

COM-480:Data visualization  
Data visualization of marine plastic [litter, debris, etc.]  
pollution.

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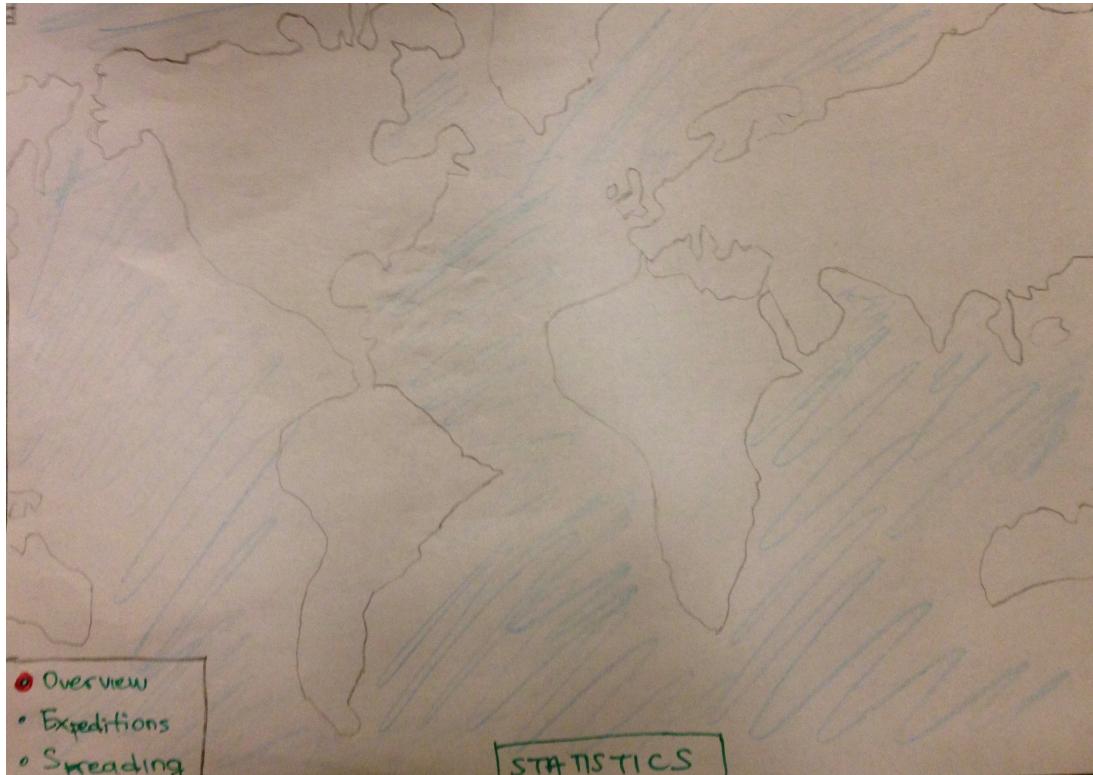


Figure 1: Overview [Map]

## 1 Prototype

### 1.1 Overview

Overview section is what is shown when the user opens visualization. It consists of world map, and a button referring to overall *statistics* of pollution [for each ocean/sea separately]. Moreover, there is another panel, where user choose, if she wants to explore more about done **expeditions** or **garbage spreading**.

### 1.2 Expeditions

We visualize all done expeditions on the map. User can zoom in to geometrically explore, in more details, exact points of expedition. By clicking on a certain expedition (here marked in red), all other (possibly overlapping) expeditions disappear. In addition to this, small panel, with more information about the exact expedition, appears next to it on a map. Further, by clicking on button called *statistics*, user can investigate expeditions over time. On a provided timeline, it is possible to select time interval, and slide it over timeline. These actions are linked with two graphics, which are displaying information (number of expeditions in each ocean and amount of measured garbage of each type), during marked time interval. Moreover, through radio buttons panel, user can at any moment, choose if she wants to explore more about **overview** statistics or **garbage spreading**.

