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Design And Development of An Android-Based Book Order System

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Abstract--- *An ordering system is a collection of elaborate procedures used to handle and manage the ordering process of resources. An online book ordering system is a system which allows customers to purchase books online from a seller's website. Such customers can search desired books and purchase it online; this study focuses on developing an e-commerce and e-transaction application for an online book sale, providing a catalog-like resource of different books available for purchase. For performance, a shopping cart is usually provided to allow more efficiency. Bookstore management is created to handle queries regarding information on different types of books. An android-based application for ordering books was developed. The system consists of two main subsystems: the administrator system and user system. The system, which was built using a private university in the North Central of Nigeria as a case study, is user-friendly, efficient and robust. The aim of the research is to study the shortcomings in the existing book order systems and provide an effective and efficient book order system for customers and the system will provide an environment where a customer is provided with a secure mode of operation and searching platform to access books online, develop an infrastructure accessible through the internet that can be used to order books and make payment for books bought and lastly the system will create a more user-friendly interface.*

Keywords--- *Android, Book Order System, Ordering System, Android based application, University, Customer*

I INTRODUCTION

A bookstore is a place or shop where books are bought and sold. Modern bookselling due to the advent of computers has changed impressively consisting of an online library of publications in stock often referred to as online bookstore (Wikipedia, 2019). Online shopping known as electronic commerce (sales and purchases), which gives potential customers the privilege to directly acquire goods and services from sellers online. Sometimes referred to as electronic retail (e-tail) also e-shopping. An online book ordering system is a system which allows customers to purchase books online from a seller's website (Wikipedia, 2019). A bookstore management is created to handle queries regarding information on different types of books. Satisfying such queries for information concerning titles, authors, publishers, price, modifications, and upgrade, in a central database. An online book order system should always be ready to fill in any order putting the customers need in mind having not just one copy of a book but varieties of books (Wikipedia, 2019).

The system consists of two main subsystems; the administrative and the user system. The administrative system provides budget administration managing the emails and sending notifications to involved parties in the purchase. While the user system consists of a web application system that allows the creation of book orders, every time a

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book is ordered it shows in the administrative system allowing the system administrator to confirm the order. It has a very large registry with lots of books ranging from old to new, academic to trade edition.

In the light of a private university in the north central Nigeria as the case study, the shopping system in the bookshops available on campus has been improved upon over time since the inception of the university but it still has some challenges that need the right tools of approach, which would on the long run improve the efficiency in the operating system of the bookshops. Some of the identified problems are as follows; Lack of convenience for customers, not available all through the day, tedious manual book searching method, waiting on a long queue for transaction (time consumption), unavailability of lower currency during transaction, lack of privacy during shopping and lastly inadequate security in terms of lager currency for transaction.

Therefore, due to the growth and expansion in modern technologies, the need of searching ways to acquire product with less effort, great ease and in the most cost-effective way becomes necessary.

II Literature Review

A bookshop is a place where books are sold, it offers varieties of books. It could also be an online interface and it can be used to promote eBooks (electronic books) (Wikipedia, 2019).

An online bookshop helps to display attributes such as book description, author's details (biography), book review, and make available your eBook directly to readers on the site using a shopping cart. An online book ordering system is system that features an interactive interface for users to place orders on books from the comfort of where they are. It is a system that allows customers to search for desired book(s) and purchase it online (Wikipedia, 2019).

Chang, Cheung & Lai. (2005) studied on categorization of variables, which drive online shopping activity. According to their study, features are divided into three main categories. First one is perceived characteristics of the web sale channel which include risk, advantage, online shopping experience service quality, trust; second category is web site and product characteristics which are risk reduction measures, web site features and product characteristics; and the last category clarified by authors is consumer characteristics. Consumer characteristics are driven by various types of features., consumer shopping orientations, demographic variables, computer, internet knowledge and usage, consumer innovativeness and psychological variables Consumer's characteristics are also studied by Kotler and Armstrong (2010) and they explain the way of the perception of the buyers, how they interpret and receive the stimuli from advertisements. According to Kotler and Armstrong (2010) the decisions of consumers are influenced by several characteristics and these characteristics are linked with the needs of the consumers.

Kau, Tang & Ghose (2003) stated that traditional shopping mostly has been chosen by older individuals (40 years old and above). Younger individuals usually have interest in using new technologies to search for information and evaluate alternatives (Monsuwe, Dellaert & Ruyter, 2004).

