

# WALMART API HOMEWORK

As part of this project I have developed a Java application to rank order Walmart Product Recommendations by calling various Walmart Labs Open API's. The various Walmart API's invoked in this application are:

- Search API
- Product Recommendation API
- Reviews API

## Assumptions:

1. All the Inputs will be read from console and outputs will be printed to console.
2. User requests data only in JSON format.
3. The recommended products are ranked based on the AverageOverallRating value obtained from reviews associated with each product.
4. The output ranked product recommendations contain important fields like Product itemId, Product ParentItemId, Product Name, Product UPC, Product CategoryPath, Product ProductUrl, Product AverageOverallRating.
5. The output is presented as JSON object as String.

## Project Environment:

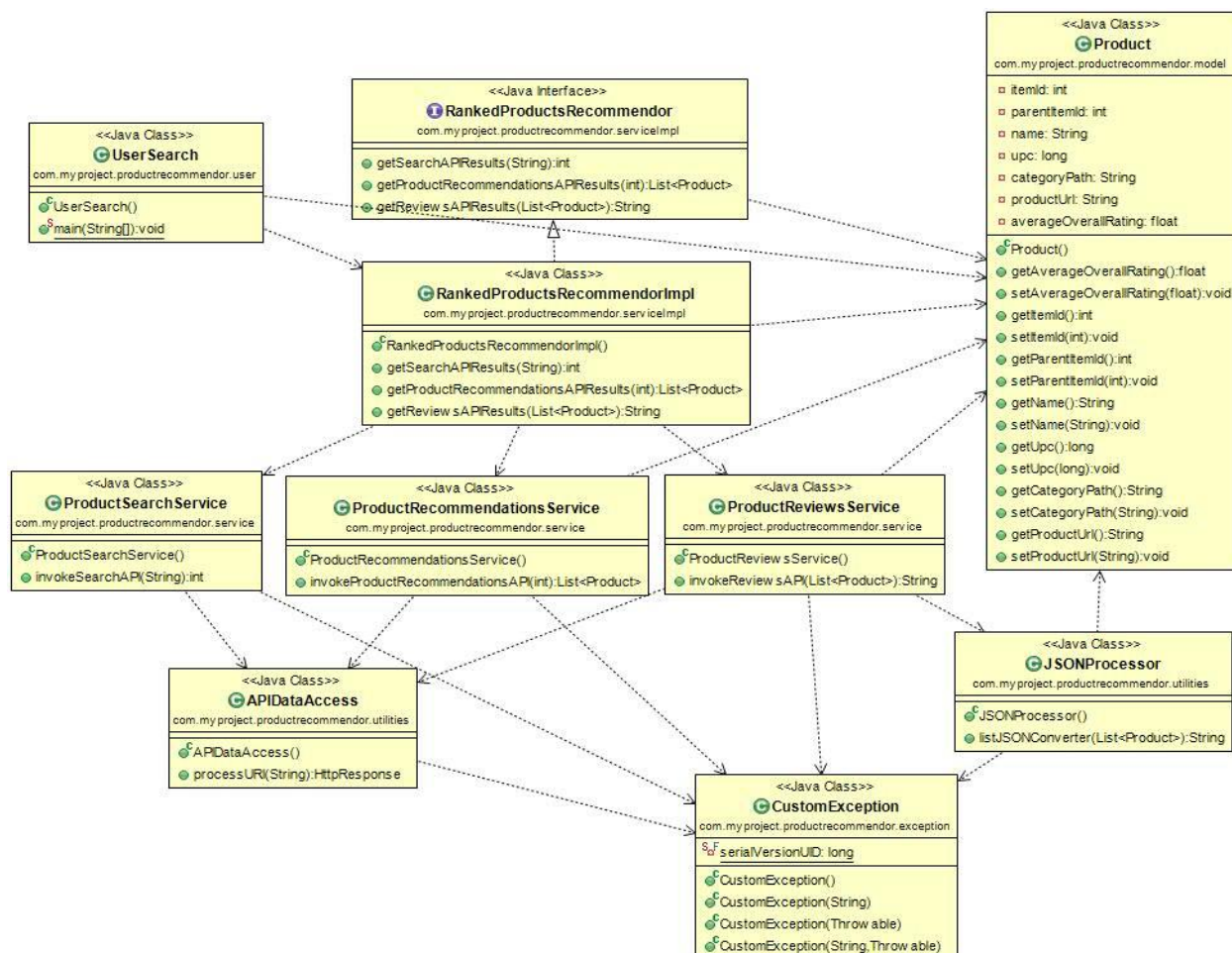
1. Project has been developed in 64 bit windows using Eclipse IDE Mars.
2. The java environment used for developing this project are:
  - java version "1.7.0\_79"(min req JRE 1.7 or above)
  - Java(TM) SE Runtime Environment (build 1.7.0\_79-b15)
  - Apache Maven 3.3.9
3. The various external jars used for the development are:
  - httpclient-4.5.2.jar
  - httpcore-4.4.4.jar
  - commons-logging-1.2.jar
  - commons-codec-1.9.jar
  - javax.json-api-1.0.jar
  - javax.json-1.0.4.jar
  - jettison-1.3.7.jar
  - stax-api-1.0.1.jar
  - junit-4.12.jar
  - hamcrest-core-1.3.jar

