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Comparative E-Business Portal for Different Marketplaces using Hadoop

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ABSTRACT: E-commerce portals are now trending in India. It is spreading in every place and customers are showing interest in using this portal effectively. While in this time, business of marketplaces are decreasing as they can't reach up to users. Therefore, we will be developing a portal search engine where all updates and advertisement of marketplaces will be available to promote their products. In other words, there will be "one stop" for all marketplaces. In this we can probe, screen, select, preserve product easily. It will also give the information related to availability and minimal assessment by comparing that product in different market places. And this record would help us to refined the product available based on the user input. It also is screening the product reviews and ratings. All this will contain big data. Apache Hadoop is open framework for distributed processing system can process large volume of data and then it will be processed using Map Reduce technique where our database will be in HBase. Our goal is originally aims to provide consumers more information and to make them interactive with market places.

KEYWORDS: MapReduce, HBase, Hadoop, E-commerce.

I INTRODUCTION

Hadoop is an open source framework for distributed storage and distributed processing of very large data sets on computer clusters built from commodity hardware. It was developed by "Apache Software Foundation". It is written in java and uses cross platform operating system. The core part of Apache Hadoop consists of a storage part known as Hadoop Distributed File System (HDFS) and a processing part called Mapreduce. Electronic Business which is also known as e-business, is the online business. It can also be defined as the business which is done with the help of internet or electronic data interchange. It is not confined to buying and selling of goods only, but it includes either activity like providing services to the customers, communicating with employees-commerce is the major part of e-business. Ecommerce is business transaction through electronic means, including internet, telephones, television and computer.

Nowadays it is growing in every place and customers are showing interest in using these portals effectively. In 2010 United Kingdom had biggest market in the world when measured. Now, it has become an important tool for small and large business worldwide, not only to sell to customers but also to engage them. It includes applications like online shopping, online tracking, online banking, electronic tickets, social networking etc.

Types of E-business models-

1] B2C: The business to consumer, or B2c, model of e-business sells products directly to retail consumers online. Amazon.com is an example of B2C model the e-business has only an online identity through which it offers a range of products to consumers.

2] B2B: The business to business, or B2B, model involves companies using the internet to conduct transaction with one other. B2B e-business accounts for more than 90 percent of all electronic commerce, according the U.S. These transactions are multifaceted and often involve multiple transactions each step of the supply chain.



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3] C2B: Consumer to business, or C2B, is a unique e-business model in which consumers create value and demand for products. Reverse auctions are common characteristics of C2B models, in which consumers drive transactions and offer their own prices for products. The airline ticket website Priceline.com is an example of a C2B e-business model.

4] C2C: Consumer to Consumer, or C2C, e-business models enables consumers to behave as buyers and sellers in third-part-facilitated online marketplaces. The company brings together disparate buyers and sellers to conduct business.

As we can see due to this, trend of online shopping is increasing day by day in today's time. Websites have been implemented for the purchase of anything "online" using different sources by sitting at their own place. Like, firstly if we take an example of Amazon, it is nothing but the largest internet based retailer in the world. It was founded on July 5, 1994 at Seattle, Washington, U.S. It serves worldwide. It has separate retail websites in India. Secondly flipchart is India's the largest online book retailer. It took the initiative from India to work on this online shopping. It was found on 2007, at Karnataka India. Today it is the most superior E-business portal which is aggressively expanding and its roots deep into the Indian market and at the same time shifting the mindset of people i.e. from going and shopping from physical store to online be magnificent. Overall Flipchart is good, but it is facing some tough competition from its competitors like EBay and Amazon.

There are more sites have been enabled, which offers online shopping of anything from anywhere. They provide various products from different brands and also show the price distribution of each. There are different payment facilities like credit card, cash on delivery, net banking etc. They also contain column in which one can give their review or any opinion related to any product or site which help others to take decisions properly. But still there are many things to improve in this field. People are not getting full satisfactory results.