Smith & Rupp (2003) argue psychological factors of consumer behaviors in the online shopping context. Online consumers psychologically deal with themselves frequently questioning themselves. Motivation make consumers to ask themselves, should they look a better price or should they shop online more often and these kinds of questions. Perception is one of the important factor and make consumers examine the security of the web site or the quality of

the product Personal preferences manage consumers to decide. The fourth one is attitude and attitudes can change easily, therefore marketers are many interested in these features (Chen, 2003).

Huarng & Christopher, 2003, Another one is contact links, web site links related to the product or the service, which make individuals ensure about the decision. According to Armstrong & Kotler (2007) the effects of the Reference Groups are mainly based on the belief that many small groups influence a person's behavior. Family is one of this reference groups.

Smith and Rupp (2003) stated that different social classes create different behaviors. Consumers from lower social classes would not have the same properties such as higher intention to buy or higher probability like higher social classes.

Furthermore, Armstrong & Kotler (2007) discussed that culture set values and beliefs in the early ages therefore person's wants and needs are driven by this settled features. (Seda Yoldas "a research about buying behaviors of online customers." The Business School University of Roehampton 2011.

Bagmare, Girhepunje & Bisen, 2017 gave some online store websites and they are

- **Amazon.com:** It was established in the year 1994 and is the largest internet based seller in the globe by total sales and market
- **Snapdeal.com:** This is an India online store based in New Delhi. It currently has 275,000 sellers, above 30million products and 6000 towns and cities being reached across the world.
- **Flipkart.com:** This is an online store based in Bangalore, Karnataka and it was established in the year 2007 by Sachin and Binny Bansal.

Related Works

Bucko, Kakalejcik & Ferencova 2018 discussed elements that affect the buyers' readiness to procure products from the virtual store. The measures were estimated established on the choices customers make while acquiring products online.

Zhai & Lu, 2017 examined an online bookstore that will easily find information and aid purchase of books. The system developed was modest, user friendly, and to an enormous degree will unravel realistic difficulties in the purchasing of books. The limitation of the system was that it wasn't perfect even though it achieved some functions such as overcoming restricted diversity, static locality, inadequate space and limited transactions outlets.

Bagmare, Girhepunje & Bisen, 2017 projected an online book store that will permit clients to explore and procure books online established on its title, author and subject. The system provides information in a very speedy and systematic manner. The time for execution on the information is very fast. The client is able to use the website to obtain a book online which is far better than going to purchase books from physical bookstore and this can lead to time wastage.

Deshkar, Betawar, Amale, Harode, & Jasiwal, 2016 examined a system an android management system which is an application for monitoring and controlling the transaction in Information Technology department library. The system helps in handling a tedious task which is involved in sorting, lending, returning, tagging and eyeing of books. It also handles the problem of finding, borrowing, localizing, renewing the borrowing, queuing and so on.

Bogle & Sankaranarayanan, 2012 proposed a system that involved the establishment of an employee, employment hunt and company agents that will utilize fuzzy preference rules to decide a proper list of professions founded on the user's pursuit benchmarks and also relate the assessment of the employer centered on responses presented by the previous and existing workers which are exceptional and foremost of its kind.

Muzumdar applied the essentials of business dealings, integrating them into a prototypical to explicate their outcomes on diverse methods of textbook auction. The research also utilized conceptual tactic in elucidating the effect of benefits and drawbacks of each medium on transactions occurring through it. The author concluded by describing the concept behind the development of online medium once being likened with some different methods.

Chen & Feng, 2015 suggested 3 layers architecture of an online bookstore system designed. The first layer was on research process and exploration, the second layer compared the advantages and disadvantages. The 3 layers architecture thought is of divide and conquer.

Emelia & Sharifah, 2010 considered a system that will grant students and lecturers access to an online bookstore and also grant them access for reading and using books without visiting the physical bookstores. The method used was survey approach and the study helped to improve the manual procedure of accessing bookstores to be carried out automatically.

