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“ ____ ” _____ 2018

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“ ____ ” _____ 2018

DEVELOPMENT OF WEBSITE FOR COMMERCIAL LINES

GRADUATE QUALIFICATION WORK

SUSU–02.04.02.2018.308-578.GQW

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“ ____ ” _____ 2018

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ACKNOWLEDGEMENTS

First of all, I would like to express my sincere gratitude to my supervisor, Senior Lecture K.Yu. Nikolskaya for her invaluable comments, encouragement and endless support during the preparation of the present thesis.

Thanks, are also due to the staff of the Dept. of the College Computational Mathematics and Informatics, University of South Ural State University for their help in different ways.

At last but not least, my love to my family, wife (Rania) for her outstanding efforts and her encouragement, father and his kindly support, mother and her love and my daughter (Dima) in her endurance is endless, I would also like to thank my friends for their support and help me.

INTRODUCTION

Technology has incredible power to improve people's lives, foster economic growth, and create opportunities for individuals, companies, and nations around the globe [18].

In 2015, the National Statistics site confirms site sales of £215 billion contributed 40.4 % to the total e-commerce sales in 2015 for businesses an increase from 36.2 % in 2014. Internet access for UK household shows an increase of 36 percent since 2002 and Internet sale records annual increase of 29.1 percent in 2005. In 2015 83 % of all enterprises have internet access, 80 % of all companies use fixed broadband connection and 55 % used a mobile broadband internet connection [15].

Internet trade – implementation process of physical and nonphysical goods by means of the specialized electronic platforms providing distant design of the order. Internet trade in Russia develops rather successfully.

Research verify businesses do not normally intervene in the development process. They are mainly concerned with achieving their goals within time and budget. Therefore, quality of websites falls on the shoulders of developers. Some novice developers use the ad hoc approach. Websites of that category, on average, launch quickly but sacrifice flexibility, scalability and maintainability. Such inflexible and expensive to maintain websites offer little benefit to the ever-changing businesses and users' needs in the long run [9].

Following the results of researches of the market of Internet trade in Russia sales volume permanently increases as increases the number of shops of electronic trading. The size of the market of Internet trade following the results of 2016 exceeded 537 billion and over the last 5 years grew on average for 42,2 % a year. Experts of J'son& Partners Consulting considered 172 companies in 20 segments of Internet trade. The largest segments are "Household appliances and electronics" (125,5 billion), "Hypermarkets" (85 billion) and "Clothes and footwear" (74,2 billion). According to the experts J'son& Partners Consulting, the

market of Internet trade of Russia following the results of 2016 made 537,4 billion or 26 % of the common market of electronic commerce.

Average growth of the market (CAGR) in 2013-2016 was equal to 42,2 %. Despite the amplifying crisis in area the Internet of commerce still, though with smaller rates is watched sustainable development.

The economic crisis pushes sellers to online trade development. High costs of traditional sales from a counter because of high rental rates, expenditures on a staff, etc. and also change of consumer behavior affect: more and more Russians before purchase look for cheaper goods on the Internet.

E-commerce shop – the highly effective and low-cost tool for successful business. Unlike normal shop, the e-commerce shop is open 24 hours a day, 7 days a week, is available to any user in an every spot on the globe and does not require financial costs of tenancy, considerably reduces costs for a staff.

The e-commerce shop combines the low cost and high performance: creation of an e-commerce shop helps the company to win or strengthen the line items on commodity market and services, to increase a client basis and to increase popularity of a brand. In other words, creation of an e-commerce shop makes for owners real profit.

The good e-commerce shop is not only shop with well structured and interestingly described range, not only high quality of service of his clients, this also attractive external design, from convenient navigation and a search engine to the intuitive and clear system of orders, this set of trifles and features which help the client to make a purchase are a warranty of the fact that the client will surely visit this e-commerce shop again and again.

Research object: development process and implementations of the platform for Internet sales.

Operation subject – development process and advances the Internet - shop selling goods.

The purpose of the degree project is development the Internet – shop of selling goods.

For achievement of a goal it is necessary to solve the following problems.

1. To carry out the analysis of the modern building tools of E-commerce shops.
2. To give the technical and economic characteristic of activities of "Goods".
3. To describe the processes existing business and to reveal need of their automation.
4. To select a complex of tasks of automation and the strategy of development the Internet – Goods shop.
5. To give reasons for project decisions.
6. To explicitly describe the project of project development the Internet – Goods shop.
7. To give reasons for economic efficiency of the project.
8. To implement the project on the Internet.

The theoretical and methodological basis of a research is made by the modern theoretical concepts and practical development of domestic and foreign authors on problems of development of e-commerce shops and uses of the modern information technologies in a distribution system.

