Software Requirements Specification

for

ScanShop

Version 1.0

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March 12 2017

1. Requirements

1.1 The domain

ScanShop is targeted towards people looking to save money while shopping online. Although the app caters to all age groups, younger demographics who shop online more often are more likely to use the app in order to save money while doing so. However, the app is not aimed towards a specific audience, and in theory can be utilised by anyone who shops online. Clients interested in using ScanShop expect to retrieve a list of alternative merchants faster than they can look for it themselves. ScanShop aims to provide customers with the names merchants selling a certain product, of which the buyer can make a decision to purchase from. Although its primary focus is to provide the customer with the lowest priced object of which they have searched for, ScanShop may also be used to search in terms of different criteria in the future.

The major stakeholders for this project are the course coordinator and his team(TAs), and any potential online shoppers. For the course coordinator and this team, they expect a fully functional program with all design processes documented. This involves all major components of the program working and meeting requirements. However, more than a complete program, the creation process and documentation of this process is what is most important to this stakeholder group. The second stakeholder group, online shoppers, want a product that is easy to pick up and use, and can be convenient used to improve their online shopping experience.

1.2 Functional Requirements

- Scan UPC/EAN Barcode of a product
- Accept name of a product as input
- Use UPC/EAN to find ASIN code of the product
- Use ASIN code to find the product in the database and return its name, price, ASIN and UPC/EAN code.
- Use name of the product to find it in the database and return its its name, price, ASIN and UPC/EAN code.
- The version of the product that it returns is the one with the lowest price.

1.3 Non-Functional Requirements

Reliability:

- The program should always return the lowest price for a searched product
- It should also be able to scan any barcode, given that the barcode is of UPC type

Simple interface (human-computer interface):

- Since this program has a target client of anyone who wants to shop online, its interface needs to be simple to understand and use. This will all the almost anyone to download the app and be able to use it to its full ability

High level of accuracy:

- Since the program's main function is to give the lowest price for a product (currently just on amazon), it should be able to find this information for any product given to it.

Fast Response:

- Since this program works along with online shopping ,which is growing in popularity because of convenience and speed, it should also have these qualities. This would allow it to work well with customers looking to by from online stores. Also, this would allow customers to easily compare prices of items in store and online.

Easily Maintainable:

- Changes to implementation of search,sort, graphing and input/output algorithms can be easily made without interfering with the interface.

1.4 Requirements on the development and maintenance process

Quality Control Procedures:

Testing/Review

- Unit Testing:- individual units/components of software will be tested to validate that each unit of the software performs as designed. Example:- once the barcode scanner is complete it will tested (assuming barcode scanner is one unit module)
- Integration Testing:- which involves testing collections of modules as they are integrated, with each individual module having been tested separately previously. Example:- the implemented algorithms (search, sort, etc.) will be tested along with the module that parses the dataset.
- System Testing:- will be conducted on a complete and integrated software, so after all the modules are ready and put together. Example:- Putting barcode scanner with dataset and other modules, and then conducting test on it.
- Acceptance Testing:- After the final product is complete, a final test will be conducted on it. Example:- when the final app is ready it will be tested on a smartphone for correct functionality.
- After every Unit Testing, all the code will be reviewed, after Integration Testing all the requirements will be reviewed as well to make sure that the final product meets the requirements.

Priorities of the Required Functions:

- Reading the dataset - parsing the information (ability to read from the dataset)
- Product ADT - will be used to make product instance (able to make product instance)
- Sorting and Searching algorithms (to sort the dataset, to search the product from the dataset)
- Barcode scanner (able to scan the barcode using camera of smartphone)
- Designing the app (For this project, Design of the product is not important)

Likely Changes to System Maintenance Procedures and Requirements:

- May not implement other stores (walmart, bestbuy, etc.) because of time constraint, so the requirements can change here, ScanShop will for sure provide the price of the product from amazon dataset but it might not provide prices from other local stores/online retailers.
- Instead of showing multiple products, it might only show single product with the lowest price.