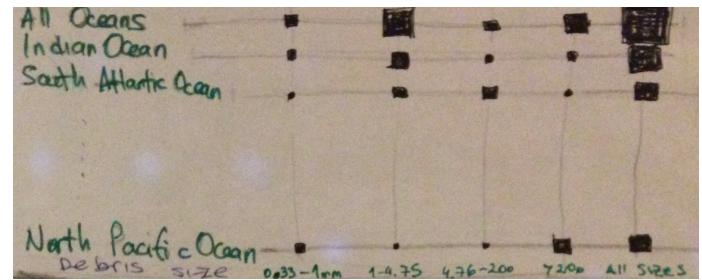


Figure 2: Overview [Statistics]

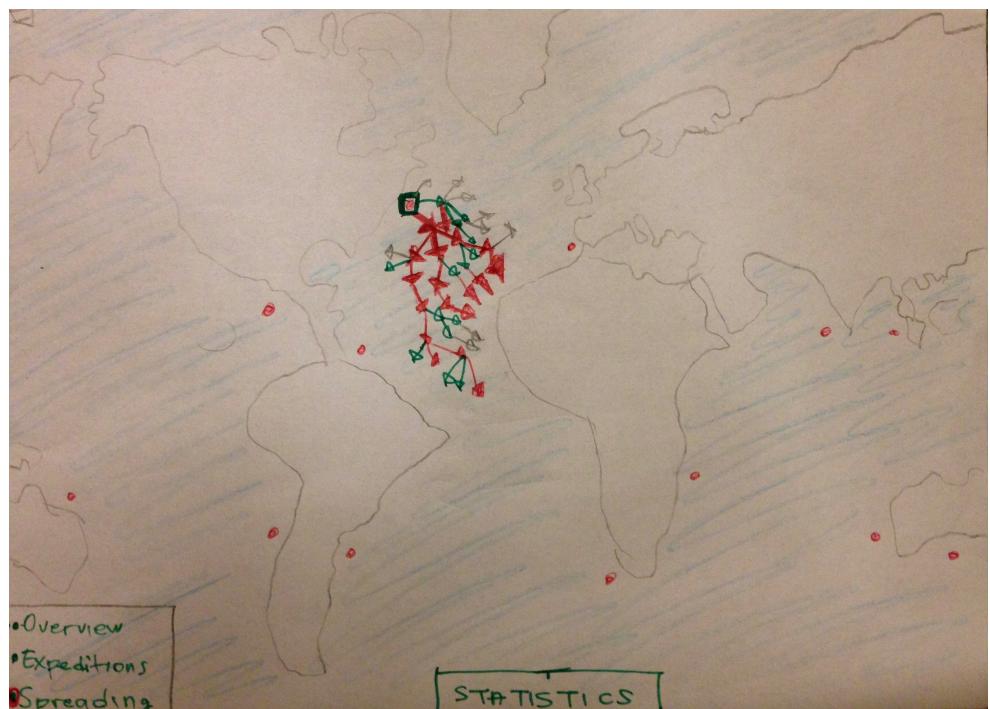


Figure 3: Expeditions [Map]

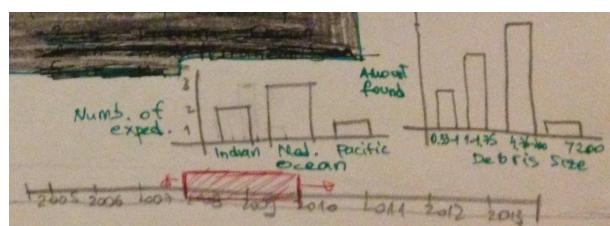


Figure 4: Expeditions [Statistics]

