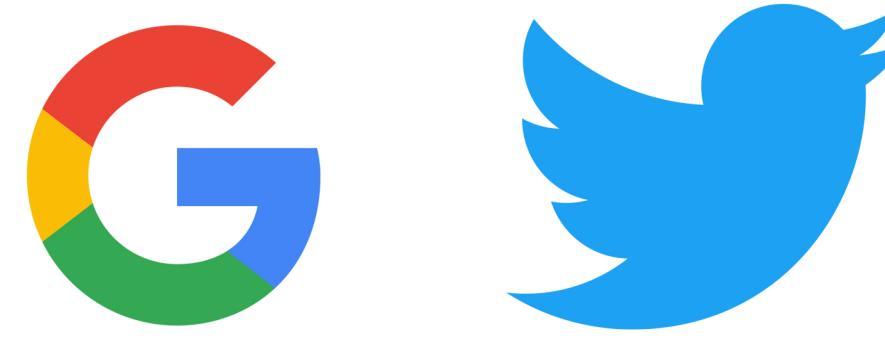


Internet of Things (IoT) Information Display

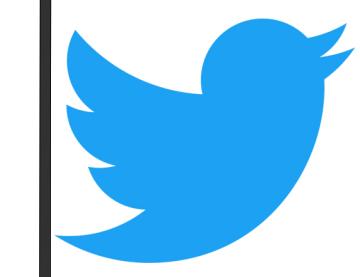
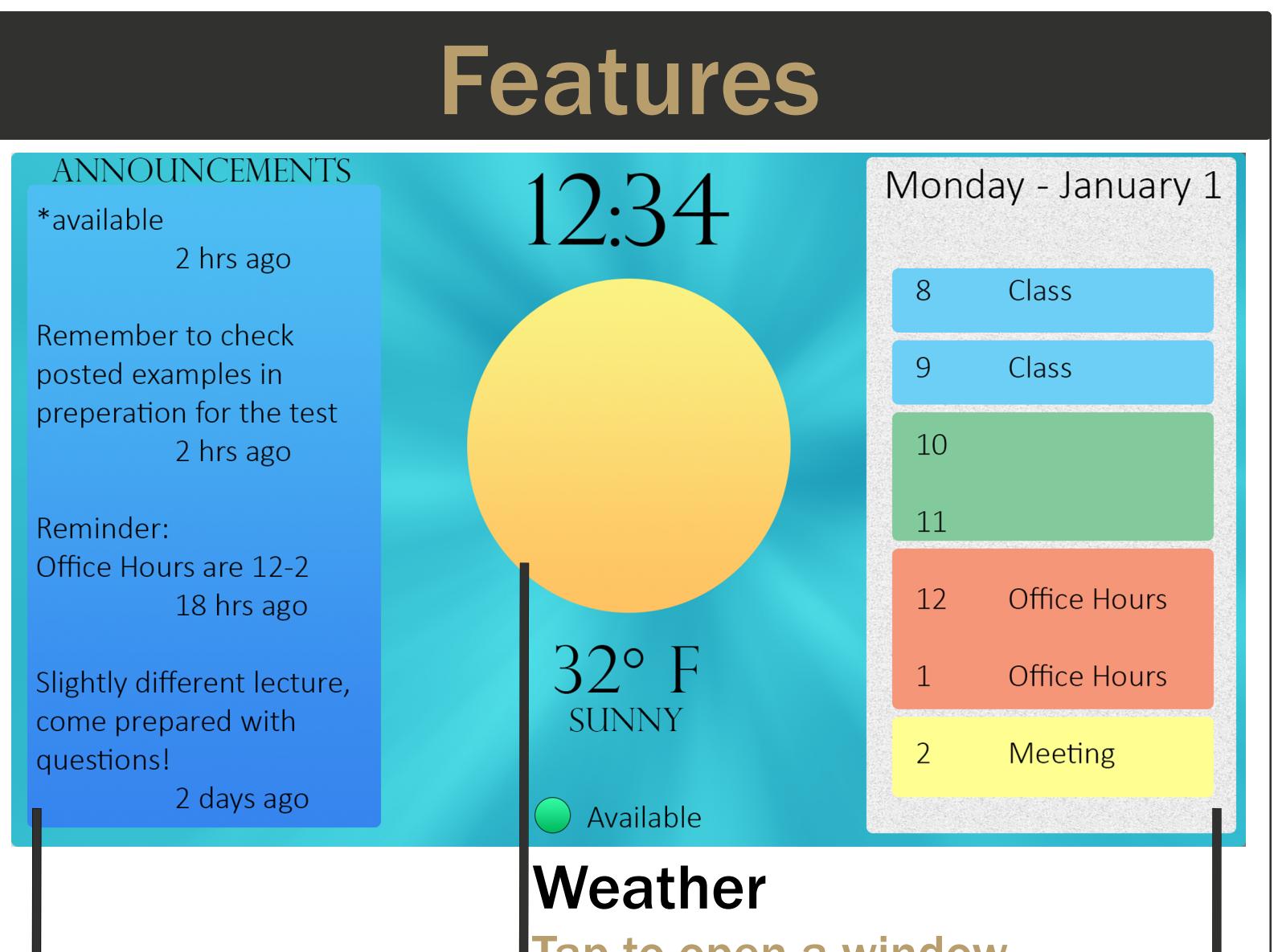