Due to this rapid increase of online shopping, business of offline retailers is decreasing day by day. So for them and those who don't prefer online shopping and go to various places to get product of their choice, here there will be a website for them. It will show the details of all showrooms, shops and malls at their own place only. They can check the availability, price of the products in it. Also those retailers who don't get chance to advocate their offers and discounts, they can register and update in website, this will make people aware. It will also show you the results of your search according to the distance and comparing it by other showrooms also. This will save people's time and energy. After finalizing their product they can also reserve it for particular period of time and can go directly and buy according to their convenience.

II.EXISTING SYSTEM

Existing system is totally manual. For all the entries regarding all kind of shops, malland whole sale, complain and employee management they prefer paperwork. It istedious task such as generating reports, searching the record, maintaining renewing

Details of item details and sale, purchase details, invoice details and main thing are thatwe can't take backup. It needs a lot of time, manpower etc. Maintaining backup isvery difficult because any hazards or rough use can cause damage to the records,which are unrecoverable.

The existing system needs lot man power which causes the process to be slow.Due to which it takes lot of time to issue the all kind of Retail shops and whole sale shop to the owner. Maintaining the old data which is stored in registers is quite hecticjob. Searching for any customer and vendor details it will consume time to searchsuch records.

There are some Drawbacks:

- 1) Entry of all information of customers and supplier is done in differentregisters.
- 2) Security of data is not maintained.
- 3) Renew of the details of customer, product, complain and employee isdifficult.
- 4) Generating report is critical as well as time consuming.
- 5) It increases the chances of error and data processing time.
- 6) Lot of time is required & timely updating is complicated.
- 7) Searching of any record is also very difficult.



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III. PROBLEM DEFINATION

Due to unsatisfactory result of online shopping, we will be designing a server which will contain all the information and the updates of different showrooms and stores. This will help to get all the information of their need and get it done by going directly to that place which suited them best. Instead of roaming here and there, wasting their time or investing money on online products which don't give them full satisfaction and happiness, which they get by trying, checking and then buying.

IV. PROPOSE SYSTEM

The proposed system helps in building a portal to purchase, sell products or goods online using online network. Purchasing of goods online, user can select different products based on department, online transaction, delivery services and hence covering the disadvantages of the existing system and making the purchasing easier and helping the dealer to reach wider market.

In day to day life, we will need to purchase lots of goods or products from a shop. It may be food items, electronic pieces, house hold pieces etc. Now days, it is really hard to get some time to go out and get them by ourselves due to busy in lots of works. In order to solve this, B2C E-Commerce portals have been started. Using these portals, we can purchase specific or products online just by visiting the portals and ordering the pieces online by making online transaction.

This existing system of purchasing best has several disadvantages. It requires lots of time to travel to the particular shop to purchase the specific. Since everyone is leading busy life now days, time means a lot to everyone. Also there is cost for travelling from house to shop. More over the shop from where we would like to purchase something may not be open 24*7*365. Hence we have to adjust our time with the salesperson's time or dealer's time.

In order to overcome these, we have e-commerce solution, i.e. one place where we can get all required goods/products online. The proposed system helps in building a portal to purchase, sell products or goods online using online network. Purchasing of goods online, user can choose different products based on department, online transaction, delivery services and hence covering the disadvantages of the existing system and making the purchasing easier and helping the dealer to reach vast market.

Still, there are times when people don't prefer online shopping as they don't get full satisfactory results. They have to go for different places, for different varieties, which takes their lot of time. To make their work easy, there will be an online portal/platform/website which will be providing all the information and updates regarding all stores and showrooms. This will help customers to get all the information related to any product/item according their needs at their own place, instead of roaming here and there.

In that they can search anything according to their need, get all the updates related to it like price, availability etc. And then they can also book that item for limited period of time. At the end they just have to Take decision and can go directly to that place and buy without any confusion and doubt, which they get while shopping online.

Android smart phone: Android is an open source platform founded in October 2003 currently developed by Google. A smart phone is an mobile phone with advanced mobile operating system which feature combine features of a personal computer with other features useful for mobile. Most smart phones can access the internet have a touch screen user interface can run app, music player.