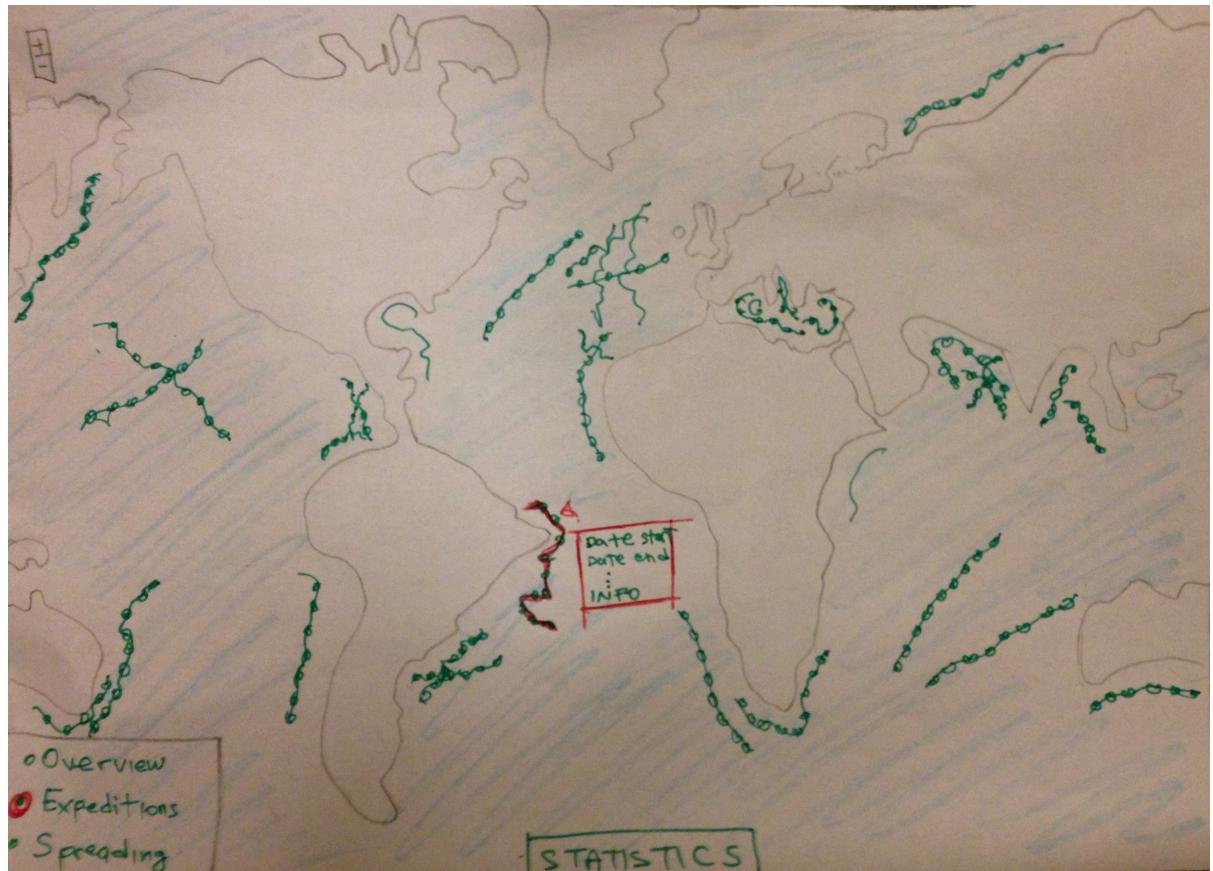


Figure 5: Spreading [Map]

### 1.3 Spreading

In this section, user is shown red markers on a map, with a possibility to click on any of them. By choosing one of these markers, user starts a small animation, which shows direction of garbage spreading, when it is thrown at the chosen marked point. To visualize spreading, we use graph. Each *type* of edge, represents different probability for garbage to spread in this direction. E.g. red thick edges are used for high probabilities, while green thin edges can be used for somewhat smaller probabilities. Moreover, through radio buttons panel, user can at any moment, choose if she wants to explore more about **overview** statistics or **expeditions**.