People Counting Infrastructure

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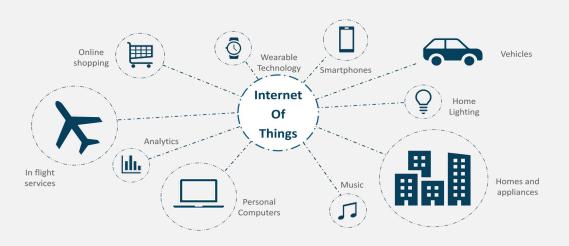Developer

Volodymyr Saruta
Team Mentor

Duane Booher
Client

Internet of Things

- **Connectivity**
- **Cloud infrastructure**
- **Big data**

OUR CLIENT

- Duane Booher

- NAU ITS IoT Team

- Smart and Secure Campus

Solution Overview

$1000+ → <$100+

$1000+ → <$100+

$1000+ → <$100+

$1000+ → <$100+

$1000+ → <$100+

Requirements Acquisition

Weekly Online Meetings

Requirements

Key User Requirements
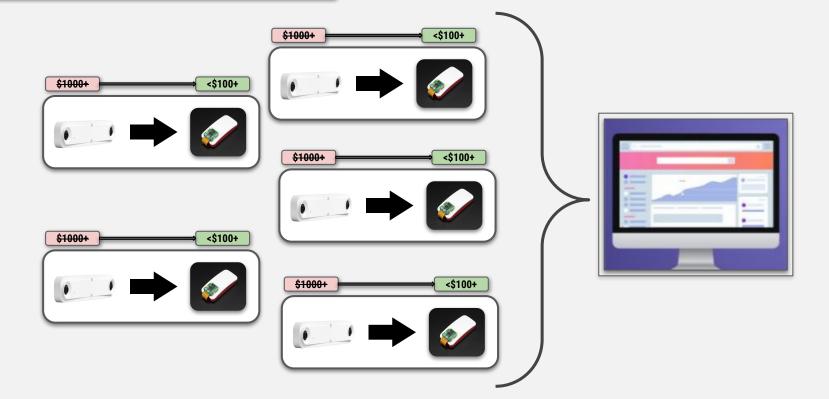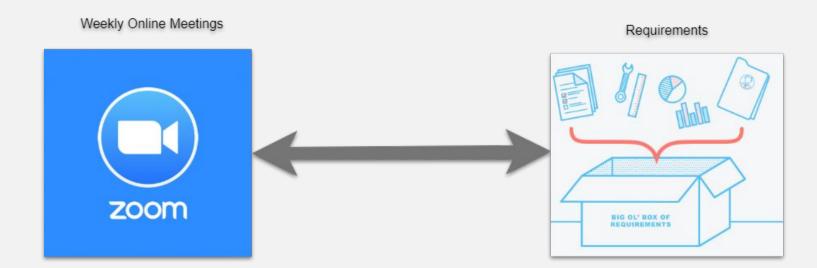
- Affordable
- Non-invasive Hardware
- Visualize room/building capacity over time
- Visualize current room/building capacity
- Responsive data retrieval

Overview of Requirements

Functional

- People recognition
- People counting
- Data storage
- User authentication

Performance

- Scalability
- Live count updation
- Configurable data

Environmental

- NAU hosted
- PC/mobile web UI

Risks and Feasibility

Risk	Description	Likelihood	Severity
Accuracy	Accuracy in tracking people in crowds	**High**	**Medium-High**
Reliability of Data	People may "Trick" the hardware	**Low**	**Medium**
Overloading Backend	Lag time could be introduced if to many request are sent to the backend at once	**Medium**	**Low**

Schedule

Team PiWatcher - Schedule

Current: Week 14

Deliverable	Start Date	End Date	Duration	Percent Complete
Team Standards	8/31/2020	9/18/2020	3	100%
Team Inventory	8/31/2020	9/19/2020	3	100%
Mini-Intro	9/7/2020	9/25/2020	3	100%
Team Website	9/14/2020	10/2/2020	3	100%
Technological Feasibility Draft	9/21/2020	10/9/2020	3	100%
Technological Feasibility Final	10/12/2020	10/23/2020	2	100%
Requirements Specification Draft	10/5/2020	11/6/2020	5	100%
Requirements Specification Final	11/9/2020	11/20/2020	2	0%
Design Review I Draft	10/19/2020	11/6/2020	3	100%
Design Review I Final	11/9/2020	11/13/2020	1	0%
Technical Prototype Demos	11/9/2020	11/27/2020	3	0%
Communication Strategy Memo	1/11/2021	1/22/2021	2	0%
Software Design Document	1/11/2021	2/12/2021	5	0%
UGRADS registration	2/15/2021	2/26/2021	2	0%
Design Review II	2/15/2021	2/26/2021	2	0%
Full Prototype Tech Demo Milestone Spec.	3/1/2021	3/12/2021	2	0%
Software Testing Plan	3/8/2021	4/2/2021	4	0%
Design Review III	3/22/2021	4/2/2021	2	0%
Completed Team Website	4/5/2021	4/16/2021	2	0%
Capstone Poster	4/5/2021	4/16/2021	2	0%
Capstone Presentation	4/5/2021	4/26/2021	3	0%
Final Product Acceptance Demos	4/19/2021	4/30/2021	2	0%
Team Reflection Document	4/26/2021	5/7/2021	2	0%
Final Project Delivery	5/3/2021	5/7/2021	1	0%

Conclusion

PROBLEM

Expensive and unscalable commercial product for counting people to measure the use of areas of campus

SOLUTION

Cheap and scalable solution catered towards the needs for NAU