Database: The shops database is designed using MYSQL. It provides interface with any database can be easily designed.

Inventory table - It provides information about the availability of the items, their unique id, product id etc.

Item table- It provides detailed information of each item from its manufacturing date, price, weight, etc.

Shop details- The customers information will be stored in this table including his address and phone number that will be used at the time of online payment.

Store details- This table will have detail information about the shops name, its branch and unique id that will be retrieved at the time of scanning of the shops barcode.

Final order table- This table maintains customer information about his purchases, total cost, session id and all those information that is required to generate a final bill.

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Web server: A web server is server which can connect one device to another that is active in the internet and establish communication between them. Web server uses common protocol for communication such as HTTP. Web service is required to establish communication between Android device and Shops database to exchange information.

Steps to perform this operation:

- 1 The client registers his account and create login id with password.XXXVII
- 2 Then send request to the web services.
- 3 The web services send this request to shop database.
- 4The shop database search the particular item from table and responds to web server with available information.
- 5 Next web services packed the item with related offers and send back to client.

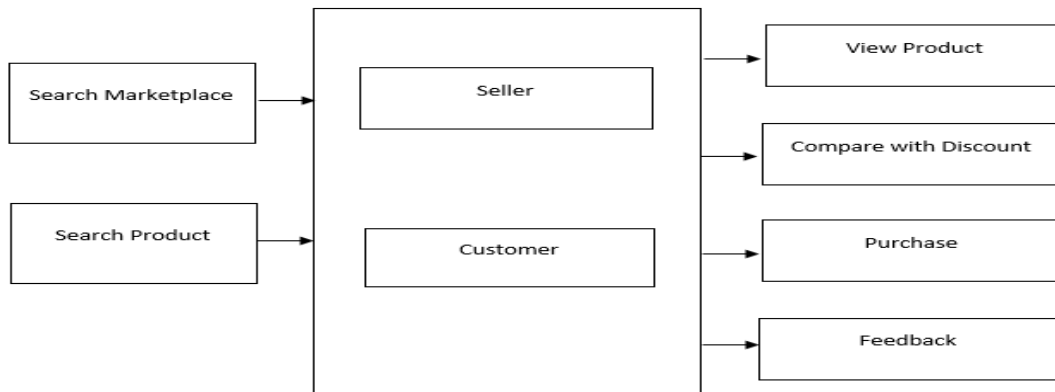


Fig1: Propose System

V.FLOWDIAGRAM AND ARCHITECTRE DIAGRAM

1) Flow Diagram:

In our system there are three models include. Admin model, seller model and customer model. After opening the home page, there will be a log in page. Where if we have registered, then we can directly log in by entering the email id/phone number and password .But we are a new user then we have to register first by filling personnel details.

Secondly, there will be a display of current offers and discounts. Then we can search the product as per our choice. After viewing different products we can also go to details of any particular product.Inlogin, seller, consumer, admin anyone can login.The working flow of their model is as follows:

A) Admin model:

First admin login into his account with emailed and password. Admin check the request came from seller, whether it is authorized or not. And then after verifying it, if it is valid then admin accepts the request or deny it. After accepting the request, seller is the part of the website and have to register can add his products and details. Admin shows both customer model and seller model data. In admin shows the pending seller request and it active or deactivate the seller account.

B) Seller model:

In seller model we can first login the account then add number of product and you add the product offer also. In seller model you can add all information about the product like product name, product price, product Id, product description. In seller model, seller deletes the product; remove the offer for particular product.

C) Customer model:

If he is a new user, then he has to register first after adding personaldetails. Otherwise he can directly login by email id or phone number and password. Then he can search his product according to his need and its details. And can

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also reserve the product for particular period of time. Consumer searches the product by nearby location and minimum price of product.

2) Architecture Diagram:

In this architecture diagram, there is client application tier and DB server is present.

