

## Architecture

### 1. PHP files

- a. search.php- It contains the basic layout of search result page. It includes load\_search\_result.js which loads all the search results,filter and promotions.
- b. get\_search\_result.php- this page generates the search result. Search result is generated by getting all the terms of search bar and then stemming it with PorterStemmer2. Now search\_index table is searched with respect to every term of search bar(after stemming) and items are ranked based on weights of item\_nm,item\_description,category,tags and number of clicks. Now the search result of each term in search bar is merged to give the result. The result is of form of array of associative array of item and its details.
- c. load\_filter.php - This page generates the filters of the search result. The search result we get above is analysed and a filter is generated dynamically. Filter is of 4 types
  - i. category and sub-category
  - ii. Type-auction/sale
  - iii. Cost distribution
  - iv. Condition of items
- d. promotions.php- this file generate promotions. Promotions are not random,they are related to the search. Promotions are of pay per view type. For each time its displayed, promotion amount of item is decreased.
- e. search\_suggestions.php - This file generates search suggestions. Search suggestions are based on search history of all those who used this application. There are 2 tiers
  - i. Personal history
  - ii. General history
- f. insert\_search\_history.php- Updates the search history
- g. update\_search\_index.php-this file will update the search index every time a item is added. Item name,description,category,tags are taken and parsed and all the words are stemmed. Now All unique words are taken and num of reps of that word is calculated in Item name,description,category,tags. Then the search\_index is updated.

### 2. JS files

- a. index\_load\_items.js- load the items in index page
- b. load\_search\_result.js- load the entire search page. it has following functions
  - i. load\_items(where\_clause)
  - ii. load\_filter(search\_term)
  - iii. load\_promotions(search\_term)
  - iv. display\_items\_with\_pagination(offset,num\_items)
- c. search\_suggestions.js- this is responsible for showing of search suggestions.

### 3. External libraries

- a. PorterStemmer2.php and StringBuilder.php- for stemming the words

- b. `class.MySQL.php`- for mysql queries
- c. bootstrap paginator- for pagination of search result