Final Project Proposal

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Space: Panther Hollow

Ecosystem Analysis:

The first step our group took was analyzing Panther Halls Purpose. We observed that visitors mainly include students and families. Visitors often spend their time here to go on walks, go to playgrounds, and go on bike rides. The main problems we noticed on our visit to Panther Hollow was noise pollution caused by trains and cars and litter. We tried to be mindful of these problems while brainstorming ideas for our final project so that we could create a device tailored to the specific needs of Panther Hall.

Intended Audience:

Used by park managers to view statistics of what parts of the park get the most visitors and get feedback from visitors about state of park. This will allow maintenance to be properly allocated to regions of higher usage. Another benefit is that park staff can reduce energy consumption by knowing which areas are used when, and lighting up areas appropriately.

Proposal:

Our IoT device aims to help park managers passively collect data about the state of their parks and increase the energy efficiency of their parks. We aim to do this via a system of interconnected devices collecting data about park usage, and sharing this data with the necessary park staff. The ultimate goal of such a device would be to exist within the ecosystem of the park and allow for the natural data the park creates to be used within it.

Our purpose is to solve one of the main issues we discovered about this area. This area seems fairly heavily used, however there seems to be broken fixtures around the walkway, and lots of litter left around. Ideally such a high traffic area would receive more maintenance work. There was also an environmental concern about the lighting at night. The park seems to light all areas equally, however this area receives very little night traffic, most of which is a few bikers who have lights on their bikes. Thus our project aims to allow park management to know where to allocate resources appropriately.

 If we do this our group proposes to make an unobtrusive connected system of benches to lanterns to visitors' phones. We will have smart park benches with bluetooth detection systems. These benches will have a button (or QR code, we're still deciding) on them for people to press which indicates maintenance of some sort is required in that area of a park. The bluetooth capabilities will allow the device to approximate how many people are in what areas of a park.

Based on the amount of activity and the time, lanterns can increase or decrease their brightness instead of being on full brightness at all times. Additionally, over time, park managers will be able to build a better picture of what parts of their park get more visitors and they can put more effort into improving certain parts of the park.
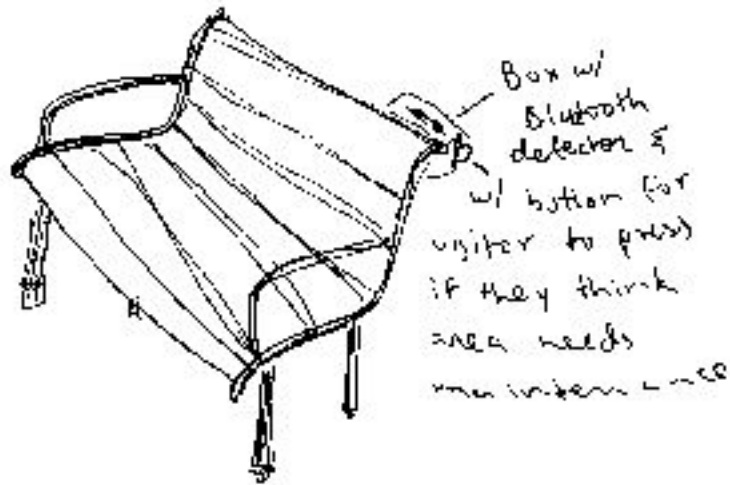
Bill of Parts:

Item	Quantity	Cost
Particle Argon	1	Free
LEDs	~ 5 to 10	Free
Acrylic/Scrap Wood	TBD	Free
Bluetooth Sensors	2	Free
Game Buttons	1	Free

Past Ideas:

Before settling on our final project idea, we had a couple other ideas. One was a children's game comprising mobile controlled light posts. Each light could be individually activated by a parent and the goal was for the child to run to the lit post as quickly as possible. We ultimately decided that we wanted to impact the park in a more meaningful way. Thus, we turned our brainstorming toward ideas which would be more helpful rather than playful. We originally had an idea to create an IoT bench that would collect data regarding the park's visitors as well as other information such as weather. We wanted to provide meaningful data to whatever organization maintains the park in order to improve the quality of time spent at the park. We were ultimately inspired by IoT benches that are already implemented in Paris which collect bluetooth data from the surrounding area and allows visitors to provide feedback about the area via their smartphone.