Presentation Tier:

- This is the topmost level of the application.
- The presentation tier displays information related to such services as browsing merchandise, purchasing and shopping cart contents.
- It communicates with other tiers by which it puts out the results to the browser/client tier and all other tiers in the network.
- In simple terms it is a layer which users can access directly such as a web page, or an operating systems GUI

Application tier (business logic, logic tier, data access tier, or middle tier):

- The logical tier is pulled out from the presentation tier and, as its own layer.
- It controls an application's functionality by performing detailed processing.

Data Tier:

- This tier consists of database servers. Here information is stored and retrieved.
- This tier keeps data neutral and independent from application servers or business logic.
- Giving data its own tier also improves scalability and performance.

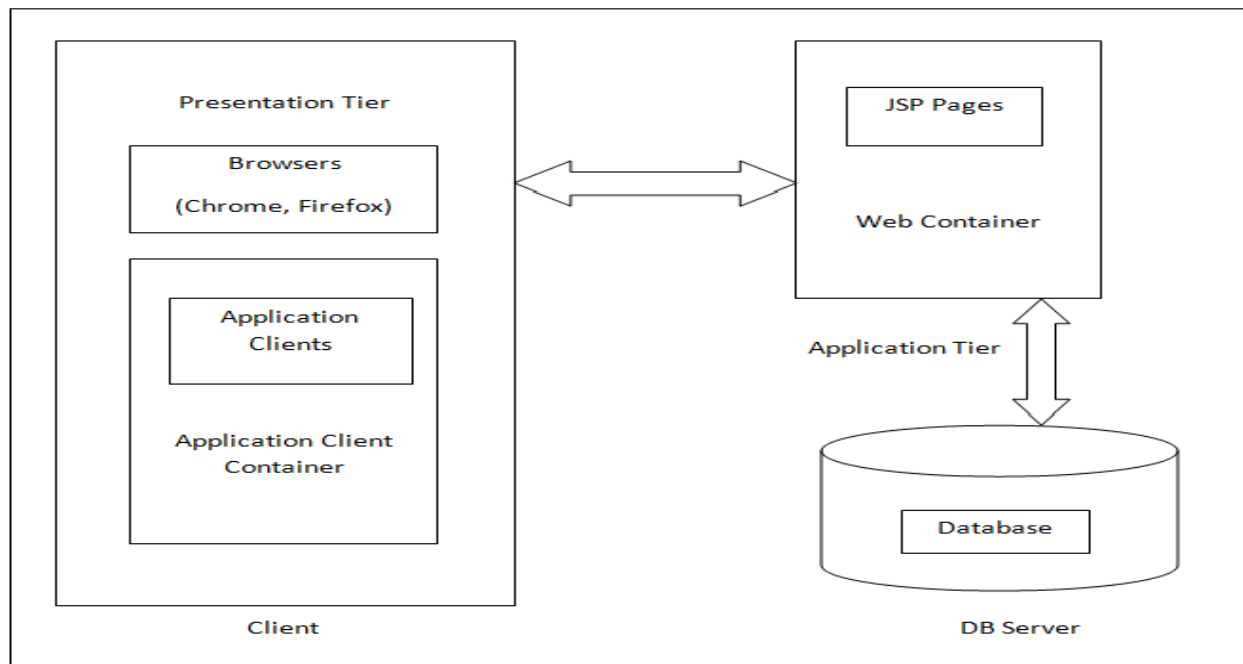


Fig2: Architecture Diagram

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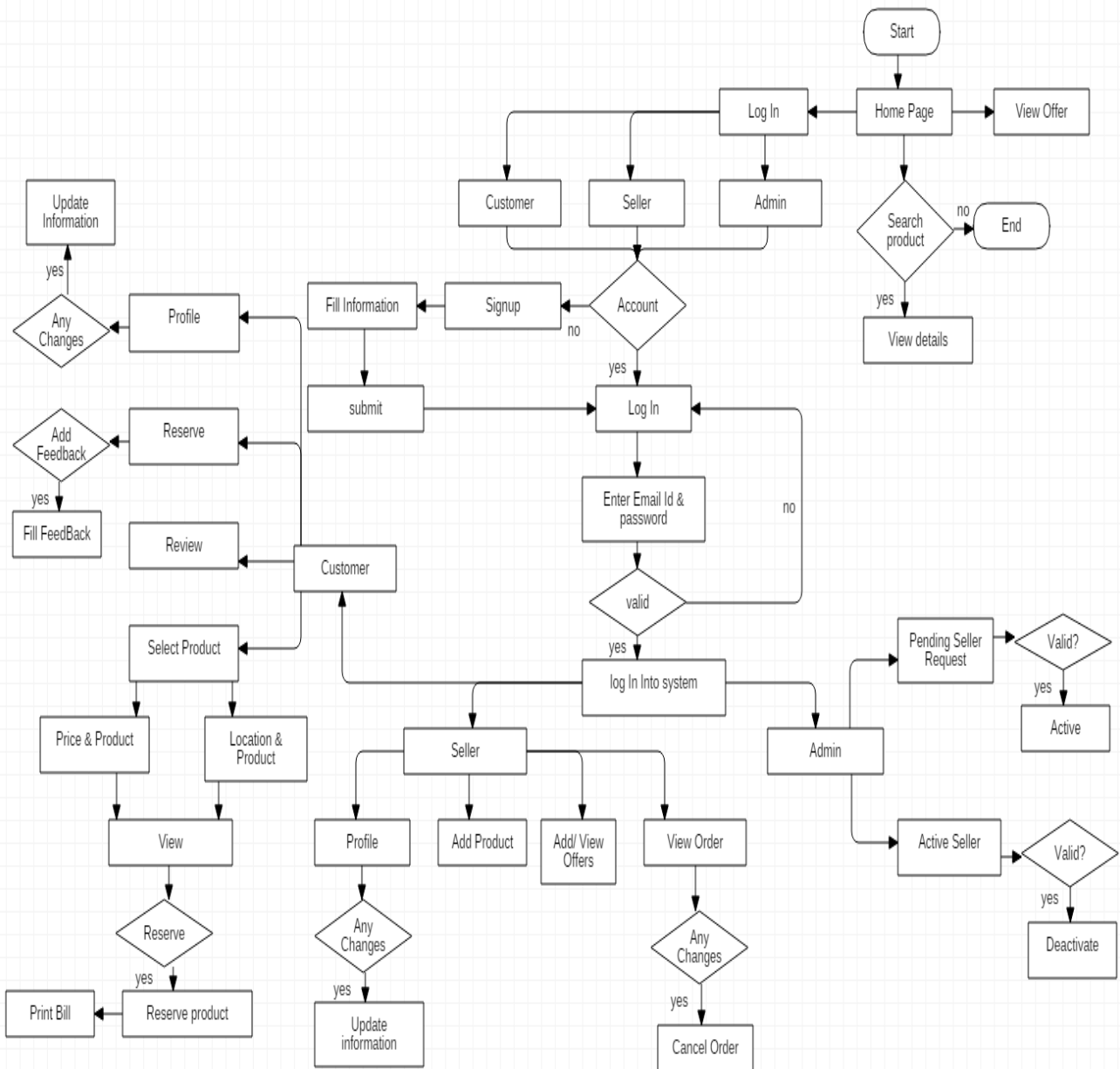


Fig3: Flow Diagram of System

VI SYSTEM IMPLEMENTATION

In our system we have manipulated the working by the online system. The system is going to design for management of all details of product, all register shop information. System can be used at public places like mall, shop etc. To increase the market level of showrooms, mall, small shops etc. online shopping related issues can be solved. Reduces the inconvenience of the user for shopping in rural areas. This can be useful for the tourists, students.



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In this system only authenticated person can able to login to application and manage all things. Login to your account if your account in our system. New user will register first, fill all information in system. Before login first page in our system is home page. In homepage about us means system information include, category of product, current offers on product this all information present.

Admin is the most important module in this system which can able to perform all the task like accept the request, shows the all pending request of seller, active the seller account and deactivate the seller account. Admin is responsible for maintain the data in our system for future use. After sell product to customer and if he have problem then he is able to make complain or take service from our system, then he can able to make a call for register shops.

