# Blue Sheep

## A Mobile Data Collection Application

## Final Project Report


**CSU San Marcos**
**Fall 2017 CS 441**
**Software Engineering**

**blueHat Technologies**
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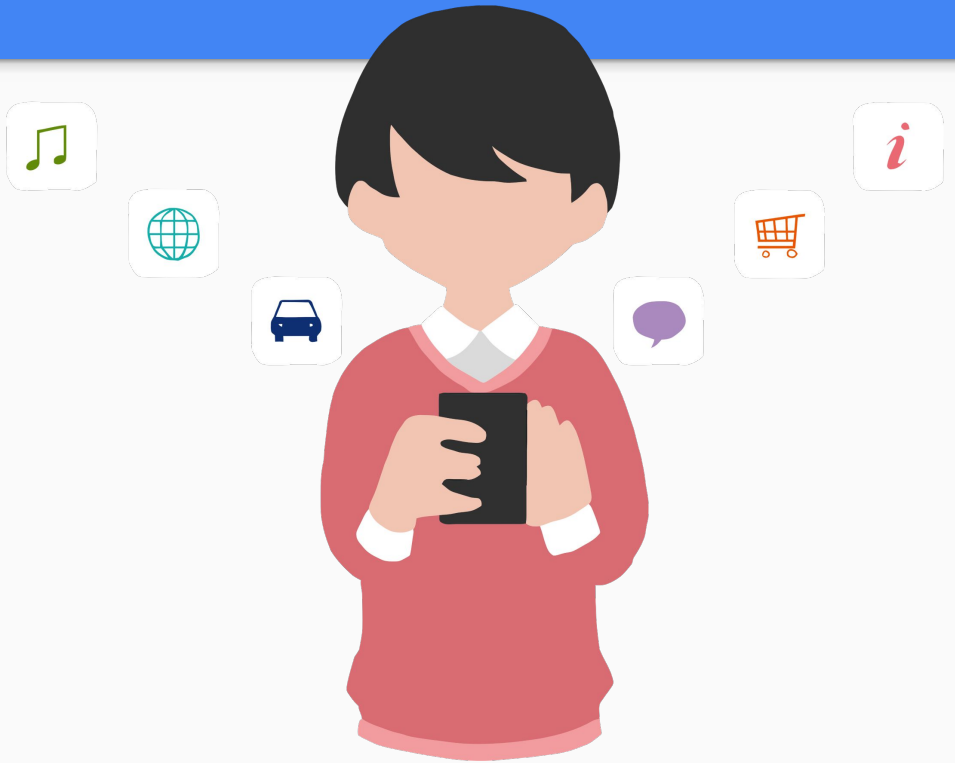
# PROJECT DESCRIPTION

Modern mobile devices of today are capable of collecting huge amounts of data through their sensors and software.
A problem that is particularly present amongst users is that a maj ority will readily grant
any application, program, or piece of software full access and per mission to their personal devices,.

By doing so, seemingly benign applications are capable of keeping track of a user's location, movements, activities, and preferences to name just a few categories.

We argue that most users of such mobile devices are entirely unaware that even just through regular use, may allow their phones to collect huge amounts of unique data about their day to day lives.



