

1. What's a problem you've noticed that someone might be encountering in the world?

As our population continues to increase, the amount of litter and trash will continue to accumulate. Even a large push by a government or organization cannot put a full stop to litter. As we continue to get larger, that small subset of people who are going to litter will continue to grow, although our available land stays the same.

We need a solution that will enable people to solve the problem rather than relying on laws or government programs to do it for them.

2. What evidence do you have about this problem – did you read it in the news, see it on the street, or read it in the research? What are the details of the problem?

These links are specifically in reference to litter in different countries, but they point to a larger world problem that shows an increasing trend. This link[1] shows that Britain has seen a 10% increase in beach litter from 2016 to 2017. This link[2] shows that Mediterranean beaches see a 40% spike in marine litter each summer. And lastly, this link[3] talks about the litter problem in parks in Australia. Dig really deep, and you can find more data than you know what to do with; but you don't need to. Drive along the highway, walk down a city street, check the ditches in your neighborhood and you will see litter everywhere.

3. Tell a brief story of what happens when someone encounters this problem in real life/real time.

This can cause many problems not only for the beautification of a beach or park area, but can cause hazards to wildlife in the area that are critical to the ecosystem as well as humans who are traversing the area.

When it comes to the people who have to keep these areas clean, you're either relying on areas to be adopted by a company to be cleaned, community service or hired employees to clean up. Some of these options are not reliable, and the hired employee costs tax dollars and they are only one person.

These areas get treated on an irregular basis and can sometimes sit for months before they are cleaned up. The idea is to keep up these things cleaned on a daily or at least weekly basis.

4. How might a software system or application affect/solve the problem? That is, when, where and how does the software system enter the problem storyline?

We could build an app that allows a community to track areas around them that have been/are being cleaned. Users can mark on the app that they have cleaned a particular area by taking a trash bag with them while walking on the beach or hiking on a trail or taking a stroll through their neighborhood.

This would help people to see what is being done around them and encourage them to take part in the clean up as well.

5. What are the features of the system that make it so effective or useful?

People can use a map to mark the areas that they cleaned. It will show up green so that others know not to worry about cleaning that area. After 24 hours, the green goes away. If an area hasn't been cleaned in a week, it will become red so that people know that it needs cleaning badly.

6. Name at least three things a user should be able to do with the system you're proposing.

- Update maps in real-time to show when an area has been cleaned.
- Pay a nominal fee to sign up (\$3) and money gets donated directly to a charity of the user's choice.
- Gain experience, level up and "gain territories" for cleaning areas for consecutive days, or more days than anyone else.

7. Describe what would happen if the software system/application were implemented and worked – how would the world and user be changed for the better?

People would come around their communities to help keep things clean. The fun of leveling up and getting badges would keep people engaged and in competition. This would relieve the pressure of state employees and companies to use resources to keep areas clean.

[1] - <https://www.globalcitizen.org/en/content/litter-increase-britain-beaches-uk/>

[2] - <https://www.theguardian.com/environment/2018/jun/08/tourists-to-med-told-to-ditch-plastic-to-avoid-huge-rise-in-beach-litter>

[3] - <https://www.theadvocate.com.au/story/3834561/park-litter-on-the-rise/>