Seller can able to perform task like add product, delete product, fill all information about product, view offers and add offers. Seller manage the all information of the product enters into the shops. Seller can add offers for particular product and remove the offers. Customer has profile in that all personal information is included. Customer can be able to perform task like search product, reserve product, give rating for product. Searching of product by price wise product and nearby location wise product.

Window 8/7 this operating system is used. Ram (Random access memory) is used more than 4gb. HTML and CSS used for user interface. In HTML, Hypertext is a simple text with some additional features, like the formatting of Images creating links to other documents. Mark-up the process of marking or adding text with some symbols and Language indicates that it is a language so as compared to another computer language. It is having its own set of rules. JavaScript is responsible for client-side scripting, which empowers the developers to write functionality to run on the user's client. It is very useful and powerful if the developers want to pre-process data on the client before submission to the server, this can reduce traffic over the network and offload processing from the server to the client. Since JavaScript is a Scripting language (not compiled) and runs primarily on the client. Most JavaScript used today is used to manipulate different aspects of the browsers. JavaScript uses an object-oriented programming (OOP) approach. A JavaScript object can be almost any elements of web documents such as the documents, tables, forms, buttons, and images. Each object has its own properties such as the history of the browser. History length contains the count of the items in the history list. Objects can do certain things known as methods.

For web application JDK, JSP, Servlets is used. Servlet is the technology is used in the java for the develop the distributed application. Servlet is basically used for the develop the internet application in the java. JSP is the Server-side Scripting technology in the JSP there is used inbuilt tag for the Development of the Java Server pages. In the JSP there is used the inbuilt Library for the Development. In the JSP there is used the scripting element for the development of the Distributed application.

A database is a separate application that stores a collection of data. Each database has one or more distinct APIs for creating, accessing, managing, searching and replicating the data it holds. Other kinds of data stores can be used, such as files on the file system or large hash tables in memory but data fetching and writing would not be so fast and easy with those types of systems. In contrast to master-slave architecture like HDFS, CFS is based on Cassandra, so the implementation is peer-to-peer and "masterless." A user is able to create a cluster that seamlessly stores real-time data in Cassandra, performs analytic operations on that same data, and also handles enterprise search operations. Cassandra's built-in replication transparently takes care of replicating the data among all real-time, analytic, and search nodes. A user may configure any type of cluster they desire.

CFS stores metadata information regarding analytics data in a Cassandra key space, which is analogous to a database in the relational database management system (RDBMS) world. Two Cassandra column families (like tables in an RDBMS) in the key space contain the actual data. The data contained in these column families is replicated across the cluster to ensure data protection and fault tolerance. The column families mirror the two primary HDFS services. The inode column family replaces the HDFS NameNode service, which tracks each data file's metadata and block locations on the participating analytics nodes. Captured information in this column family includes filename, parent path, user, group, permissions, file type and a list of block ids that make up the file. For block ids, it uses TimeUUID, so blocks are ordered sequentially in a natural way. This makes supporting HDFS functions like append () easy. The sblocks column family supplants the HDFS Data Node service that stores file blocks. This column family stores the actual contents of any file that is added to an analytics node. Each row in sblocks represents a block of data associated with a row in the inode column family. Each row key is a block TimeUUID from an inode row. The columns are time ordered compressed sub-blocks that, when decompressed and combined, equal one HDFS block.

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When data is added to an analytics node, CFS writes the static metadata attributes to the inode column family. It then allocates a new sblocks row object, reads a chunk of that data (controlled via the Hadoop parameter fs.local.block.size), splits it into sub-blocks (controlled via the parameter cfs.local.subblock.size), and compresses them via Google's snappy compression. Once a specific block is complete, its block id is written to the inode column family row and the sub-blocks are written to Cassandra with the block id as the row key and the sub-block ids as the columns. Reads are handled in a straightforward manner. When a query request comes into an analytics node, CFS reads the inode information and finds the block and sub-block(s) needed to satisfy the request.

