**Software Requirements Specifications for Flipkart Search Functionality**

1. **Introduction**
   1. **Purpose**

The purpose of this document is to specify the requirements for the search functionality of the Flipkart e-commerce platform. This includes how data will be stored, the use of MongoDB for data storage, and the implementation of the MVC (Model-View-Controller) model.

* 1. **Scope**

This SRS covers the search functionality, including data storage, retrieval, and display. It does not cover other functionalities of the Flipkart platform.

* 1. **Acronyms**

JSON: JavaScript Object Notation

MVC: Model-View-Controller

DB: Database

1. **General Description** 
   1. **Product Perspective**

The search functionality is a core component of the Flipkart platform, allowing users to find products quickly and efficiently.

* 1. **Product Functions**
* Accept user queries.
* Retrieve relevant product data.
* Display search results.
  1. **User Characteristics**

Users include customers searching for products on the Flipkart platform.

* 1. **Constraints**
* Must handle high traffic volumes up to 10,000 concurrent requests.
* Must return results within 200ms of making a request.
* Must return relevant searches based on Low to High Price sorted by alphabetical order for products having same price.
  1. **Assumptions and Dependencies**
* Assumes a stable internet connection.
* Depends on the availability of the MongoDB database.

1. **Specific Requirements**
   1. **Functional requirements**
      1. **Search Query Processing**

* The system shall accept search queries from users.
* The system shall process the search queries using item attributes Name, Brand, Price, Description, Category, Sub-Category.
* The searched items should be sorted using primary attribute as price in ascending order with items having the same price sorted in an alphabetical order.
  + 1. **Data Storage and Retrieval**
* The system shall store product data in JSON format in a MongoDB database.
* The system shall retrieve product data from the MongoDB database based on search queries.
* The stored items have the following attributes: Name, Brand, Price, Image URLs, Category, Sub-Category.
  1. **External Interface Requirements**
     1. **User Interfaces**
* The search bar shall be prominently displayed on the Flipkart homepage.
* The search bar includes an editable input field where minimum characters should be 1 and maximum characters should be 100.
* The search bar includes a clickable button on the extreme right side having a magnifying glass icon.
* The search functionality should be initiated on pressing “enter” or by clicking on the search button.
* The search results page shall display results in the form of a list where product image is on the extreme left, price on extreme right and in the middle description, in the form of bullet points along with average rating.
* The search results page will have 5 products per view and view will be scrollable.
* When user clicks on the product a new page will open which will display in-depth details of the product. The Image of the product can be viewed in AR.
* User can type anything and if it does not match with the data in the database then the results page should display “**No Results**”
  + 1. **Software Interfaces**
* The system shall interact with the Flipkart API for product data.
* The system shall use Mongoose driver for MongoDB.
* The system shall be compatible With Windows, MacOS and Linux/Unix.
* The system is supported by Chrome, Safari, Firefox, Microsoft Edge, Opera.
  1. **Performance Requirements**
* The system shall return search results within 200ms.
* The system shall handle up to 10,000 concurrent search queries.
* The system shall have a performance efficiency of 90%.
  1. **Design Constraints**

The system shall use the MVC model for design.

* Model: Handles data storage and retrieval using MongoDB.
* View: Displays search results to the user.
* Controller: Processes user queries and interacts with the Model and View.
  1. **Non-Functional Requirements**
     1. **Security**
* The system shall ensure secure communication using HTTPS.
* The system shall protect user data from unauthorized access.
  + 1. **Reliability**
* The system shall have an uptime of 99.9%.