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III SYSTEM DESIGN

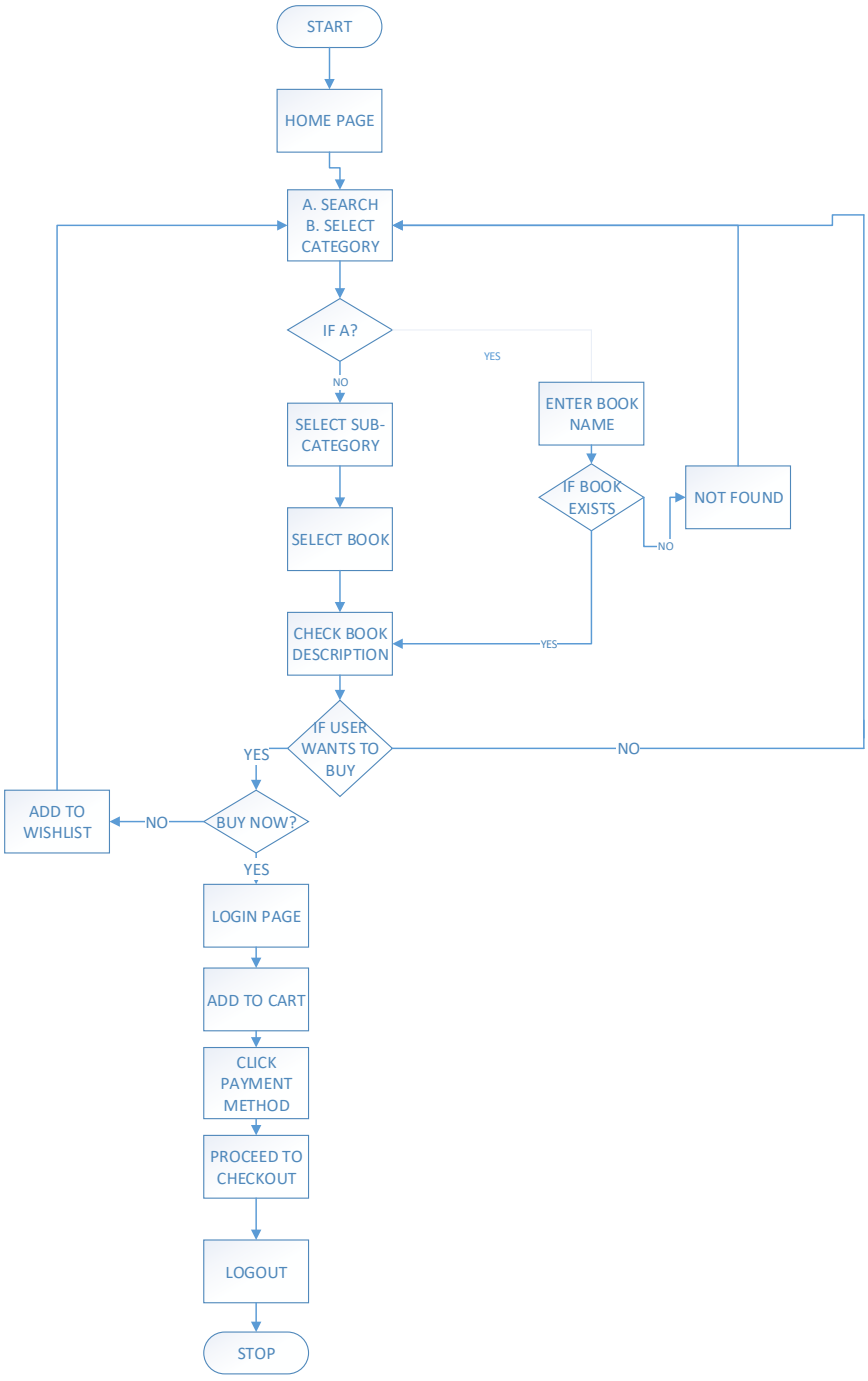

Figure 1: Developed System Flowchart.

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	id	int(4)			No	None	AUTO_INCREMENT	Change Drop Primary Unique Index Spatial Fulltext More
2	title	varchar(100)			No	None		Change Drop Primary Unique Index Spatial Fulltext More
3	author	varchar(100)			No	None		Change Drop Primary Unique Index Spatial Fulltext More
4	price	int(100)			No	None		Change Drop Primary Unique Index Spatial Fulltext More
5	quantity	int(100)			No	None		Change Drop Primary Unique Index Spatial Fulltext More
6	subcategory	varchar(100)			No	None		Change Drop Primary Unique Index Spatial Fulltext More

