Show and Tell

ESRI ArcGISMap JS and Vue

🎯 Purposes

To share my recent experience in developing a GIS web application

- 🎯 Introduce how and why to use `Vue` with `ESRI ArcGIS MapSDK`
- 🎯 Introduce `MVVM` development pattern and its pros and cons

🙇 Disclaimer

🙇 *me no GIS expert.*

🙇 *me no web developer.*

👤 *Chris Lam* 🕐 *2023*

don't shoot me 🙏

🛠️ Used tools

Vite ⚡ Vue2 ▼ Vuetify2 ▼ Pinia 🍍

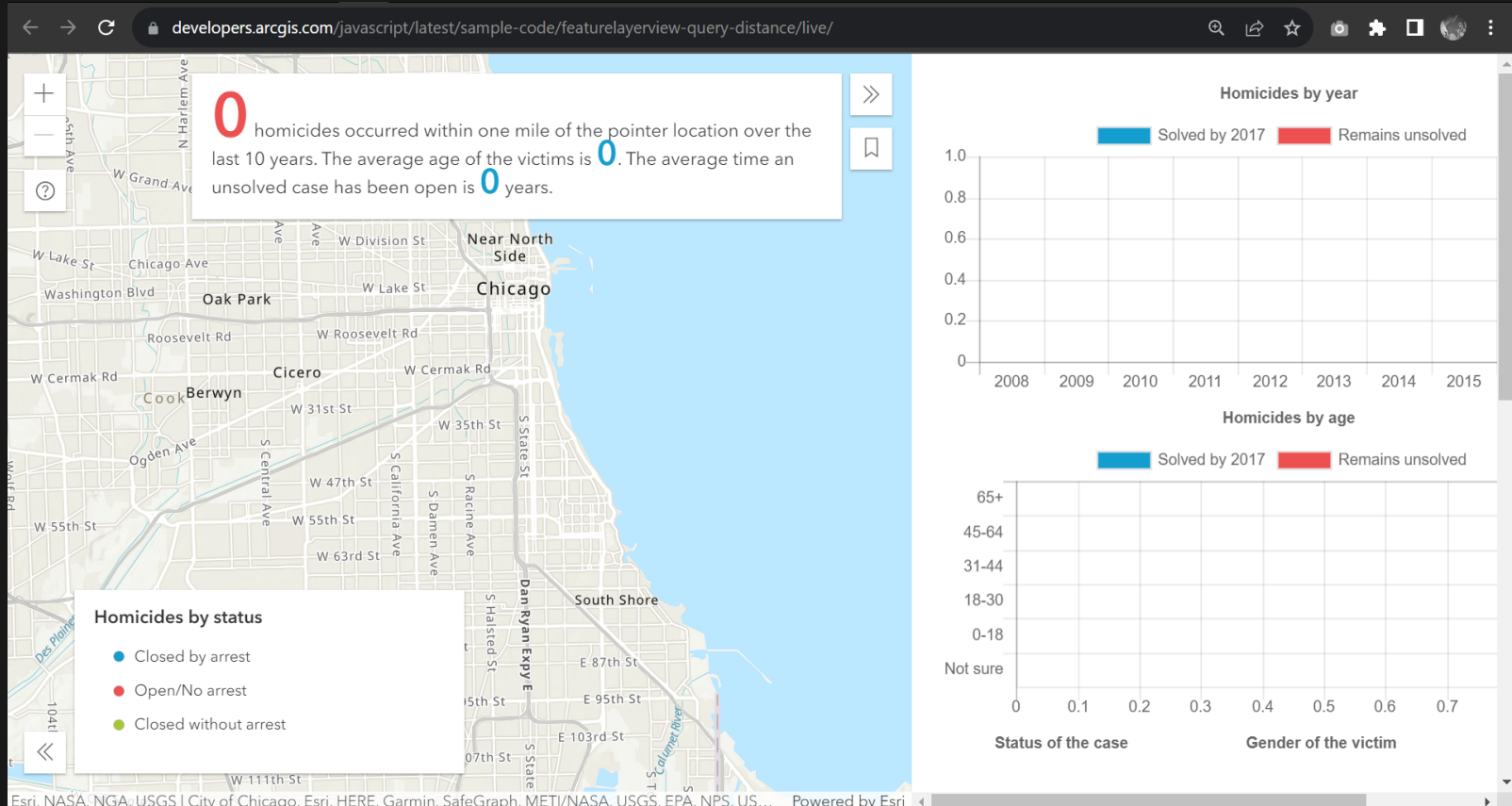ESRI ArcGIS Maps SDK for JavaScript

What is 🔷

- 🛠️ a tool to build GIS Web Application 🗺️

  - ▪ built by *esri*

- **it costs** 💰

  - ▪ 🔓 needs an API key to use.
  - ▪ 💸 UoM paid for it, for normal usage.

similar opensource (free) projects

- Leaflet *Leaflet*
- OpenLayer

🤔 # How does it look like?

🤔 Why Esri/EsriJS

- Industrial standard
    - defra, met office, ons ...etc
- Ready made Widgets
- Event based development at core

🛑 enough background.

🤔 **Why so many tools?**

⚠️ **Native EsriJS Problems**

- **VanillaJS** 😵
- **AMD** *i.e.* `require()` **method** 😵

- 😢 hard to maintain
- 😢 hard to use 3rd parties libraries
- 😢 hard to add custom widget
- 😢 hard to manage state at runtime

see sample code

💡 use Framework Vite ⚡ + Vue2 🔺 to handle the maintance, customization, and libraries issues

1. ⚡ uses ESM to import libraries/packages or handle .env variables / build process.

2. 🔷 allows Component-based development

3. 🔷 allows easy development in custom widget

⚠️ State management Problem
In Vue, two independent components cannot directly communicate

how native vue component communicate to each other?

1. `emit` (child -> parent)
2. `props` (parent -> child)
3. event bus (global emitter/listener), normally 3rd party libraries `mitt`

- 1 or 2 very easy to make your code becomes 🫙 in when you use it for state management
- 3 is better but it is not too vue.

💡 use Pinia 🍍 to handle the component state.

see demo

V + 🍍 ~ MVVM

M **V** VM: vue component i.e. `<template>`
`</template>`

MV **VM**: pinia store

MVVM pros:

- clear sepeartion in gui and logic
    - easier to collabrate
    - easier to mantain/debug
- cross-platform ready

    - Quasar Framework

    - Electron

Thank you.