# USER REQUIREMENTS

Android dunning 6.0 or later

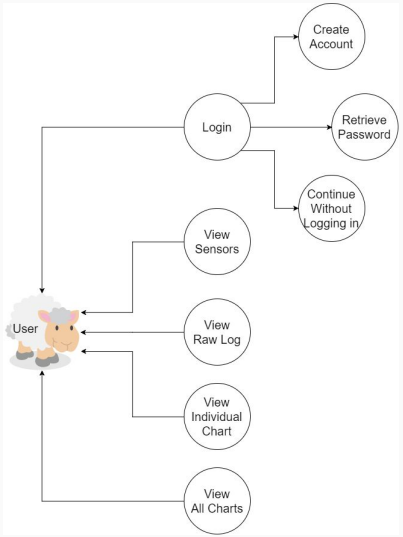
iPhone running iOS 8.0 or later

Internet Connection

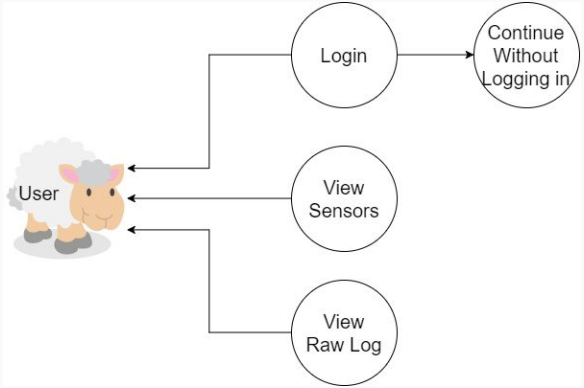
Launch application at least once

# MOST COMMON USE CASE DIAGRAMS

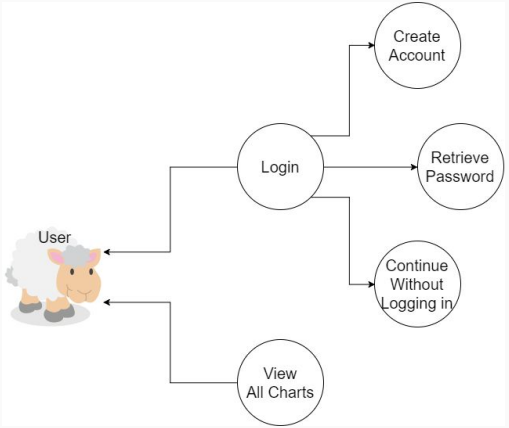
## Normal Operation




## Offline Mode




## Sensors Disabled

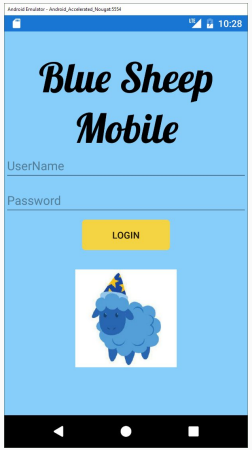


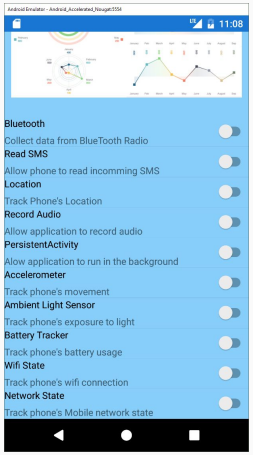
# IMPLEMENTATION MILESTONES

1. Xamarin Studio (C#)
2. Detecting Specific Sensors
3. Web Server (AWS)
4. Log File Creation
5. File Parsing
6. Visualizations
7. File Transfer Protocol (SFTP, Rebex)
8. Web Page


