 ⏱ 0 👤 NgocDuyAndroidVN ◆ TypeScript Updated: 08/11/2025

yasfei/interface-busca-next-react
Aplicação web para consumo da OMDb API, utilizando Next.js, Tailwind CSS, React e JavaScript.
⭐ 0 ⏱ 0 👤 yasfei ◆ JavaScript Updated: 08/11/2025

Mayankaggarwal8055/CodeSphere
CodeSphere is an modern full-stack web-based code editor built with React, Express, Prisma, and Code Mirror — featuring real-time editing, syntax highlighting, authentication, and a clean, developer-focused UI.
⭐ 0 ⏱ 0 👤 Mayankaggarwal8055 ◆ JavaScript Updated: 08/11/2025

Takao-Yamasaki/react-firebase-blog
⭐ 0 ⏱ 0 👤 Takao-Yamasaki ◆ CSS Updated: 08/11/2025

4. **Load more / pagination**

Clicked "Load more" loads the next page (page=2) and appends items to the list


```
async function loadMore(){
  if(!currentQuery) return;
  currentPage++;
  loadMoreContainer.innerHTML = `<div class="empty">Loading more...</div>`;
  try {
    const data = await searchRepositories(currentQuery, currentSort, currentPage, 10);
    displayRepositories(data.items || [], true);
    if(totalResults > currentPage * 10) loadMoreContainer.innerHTML = `<button onclick="loadMore()">Load more</butt
    else loadMoreContainer.innerHTML = '';
  } catch (err) {
    if(err.status === 403) showError('Rate limit exceeded (60 req/hour).');
    else showError('Lỗi khi truy vấn GitHub API.');
    loadMoreContainer.innerHTML = '';
  }
}
```
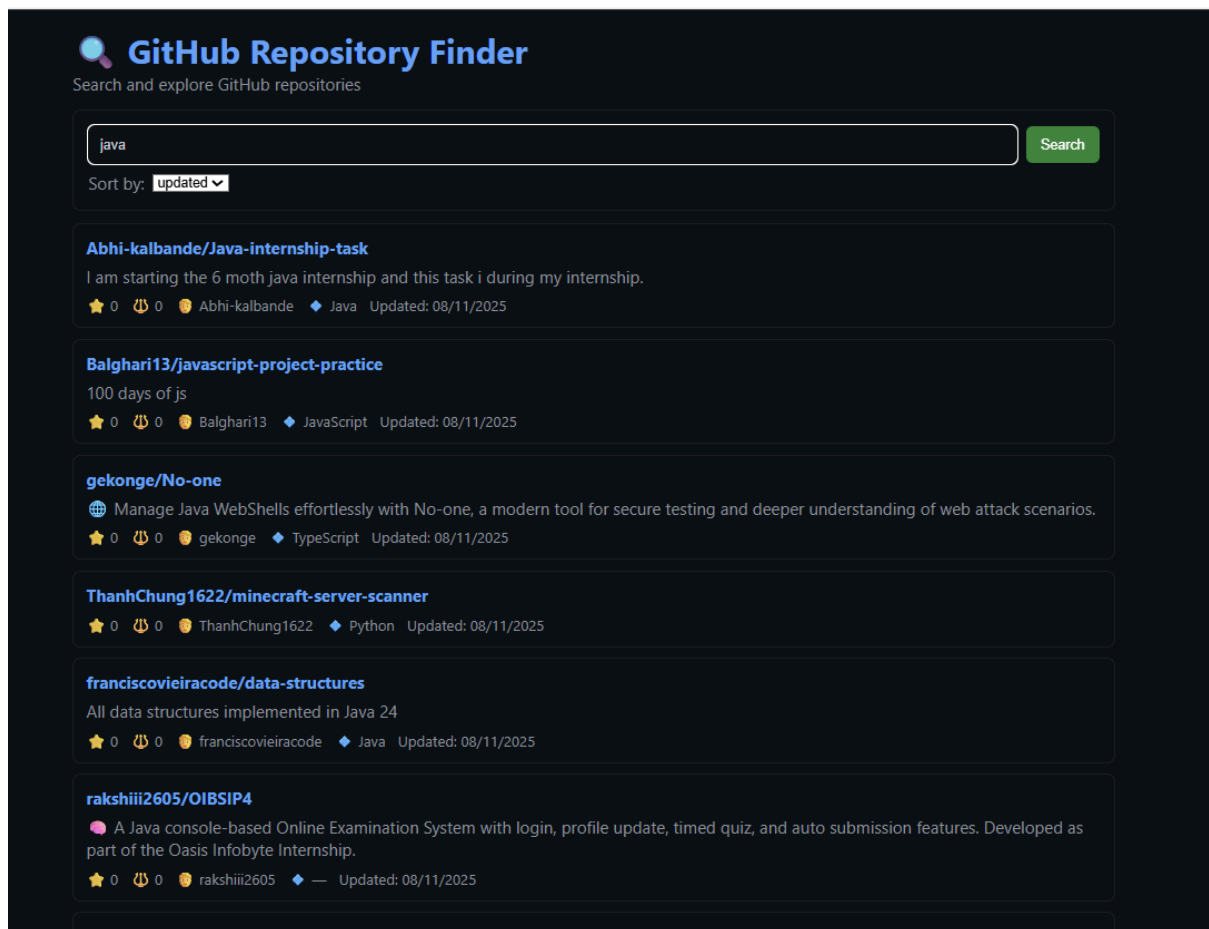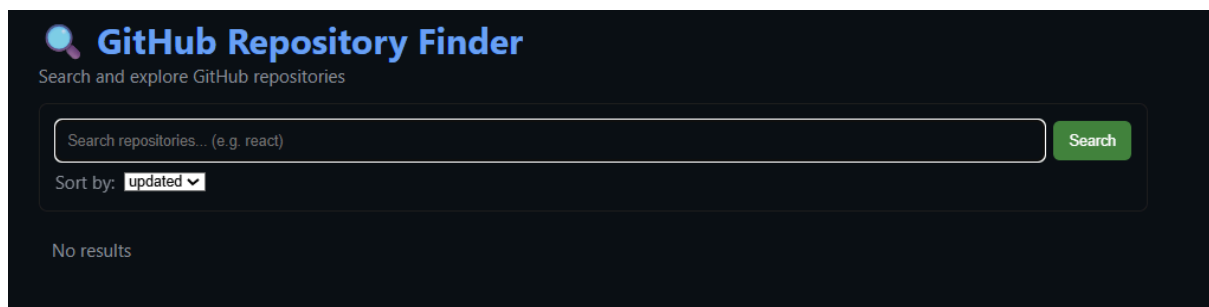
5. **<u>Error handling</u>**