# WALMART API HOMEWORK

## Java Classes Description:

1. UserSearch class has the Main Method from the program execution flows. It takes the User search keyword input and presents the product recommendations in JSON format as String.
2. RankedProductRecommendor interface outlines the mandatory methods which need to be implemented to obtain the required business functionality.
3. RankedProductsRecommendorImpl class is the implementation of the interface and calls all the required methods to obtain the Rank Order Product Recommendations for the input search keyword.
4. ProductSearchService, ProductRecommendationsService and ProductReviewsService. These 3 classes are responsible to invoke the API's and get the response in JSON format.
5. Product class which is a model class which represents the Product.
6. Utility classes APIDataAccess and JSONProcessor which are inturn used by the service classes.
7. CustomException class which is responsible for custom error messages.

## Class Diagram:



## WALMART API HOMEWORK

### Testing:

I have created Junit tests for the project.










1. TestRecommendationsService: This tests whether recommendation service class gets proper product recommendations for valid product item id or not. This also test the connection with the API.
2. TestReviewsService: This tests whether review service class gets product reviews for valid product item id or not. This also test the connection with the API.
3. TestSearchService: This tests whether search service class gets proper product search results for valid search keyword or not. This also test the connection with the API.

### Project Build:

I have used Apache Maven for building the project. I build and executed the project from command line. Navigate to the project folder path where the project pom.xml is present and run the following command.

1. mvn clean
2. mvn validate
3. mvn compile
4. mvn test
5. mvn package

After a successful build project jar is being created in the Target folder along with other folders.

 archive-tmp	6/8/2016 12:31 PM	File folder	
 classes	6/8/2016 2:56 PM	File folder	
 generated-sources	6/8/2016 12:30 PM	File folder	
 generated-test-sources	6/8/2016 12:30 PM	File folder	
 maven-archiver	6/8/2016 12:31 PM	File folder	
 maven-status	6/8/2016 12:30 PM	File folder	
 surefire-reports	6/8/2016 12:30 PM	File folder	
 test-classes	6/8/2016 2:56 PM	File folder	
 Walmart-Product-Recommendor-0.0.1-SNAPSHOT-jar-with-dependencies	6/8/2016 12:31 PM	Executable Jar File	1,888 KB

# WALMART API HOMEWORK

## Steps to Run the Program:

Min Requirements: Java 1.7 or above version. Active Internet Connection.

1. Clone the project from the below Repository to your local environment.

Repository: <https://github.com/Harish225/WalmartProductRecommendor.git>

**git clone** <https://github.com/Harish225/WalmartProductRecommendor.git>

2. Navigate to the Target folder present in the WalmartProductRecommendor folder and execute the following command:

**java -jar Walmart-Product-Recommendor-0.0.1-SNAPSHOT-jar-with-dependencies.jar**

Input: Search Keyword

Output: Rank Order Product Recommendations in JSON format.