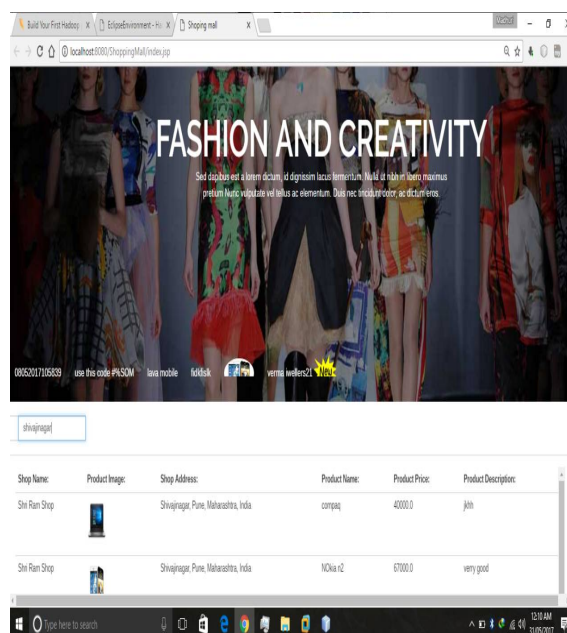


Fig4: Home page

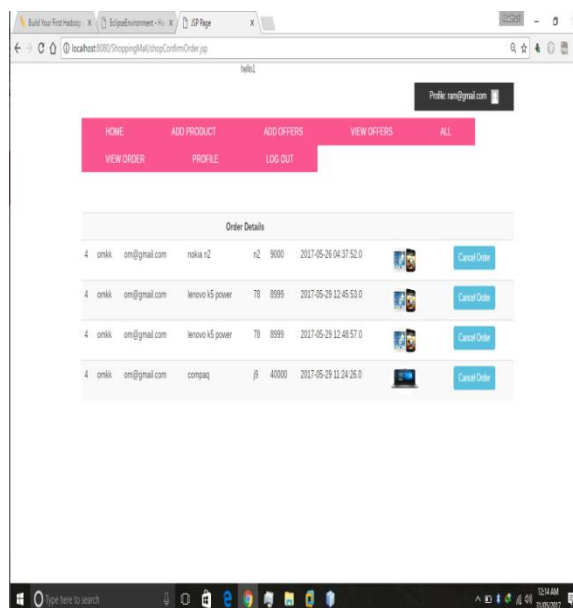


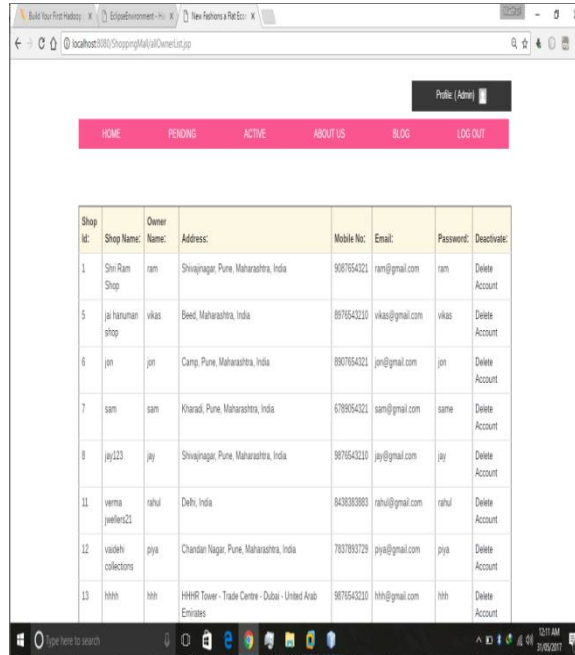
Fig6: Seller model

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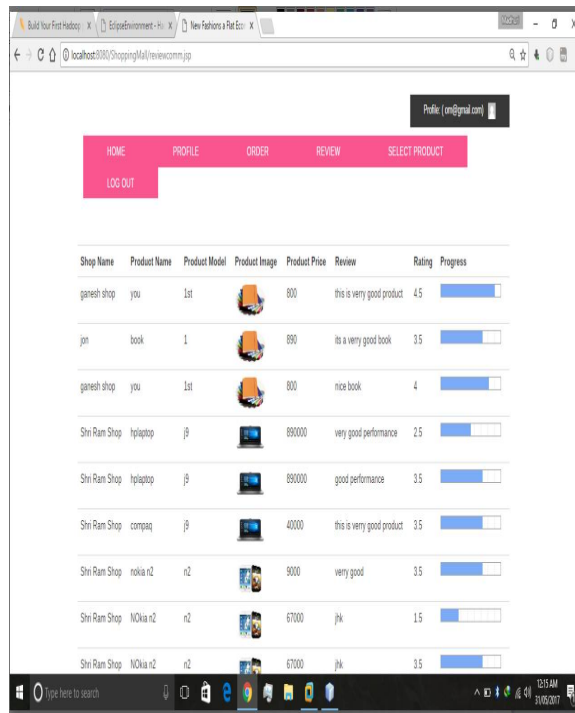
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Shop Id:	Shop Name:	Owner Name:	Address:	Mobile No:	Email:	Password:	Deactivate:
1	Shri Ram Shop	ram	Shivajinagar, Pune, Maharashtra, India	9087654321	ram@gmail.com	ram	Delete Account
5	ja hanuman shop	vikas	Deed, Maharashtra, India	8976543210	vikas@gmail.com	vikas	Delete Account
6	jon	jon	Camp, Pune, Maharashtra, India	8987654321	jon@gmail.com	jon	Delete Account
7	sam	sam	Kharadi, Pune, Maharashtra, India	678954321	sam@gmail.com	sam	Delete Account
8	jay123	jay	Shivajinagar, Pune, Maharashtra, India	9876543210	jay@gmail.com	jay	Delete Account
11	verma jwethers21	rahul	Delhi, India	8438383883	rahul@gmail.com	rahul	Delete Account
12	vaidhi collections	piya	Chandan Nagar, Pune, Maharashtra, India	783783729	piya@gmail.com	piya	Delete Account
13	hhhh	hh	HHHR Tower - Trade Centre - Dubai - United Arab Emirates	9876543210	hh@gmail.com	hh	Delete Account

Fig5: Admin Model












Shop Name	Product Name	Product Model	Product Image	Product Price	Review	Rating	Progress
gareesh shop	you	1st		800	this is very good product	4.5	<div style="width: 90%;"></div>
jon	book	1		890	its a very good book	3.5	<div style="width: 70%;"></div>
gareesh shop	you	1st		800	nice book	4	<div style="width: 80%;"></div>