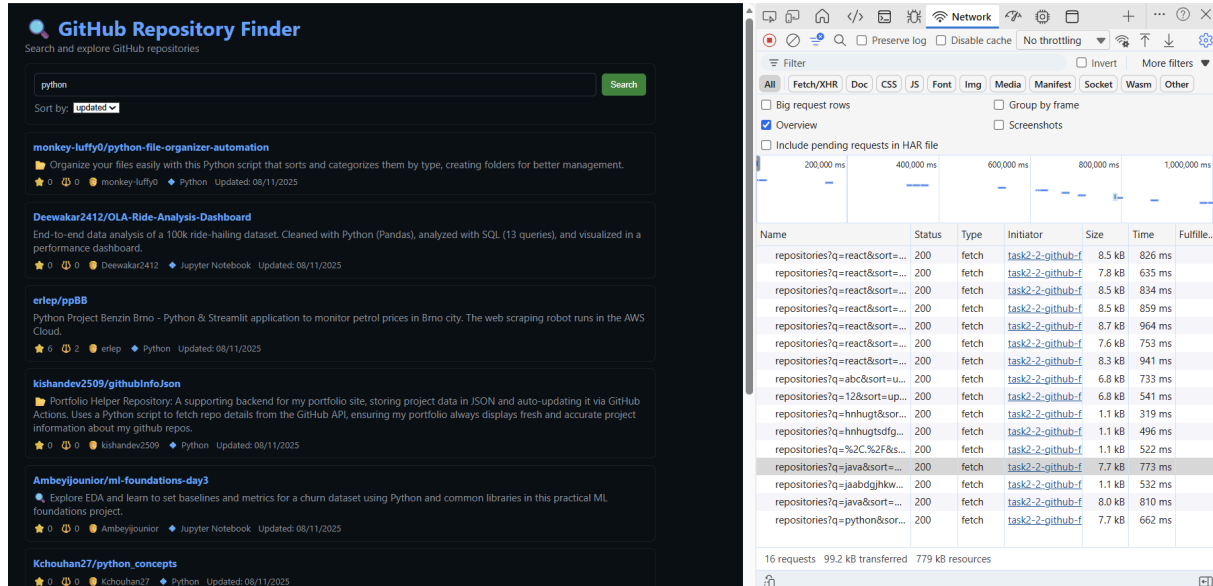App shows user-friendly error messages for no results
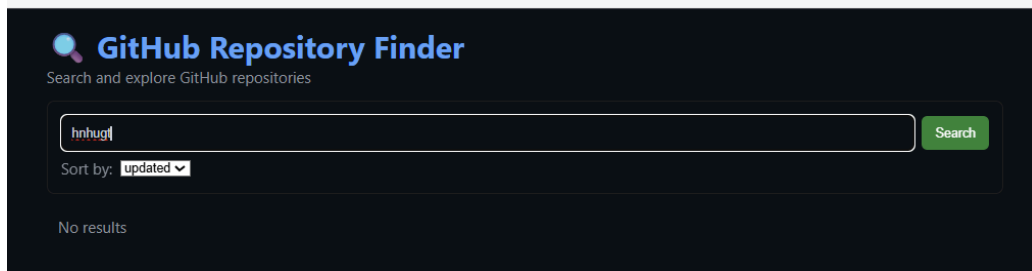
6. **<u>Clean UI</u>**

UI is clean and readable with dark theme and consistent card layout.

7. Extra evidence — API proof

Name	Status	Type	Initiator	Size	Time	Fulfille...
repositories?q=react&sort=...	200	fetch	task2-2-github-f	8.5 kB	826 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	7.8 kB	635 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	8.5 kB	834 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	8.5 kB	859 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	8.7 kB	964 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	7.6 kB	753 ms	
repositories?q=react&sort=...	200	fetch	task2-2-github-f	8.3 kB	941 ms	
repositories?q=abc&sort=u...	200	fetch	task2-2-github-f	6.8 kB	733 ms	
repositories?q=12&sort=up...	200	fetch	task2-2-github-f	6.8 kB	541 ms	
repositories?q=hnhugt&sor...	200	fetch	task2-2-github-f	1.1 kB	319 ms	
repositories?q=hnhugtsdfg...	200	fetch	task2-2-github-f	1.1 kB	496 ms	
repositories?q=%2C.%2F&s...	200	fetch	task2-2-github-f	1.1 kB	522 ms	
repositories?q=java&sort=...	200	fetch	task2-2-github-f	7.7 kB	773 ms	
repositories?q=jaabdgjhkw...	200	fetch	task2-2-github-f	1.1 kB	532 ms	
repositories?q=java&sort=...	200	fetch	task2-2-github-f	8.0 kB	810 ms	
repositories?q=python&sor...	200	fetch	task2-2-github-f	7.7 kB	662 ms	