# Blue Sheep Mobile Development Cycle

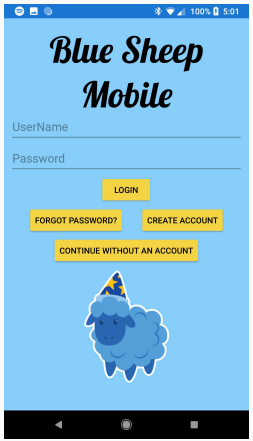
## Blue Sheep Mobile 1.0



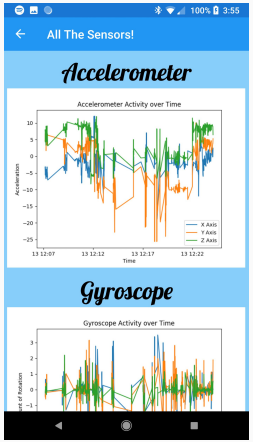





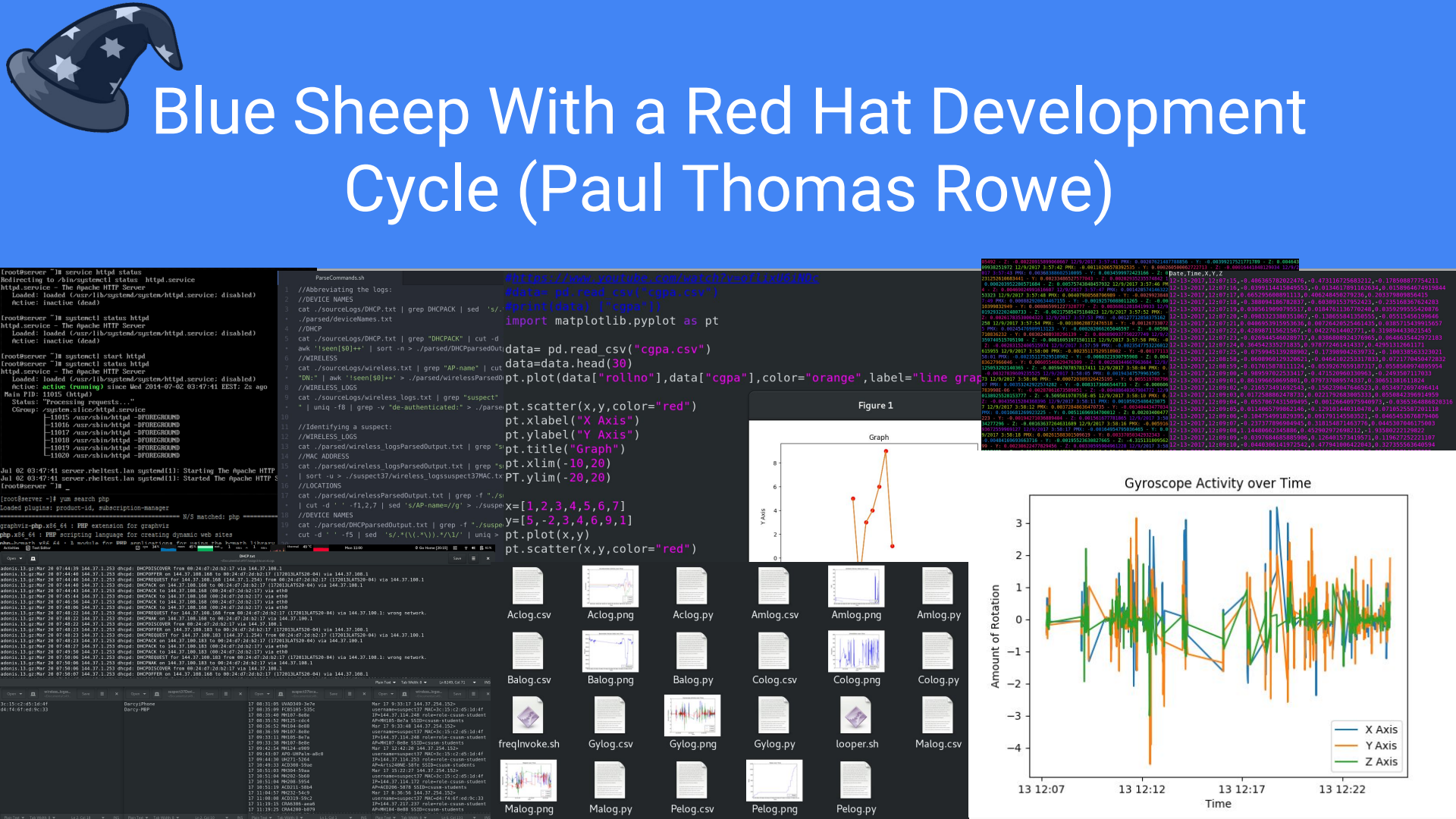
## Blue Sheep Mobile 2.0



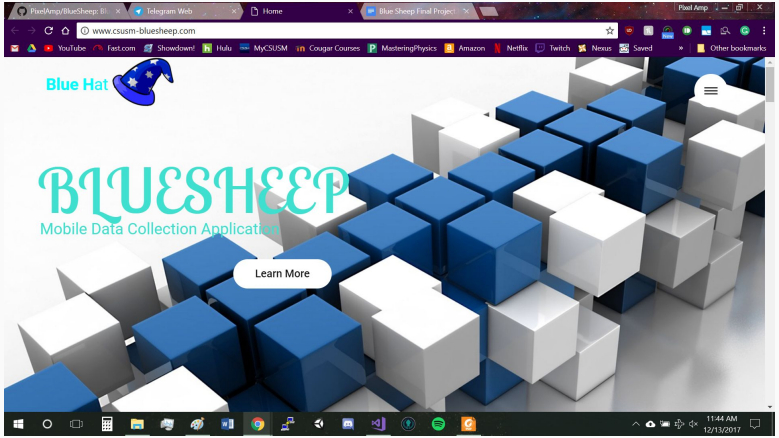


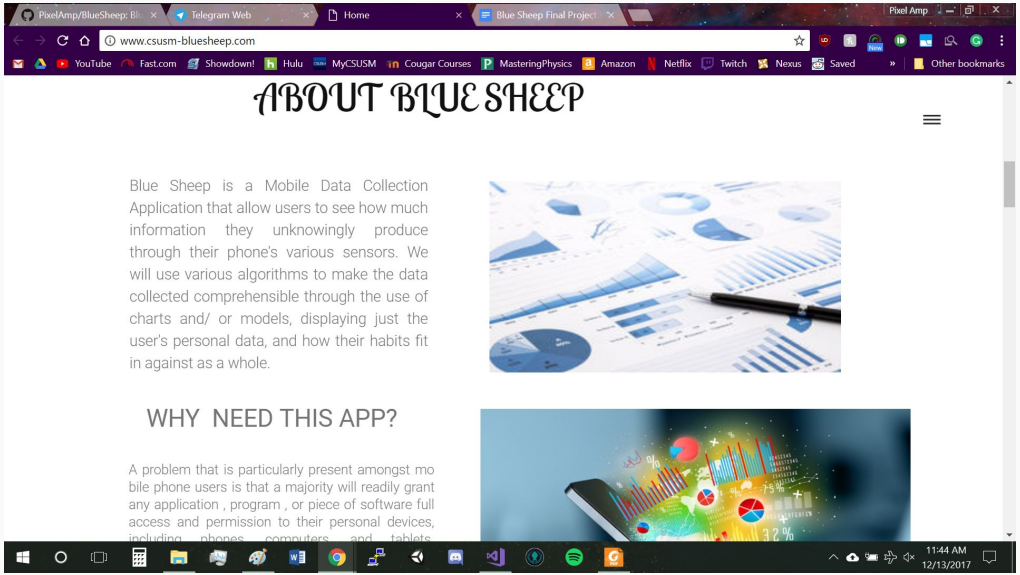


# Blue Sheep With a Red Hat Development Cycle (Paul Thomas Rowe)



# www.csusm-bluesheep.com



# Problems and Setbacks

- What mobile development environment to use?
  - Xamarin or Android Studio
- Where and how to host our web server?
  - Amazon AWS or Personal PC or Raspberry Pi
- How to collect data inside the mobile device
  - Brute force each sensor or find a plugin that does it all for us
- Data visualization
  - Client side or server side?
- **How to communicate between the Mobile Application and the server?**
  - JSON HTTP post requests or FTP or SFTP
- Scheduling meeting times

# CONCLUSION

- Knew this project was going to be very difficult
- None to little experience with the technology
- Ambitious, determined, and optimistic attitude
- Fought every challenge, achieving goals
- Find a solution for every problem
- Proud of our project
- Better Software Engineers