Benjamin Daszkiewicz & Jacob Nading

Advised by: Dr. Malinowski

Concept

- Touch interaction
- Internet connectivity
- Professor's office hours via Google Calendar
- Class announcements via Twitter
- Advertisements
- Weather conditions



Twitter Announcements
Tap to open a window full of more tweets



Google Calendar
Tap to open a window of a weekly calendar displaying future Google Calendar events

Components

Hardware

- Raspberry Pi model 3B
- 13" multi-touch LCD monitor

Software

- Debian Rasbian Stretch OS
- Python 3.6
- appJar and Tk GUI module
- Google calendar API
- Twitter API
- OpenWeatherMap.org API
- Sunrise-Sunset.org API

Project Management

- GitHub version control
- Trello
- MS OneNote project notes

Updates

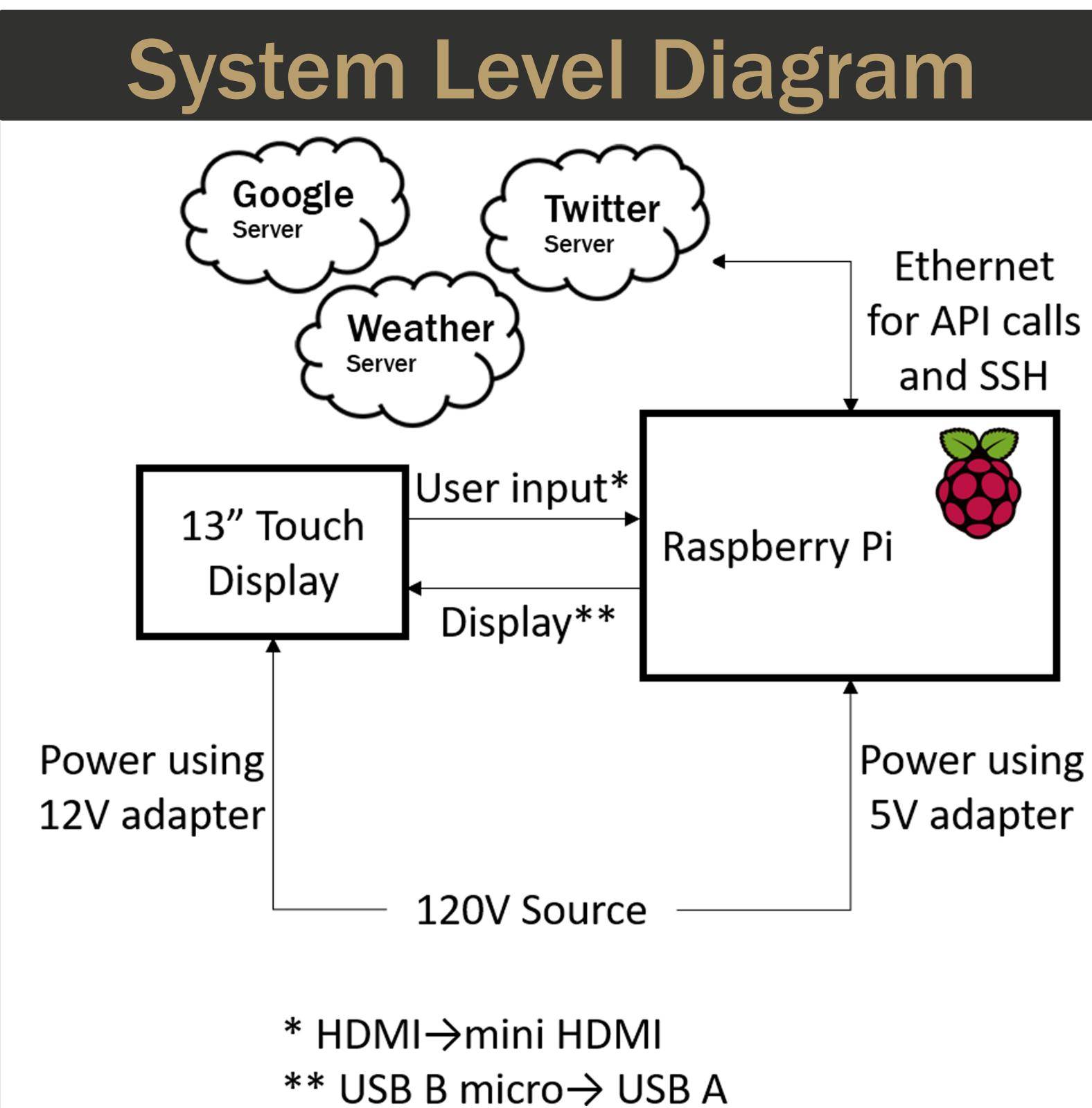
Procedure

- SSH access to RPi
- Project repository on GitHub
- Can be pulled to ~/Desktop/IoTdisplay

Updated Content

- Weather, announcements, dynamic display, and calendar update automatically
- Advertisements require image files in project directory to be changed

System Level Diagram



Event-Driven

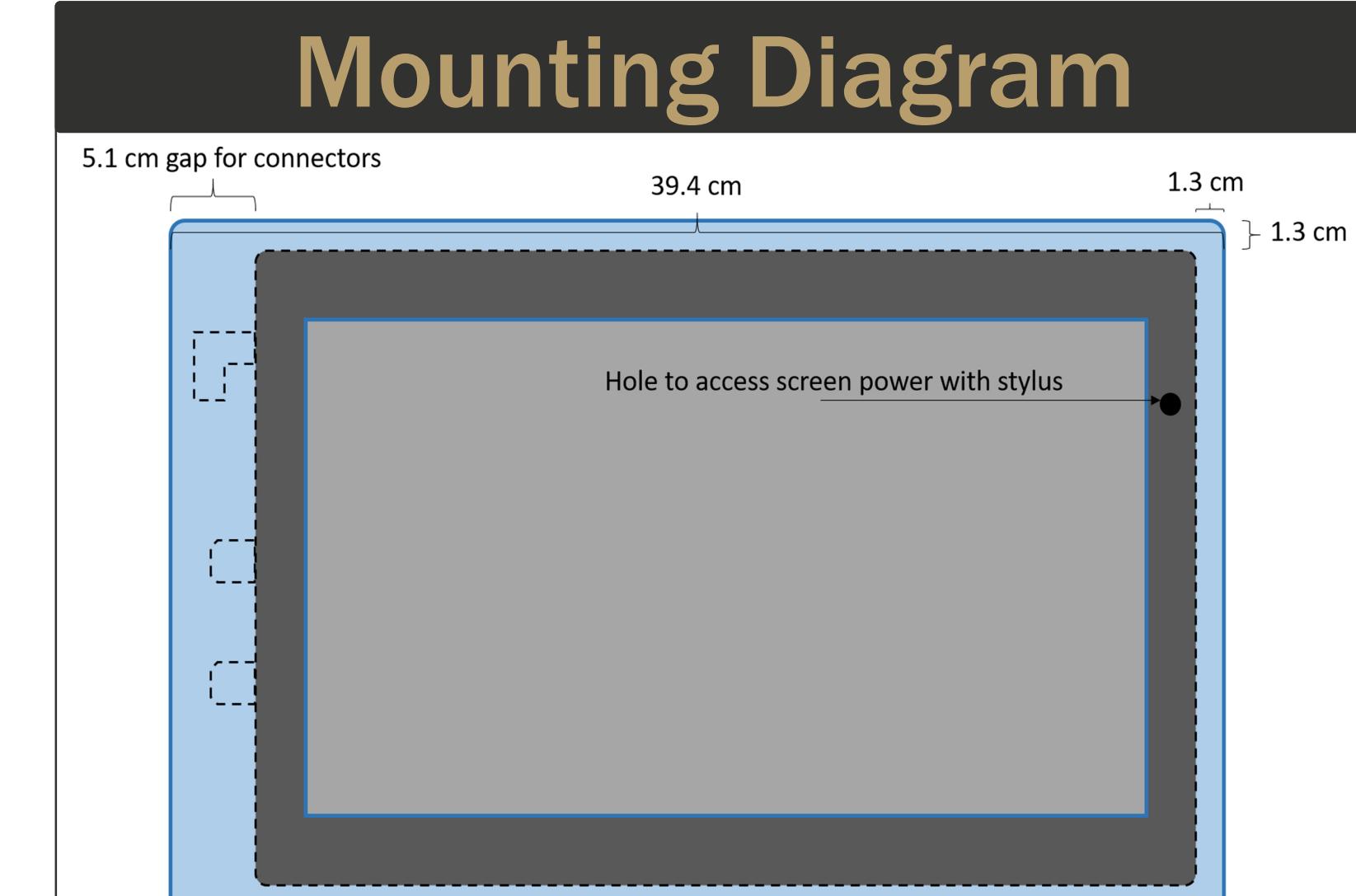
Why event-driven threads?