Figure 2a: MySQL Database for the Developed System

	id	title	author	price	quantity	subcategory
Edit Copy Delete	44	blackberry usb cable	blackberry	400	12	accessories
Edit Copy Delete	41	samsung mini charger	samsung	3000	8	accessories
Edit Copy Delete	42	acer mini charger 19vlts	ACER	3500	10	accessories
Edit Copy Delete	43	beats by dre headsets	beats audio	22500	10	accessories
Edit Copy Delete	20	agricultural economics	desai	1350	11	agriculture
Edit Copy Delete	21	agricultural economics	s subba	2600	15	agriculture
Edit Copy Delete	28	heat and mass transfer	DR D S Kumar	3000	10	architecture and engineering
Edit Copy Delete	27	advance engineering mathematics	kreyszig	4000	10	architecture and engineering
Edit Copy Delete	29	remote sensing- principles and application	panda	1500	10	architecture and engineering
Edit Copy Delete	30	advanced control system technology	chessmond	750	12	architecture and engineering
Edit Copy Delete	1	Soaring with eagles	Kenneth Hagin	400	0	body
Edit Copy Delete	6	The mind of success	Micheal Brailmoh	500	20	body
Edit Copy Delete	5	Rules of engagement	Derek Prince	700	10	body
Edit Copy Delete	4	The rules of engagement	Cindy Trimm	700	5	body
Edit Copy Delete	3	The believers authority	Andrew Wommack	700	0	body
Edit Copy Delete	2	Soaring with eagles	Bill Newman	600	3	body
Edit Copy Delete	17	introduction to business	NWOSU C	1500	17	business and economics
Edit Copy Delete	19	GLOBAL ECONOMICS 2011	carbaugh	3250	23	business and economics