Shri Ram Shop	hp laptop	j9		890000	very good performance	2.5	<div style="width: 50%;"></div>
Shri Ram Shop	hp laptop	j9		890000	good performance	3.5	<div style="width: 70%;"></div>
Shri Ram Shop	compaq	j9		40000	this is very good product	3.5	<div style="width: 70%;"></div>
Shri Ram Shop	nokian2	n2		9000	very good	3.5	<div style="width: 70%;"></div>
Shri Ram Shop	Nokia n2	n2		67000	jfk	1.5	<div style="width: 30%;"></div>
Shri Ram Shop	Nokia n2	n2		67000	jfk	3.5	<div style="width: 70%;"></div>

Fig7: Customer Model



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VII. CONCLUSION

Now as we conclude, instead of this growing trend of online shopping, still some customers are not satisfied. They buy products online, but they don't get what actually they thought of. There are always some issues regarding their quality, size etc. They invest still they don't get their exact thing. That's why they go outside themselves, to search for their need and get it after a long search. Therefore, by considering all this, there will be a portal, or we can say one platform where they will get all that which they were searching by going at different places. They will get all the information and updates regarding their search. As this portal will be containing the data of all the stores and showrooms. A big amount of data will be generated i.e. there will be Big Data. To handle all that, we will be using Cassandra concept and many more algorithms to search them and present them in a pleasant manner.

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