**CHALLENGE 14**

**REPORT**

**Introduction**:

This study is regarding microbial life in our belly buttons.

Research conducted in North Carolina State University revealed that a small number of microbial species (also called **O**perational **T**axonomic **U**nits, or **OTU**s, in the study) are present in more than 70% of people, while the rest of OTUs are relatively rare.

**Data**:

The data used in the study, samples.json, is separated into three sets:

* ‘**names**’: An array of subjects in the study, identified by a number,
* ‘**metadata**’: Demographic description of each participant in the study,
* ‘**samples**’: Identifies each bacterium type (OTU) and its abundance characterized by the corresponding count, in the belly button of a subject. There could be up 80 identifiable OTUs in a belly button, but only a few (≲ 10) dominate in a given belly button.

Using java script a program file was created. Functions from the program file were accessed in a ‘.html’ file to create an interactive Dashboard as in the following illustrations.

Since a participant’s identity (Subject ID) is the common attribute to all three data sets, the Subject ID

choice in the dropdown box determines the information observed on the page.

A new choice in the dropdown box shows information related to that particular subject.

The ‘dropdown’ on the dashboard allows a user to choose a Subject ID. For each choice the demographic data of the subject is updated, ten most abundant OTUs present are illustrated in the bar chart, all the OTUs present are shown in the bubble chart and a gauge dial represents the number of scrubs per week of the belly button.

Example 1

A screenshot of a computer

Description automatically generated

Example 2

A screenshot of a computer screen

Description automatically generated

**Conclusion**:

* The data shows the presence of a team of bacteria in a person’s belly button.
* The data, however, does not establish any correlation between the number of each type of bacterium and its population with the number of rinses per week, and the demographics associated with a participant.