Figure 2b: MySQL Database for the Developed System

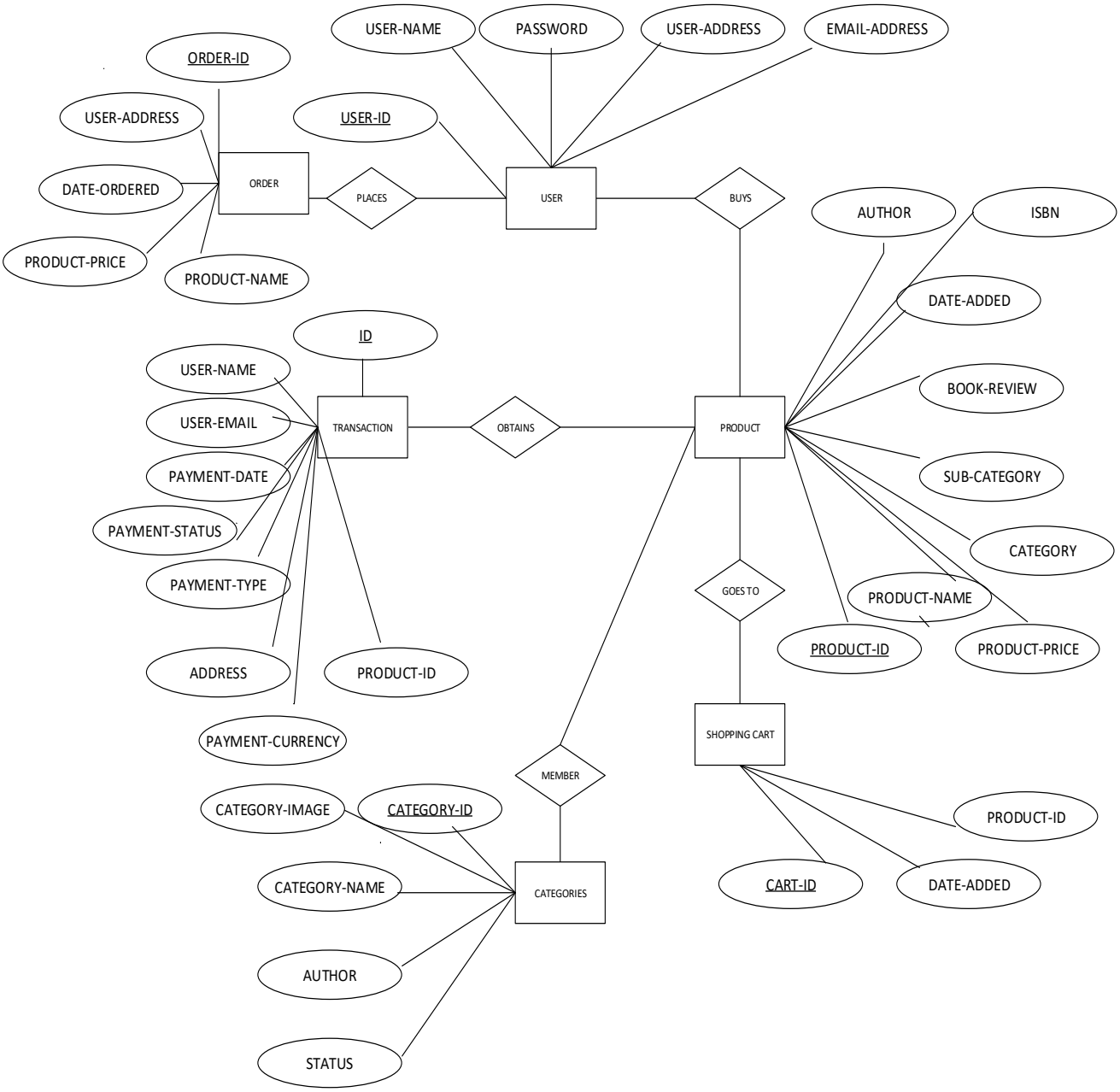

Figure 3: Entity Relational Diagram