## Sample Output:

```
C:\Users\NKH\Harish\Desktop\WalmartProductRecommendor\target>java -jar Walmart-Product-Recommendor-0.0.1-SNAPSHOT-jar-with-dependencies.jar
Please enter whitespace separated sequence of keywords: book
GET http://api.walmartlabs.com/v1/search?apiKey=xhtd6jeuvub334nkjyqcupyj&query=book&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/nbp?apiKey=xhtd6jeuvub334nkjyqcupyj&itemId=10895462 HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/16510438?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/19895444?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/378142?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/455075?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/378144?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/378145?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/378143?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/10231633?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/11001431?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
GET http://api.walmartlabs.com/v1/reviews/2596143?apiKey=xhtd6jeuvub334nkjyqcupyj&format=json HTTP/1.1
The Rank order Product Recommendations for the input BOOK are:{"RankedProductRecommendations":[{"ItemID":"2596143","AverageOverallRating":"4.94","ParentItemID":"2596143","ProductName":"Your Favorite Seuss: 13 Stories Written and Illustrated by Dr. Seuss With 13 Introductory Essays","CategoryPath":"Books\\Children's Books\\Popular Characters\\Cat in the Hat","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2FYour-Favorite-Seuss-A-Baker-s-Dozen-by-the-One-and-Only-Dr.-Seuss%2F2596143%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"780375810619"},{"ItemID":"455075","AverageOverallRating":"4.91","ParentItemID":"455075","ProductName":"Dr. Seuss's ABC","CategoryPath":"Books\\Children's Books\\Popular Characters\\Cat in the Hat","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2F455075%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"780394800301"},{"ItemID":"10231633","AverageOverallRating":"4.8","ParentItemID":"10231633","ProductName":"The Big Blue Book of Beginner Books","CategoryPath":"Books\\Children's Books\\Popular Characters\\Cat in the Hat","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2FThe-Big-Blue-Book-of-Beginner-Books%2F10231633%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"80375855282"},{"ItemID":"19895444","AverageOverallRating":"4.76","ParentItemID":"19895444","ProductName":"The Little Blue Box of Bright and Early Board Books","CategoryPath":"Books\\Children's Books\\5 - 7 Years","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2FThe-Little-Blue-Box-of-Bright-and-Early-Board-Books-by-Dr.-Seuss%2F19895444%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"803079758676"},{"ItemID":"378143","AverageOverallRating":"4.43","ParentItemID":"378143","ProductName":"Dr Seuss's ABC: An Amazing Book","CategoryPath":"Books\\Children's Books\\Educational","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2F378143%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"780679882817"},{"ItemID":"16510438","AverageOverallRating":"4.38","ParentItemID":"16510438","ProductName":"Dr. Seuss's Second Beginner Book Collection","CategoryPath":"Books\\Children's Books\\Literature & Fiction\\Classics","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2FDr.-Seuss-s-Second-Beginner-Book-Collection%2F16510438%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"803758712838"},{"ItemID":"378144","AverageOverallRating":"4.24","ParentItemID":"378144","ProductName":"Mr. Brown Can Moo, Can You: Dr. Seuss's Book of Wonderful Noises","CategoryPath":"Books\\$5 Children's Books","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2F378144%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26affilsrc%3Dapi%26veh%3Daff%26wmlspartner%3Dreadonlyapi","ProductUPC":"780679882824"},{"ItemID":"378142","AverageOverallRating":"3.96","ParentItemID":"378142","ProductName":"The Foot Book: Dr. Seuss's Wacky Book of Opposites","CategoryPath":"Books\\$5 Children's Books","ProductURL":"http://c.affil.walmart.com/t/api01?l=http%3A%2F%2Fwww.walmart.com%2Fip%2F378142%3Faffp1%3D_fpsP0xVym-R41gDph76_akB4H1YaxaSY7H1KVvtIyU%26a"}]
```