CLEAN CLEAN

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OBJECTIVE:

- Help prevent the continuous rise in the amount of trash in the oceans, by encouraging recycling and waste removal from inappropriate places.
- Connect people who share the same goal: cleaning our world and saving our oceans.

BACKGROUND:

The Great Pacific Garbage Patch (GPGP) is the largest and most well-known of the garbage patches in the oceans. According to Bettina Wasseneraug, in 2011 the world was producing 300 million tons of plastic each year, most of it being dumped, landfilled or is left as trash in landscapes, lakes, rivers and the ocean, with only about 10% of it being recycled. “About 80% of marine debris originates from sources on land and the other 20%, about 636,000 tons per year, comes from ocean vessels (US Department of Commerce 1999; Ramirez-Llodra et al. 2011).” At that time, each year would have about 7 million tons of plastic ending up in the ocean, which was roughly 75% of all marine debris. Since plastic is not biodegradable, it can only breaks into tinier and tinier pieces, known as microplastics.

In 2017, Laurent C. M. Lebreton estimated that 1.15 to 2.41 million tonnes of plastic are entering the ocean each year from rivers and, since more than half

of this plastic is less dense than the water, it won't sink once it reaches the sea, though oceanographers and ecologists discovered that about 70% of marine debris actually sinks to the bottom of the ocean. Estimations say that there is from 1.1 to up to 3.6 trillion plastic pieces floating in the GPGP.

FEATURES:

- Create an account.
- Find marked places where there is trash to be collected.
- Find garbage collection points through: a) GPS location; b) address; c) name of the establishment/ong/institution.
- Find partner establishments/ongs/institutions through: a) GPS location; b) address; c) name.
- Mark locations of irregular disposal of trash, so that other users can arrange for its removal.
- Upload pictures of: events, locations etc.
- Search for and add friends.
- React and reply to posts and comments of friends.
- Uses Physical Oceanography DAAC (PODAAC)'s data on the ocean currents and circulation to estimate the trajectory the debris would travel and the time it would take to reach its destination.
- Rank users in descending order: from those who managed to remove the biggest amount of trash to a garbage collection point to encourage participation and give greater credibility to good users.

DEVELOPMENT:

We have created a prototype of our idealized application, which would be developed with the Flutter framework and Dart language. Our app, called *Clean*

Clean, is a tool in avoid, and solve, the disposal of trash in inappropriate places. By preventing the trash from being carried into rivers and/or the oceans by rainwater or high tide, for example, and encouraging recycling, we aim to reduce the increase in the amount of plastic in the oceans.