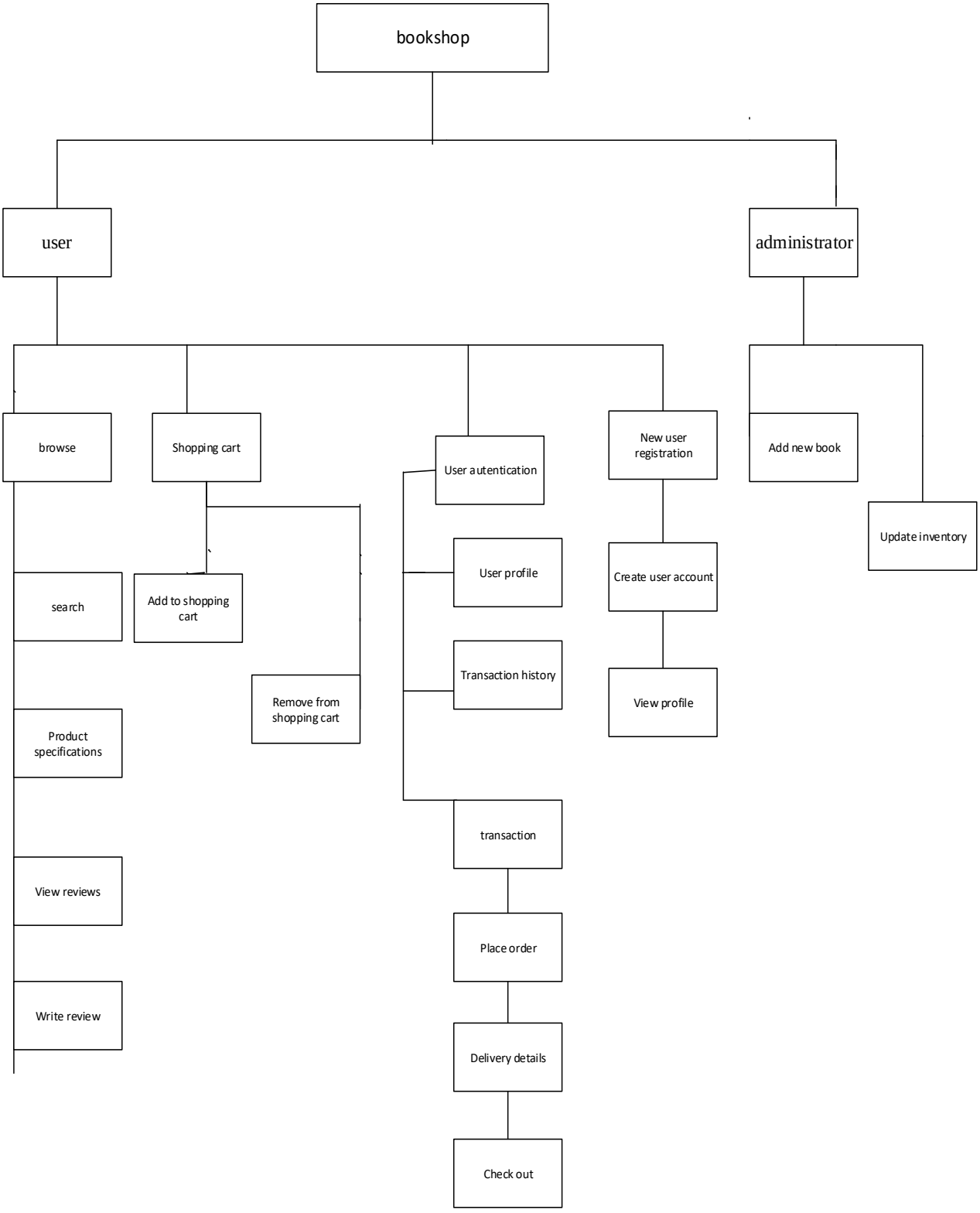

Figure 4: Decomposition Model for the Proposed System.