- Advertisement Changes
- Timeouts

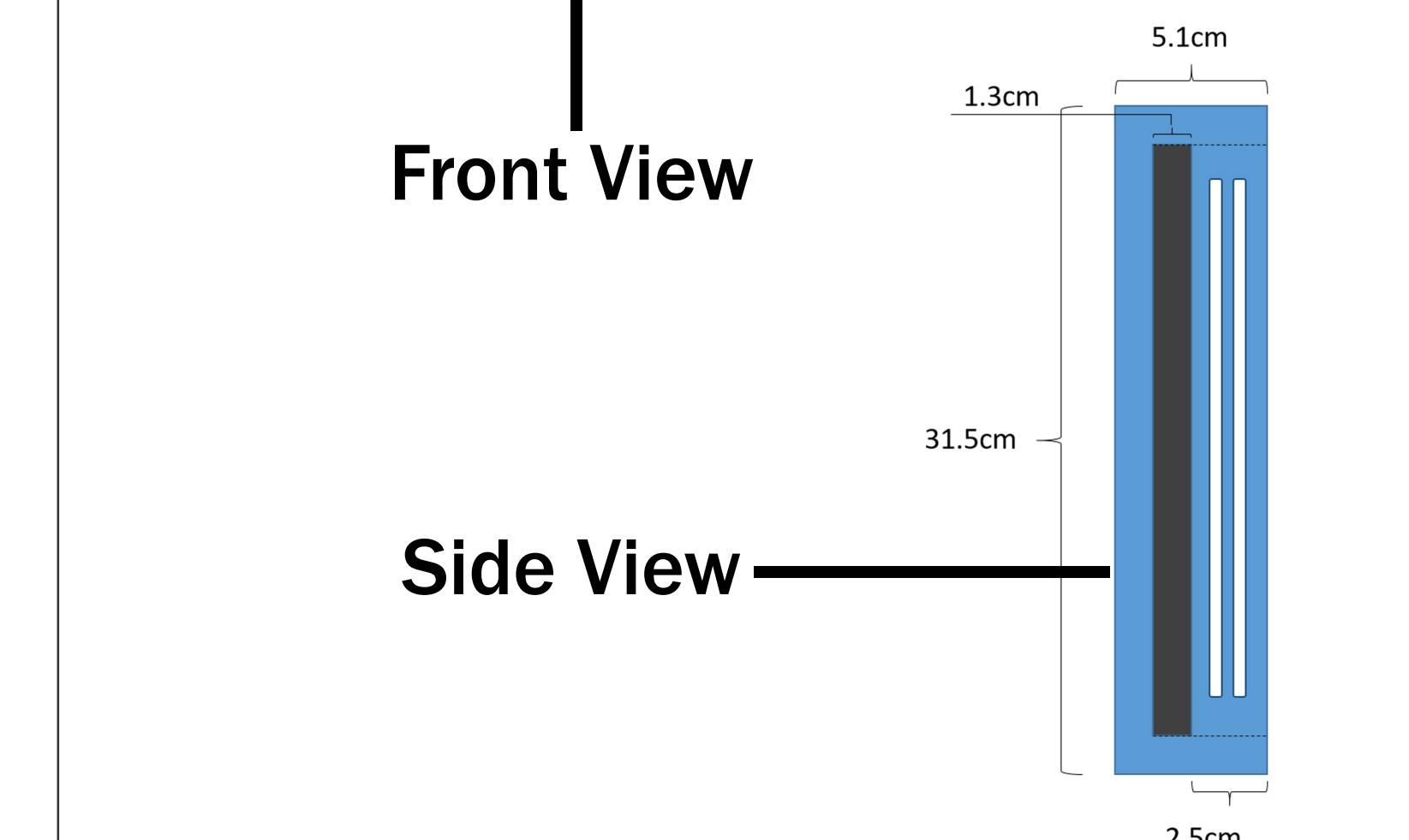
appJar thread handling

- .registerEvent(function)
- .setPollTime(milliseconds)
- .thread(function)
- .queueFunction(function)

GUI Process Diagram



Front View



Side View

