1. Structural Organization

Our structural design consists four major stages.

1. Collect raw data by crawling technique with Python.

Gathered raw data would be contained as form of excel file firstly. (.csv)

1. Process data with Python and HDFS.

Raw data is going to be rearranged into sql language which enables to upload to database. (.sql)

Data is uploaded to each table that is made in advance. (MySQL)

1. Construct Database with Web

In this stage, we establish a basic Database-to-web connection. (PHP)

Since we need to keep interacting with database according to user’s demand, this connection will be consistently used and sustained.

1. Visualizing service via web

Organize and visualize web with various languages. (PHP, HTML, CSS, Java Script, Python, sql)

We decide to use every option we can take since we are not professional for one specific language and want to use languages which we learnt as many as possible.

About the structure and relationship of files and directories, we concluded that it would be difficult to explain via only oral, so we drew a picture that explains relationship for each files and directories. We marked every component we created and users. Also, we used direction of arrows as indicator for influencing to others and producing data.

1. Implementation

Besides from overall structure, in this section, we will talk about details of how we implemented service.

1. First, we organized overall UI with HTML and CSS. Additionally, with basic data about categories from database server, we add checkboxes with basic functions for users to choose by their preference. Lastly, button for result without function yet.
2. Secondly, we applied AJAX to give users information in one page which enable them to use service continuously without manual loading. By attaching functions with ajax on created button, users can see bar chart about number of stores, line chart about tendency of station's popularity and top 5 stations as the result of their current choice. Via this step, user can get information about stations which is fit in their interests.
3. And also, we build codes that activate list of stations as buttons that enable users to see more specific information about chosen station which is including top 5 stores for each categories, pie chart about proportion between number of stores for each categories and word cloud about keywords which were mentioned around that station. In this stage, user get more specified information about what stores and places they can consider sincerely.

Besides from overall structure, in this section, we will talk about details of how we implemented service.

Since we used almost every language for every stage, it is unable to be mentioned clearly so we leave what languages we used; HTML, CSS, SQL, Java Script, Python.