

### **macOS Hardware Monitor**

#### **Description:**

A Rust Backend GUI application that displays data pertaining to System Information, while also providing real time data on CPU utilization per core, CPU frequency, Ram Usage, CPU die temperatures, and available disk space on the disk drives present in the system. The application also displays real-time data in the form of graphs pertaining to the average CPU utilization and Ram Usage.

#### **Crates:**

##### **EFRAME:**

- Used to create the GUI interface.

##### **EGUI:**

- Used to create the GUI interface.

##### **EGUI\_PLOT:**

- Used to plot data points on the line graphs.
  - Specifically, for:
    - CPU-Utilization
    - RAM-Usage
    - CPU TDIE Temps

##### **SYSINFO:**

- Used to retrieve necessary data about the hardware.

#### **Main.rs:**

##### **Struct used:**

- **MyApp:**
  - Contains the variable declarations to display all data necessary to be shown on the GUI interface.
  - Also implements eframe into the struct MyApp which features an update function which updates all the necessary data info whenever the GUI is being interacted with. This includes information such as CPU usage, ram info, sensor/temp info, and disk usage info.

**Functions used to retrieve data:**

Each of these functions essentially performs similar tasks as visible in the actual code, but they essentially return type Strings which is what the data is converted to, to be displayed on the GUI. screen.

- **Sys\_info():**
  - Responsible for displaying system information such as the System Name, System Kernel Version, System OS Version, and System Host Name.
- **Cpu\_usage:**
  - Responsible for showing the total usage of each CPU in terms of a percentage. It also provides the CPU frequency per core and produces an average usage percentage of all the cores combined. This function also features code that keeps track of data points to be plotted onto a line graph for average CPU usage.
- **Ram\_info:**
  - Responsible for displaying the amount of RAM being used within the system itself and total amount of RAM that is available to be used. This function also features code that updates the line graph with data points for ram usage in terms of a percentage-based number.
- **Sensor\_info:**
  - Responsible for displaying temps related to parts of the CPU die itself.
- **Disk\_information**
  - Responsible for displaying how much storage space is available within each of the drives in the system.

**Link to Video:**

- <https://youtu.be/RgpaR-c8Dj8>