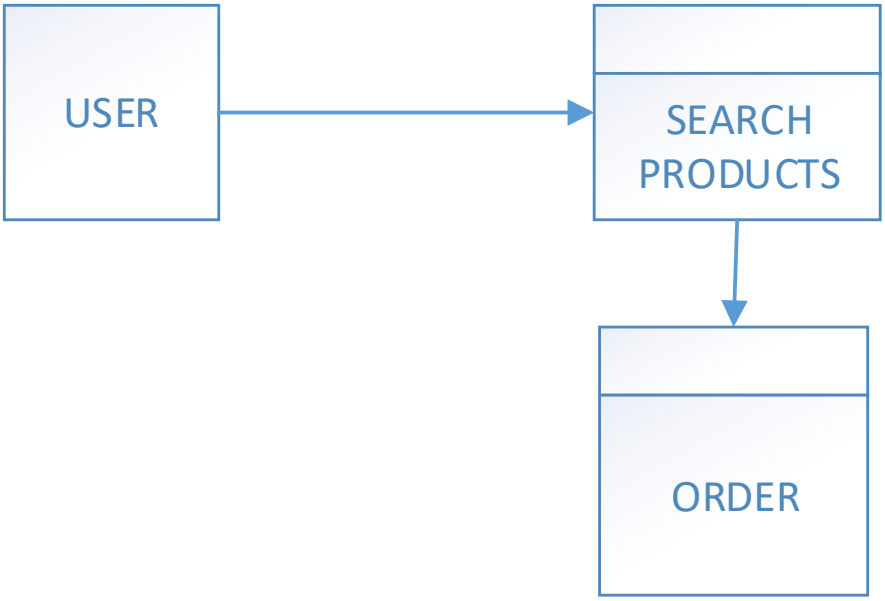

Figure 5: First level DFD

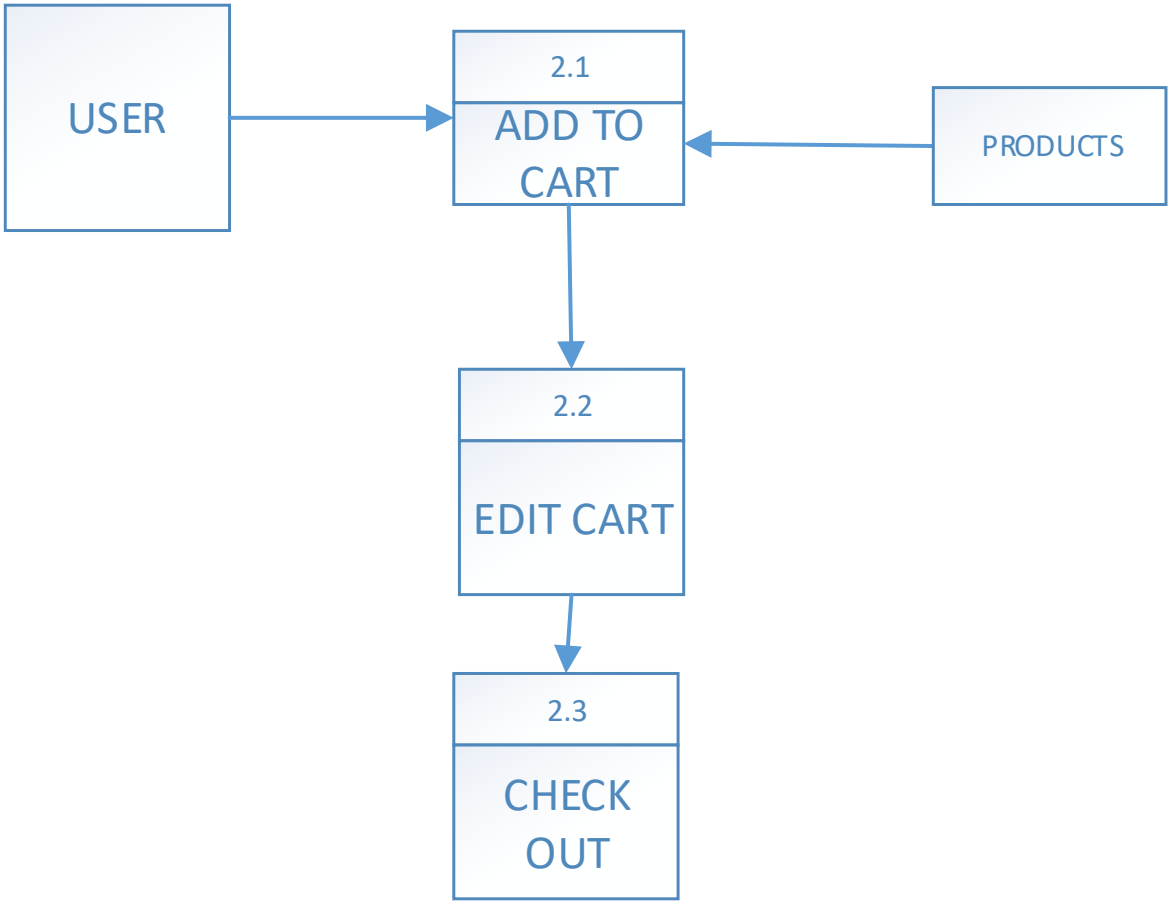

Figure 6: Second Level DFD

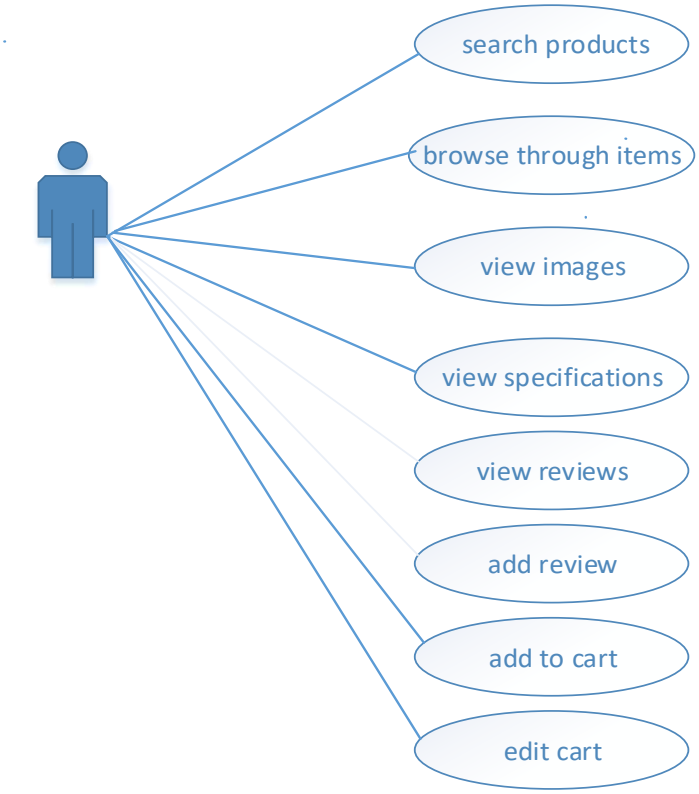

Figure 7: UML Use Case

IV FINDINGS AND DISCUSSION

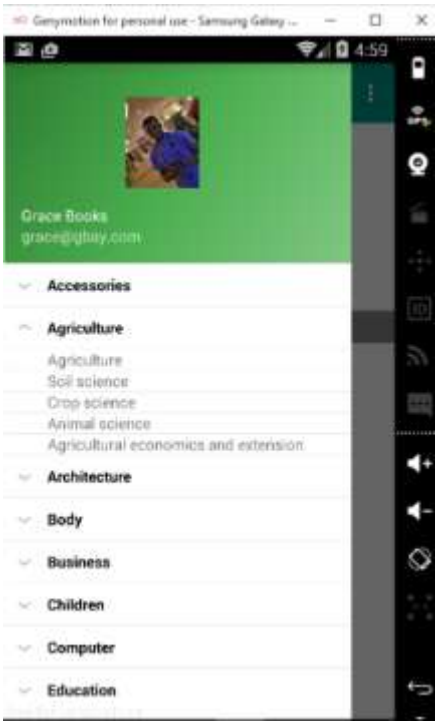

Figure 8: Home Page

Figure 8 above showed the home page of the application revealing categories and sub-categories, also on this page users can search for items that are available in the bookshop. It also links the user to the login and sign-up page.

Figure 9: Search Page

The figure 9 above displayed the result from the search conducted by the user, it provides user with an option to view the product details, it gives specific details of the item, its author, price and edition.

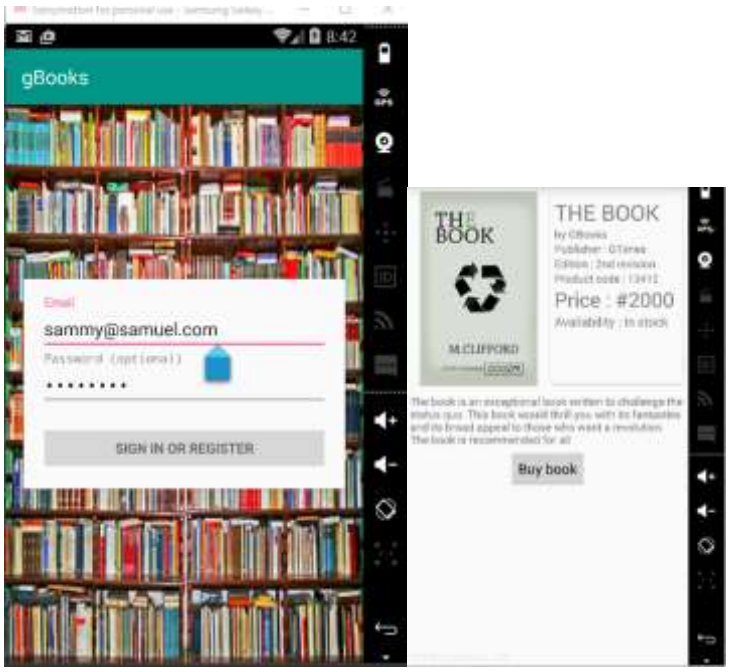

Figure 10: Login Page

Figure 10 displayed the page that will allow users to enter their details to have access to the system application collecting user details and validating it to a database.

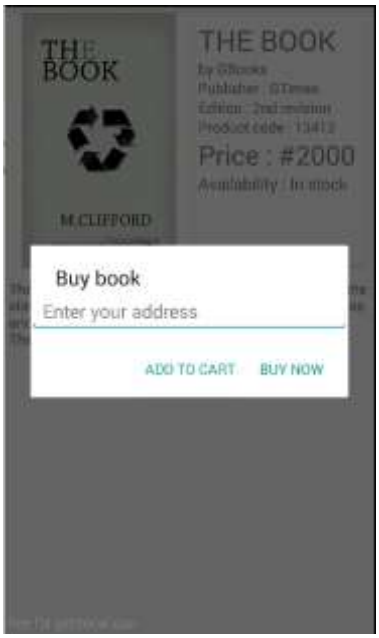

Figure 11: Add to Shopping Cart and Purchase Page

Figure 11 displayed the add product to cart page allows user to add interested product to a shopping cart, on this page user can specify the quantity of the product they select and proceed to adding them to the cart. It also displays the purchase page. It gives logical information concerning a particular item. and provides options on whether to purchase now or add to a shopping cart.

V CONCLUSION

The advantages the book order system cannot be over-emphasized. The system was developed such that it can manage products in a bookstore that is user-friendly and easily accessible. With this system users can add products to a product to a shopping cart anywhere, anytime and purchase products at ease.

VI RECOMMENDATIONS

The following suggestions are recommended to further improve the system.

- Implementation with other platforms and operating systems such as the IOS and windows platforms.
- Development that allows exchange of books
- Cloud based implementation

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VIII CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

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