In case of the solution of objectives in the course of operation methods of the logical, systems, financial and economic analysis, statistical techniques and also methods of collection and data handling were used. A basis of a research was the general scientific methodology providing a systems, integrated approach to the solution of problems.

The practical significance of results of a research is that the basic provisions making novelty of the degree project are brought to specific recommendations about formation of strategy of trade enterprise in development of an e-commerce shop.

Thesis consists of introduction, four chapters, the inference, the list of the used sources and literature.

Research goal and objectives

The goal of the research is the development of website for commercial lines.

For the reaching this goal we must achieve following objectives.

1. Analyze the subject area.
2. Analyze of modern tools that used for development web application and choose tools for project development.

3. Design the system.

- a. Design the system function requirement by using use case diagram.

- b. Design database scheme.

4. Implement the system (coding).

5. Test the system.

The practical significance

This project useful, because it contains important features to assist online:

- 1) allow every register user to buy and sell items;
- 2) every register user can edit his added items to the system;
- 3) ensuring that there is no duplication when viewing items, by not allow duplication when register user add new items;
- 4) including the individual identification at the site for all users;
- 5) easily dealing with the site for its friendly-User Interface design that characterized by simplicity, consistency and use common elements;
- 6) unlimited number of users could access the application;
- 7) ability for the following development of the web application.

Structure of the thesis

The thesis comprises of four chapters, introduction, conclusion and reference list.

In chapter one, the analysis of the subject area is represented that's include domain of problem. Also, there is the overview of what are the best current web development technologies, which we used to develop the project, differences between PHP and ASP.NET.

In chapter Two, there is a description of functional requirements, non-functional requirement use case diagram, database scheme and the design the application interfaces.

In chapter Three, we show several fragments of PHP-code for implementing the basic functionality of the system and deployment diagram for the system.

Chapter Four is devoted to the functional testing of the application.

The thesis has 53 pages; the list of references contains 20 resources.

1. THE ANALYSIS OF THE SUBJECT AREA

1.1. The problem statement

The electronic shop can be considered as application-oriented system which is constructed as an element of technology of system of electronic commerce. Like normal shop, the electronic shop realizes the following basic functions: representation of goods (services) to the buyer, processing of orders, sale and delivery of goods [2].

On the Internet other determination of this concept, more primitive, – the website trading in goods and services on the Internet often meets. The electronic shop allows users to create the order for purchase, to select a payment method and deliveries of the order from the Internet [6].

The principal difference of Internet shop from normal shop is its layout and the organization of interaction with the buyer, use of the Internet for implementation of all possible operations.

Provider of electronic commerce. For online stores there is a row of special concepts, such as provider of electronic commerce – the organization, providing services in implementation of a business activity on the Internet.

Fixed assets of payment on the Internet are credit cards and electronic cash, so-called electronic money. As providers of systems of electronic commerce the firms which are tightly connected to banking structures and about the Internet – providers appear. The number of providers of electronic commerce dynamically increases in our country [8].

As any system of commerce electronic commerce is directly connected to costs of development and the maintenance of Internet shop. Costs of creation of system of electronic commerce or some Internet shop depend on many factors: nature of commerce, sizes and financial resources of the organization, equipment of the organization by an ADP equipment and opportunities of Internet connection, presence of staff of programmers.

Among the most relevant costs of creation and advance of an e-commerce shop it is possible to select the following components.

1. The hardware (the good server with good communication links is necessary).
2. The software (use of free systems is possible, but development of structure and attending cost rather much).
3. Marketing expenditures (promotion of shop, only paid systems will allow to advance shop on the first pages of search engines).
4. Expenditures on attending of system (maintenance of an additional staff, training, maintenance of operability of the server).
5. Large E-commerce shops have the representations (offices, warehouses, stationary trade) platforms in all large cities therefore their contents also is added to expenses.

The e-commerce shop can be considered from two sides as separate independent commercial unit and as continuation of a business activity of stationary shop on the Internet that increases spanning of clients for the score the Internet of users [11]. It is necessary to mark that today splicing of systems of normal and electronic commerce with dominance in one of the sides, depending on a look and activity is watched.

The Internet the buyer has no opportunity to examine directly with goods or its sample in case of signing of the contract, the virtual trade belongs to a distant method of sale of goods. Sale of goods through an e-commerce shop happens based on the retail contract of purchase and sale signed between the seller of goods and the buyer.

The information on goods posted on the website of the seller, containing all essential terms of the contract of retail purchase and sale is recognized as the public offer. Therefore, the seller is obliged to sign the contract with any person which expressed intention to acquire the goods offered in its description. And to sign such contract with each buyer it is not mandatory at all.

Electronic shop basic functions. The electronic shop (the virtual shop, online store) can be considered as application-oriented system which is constructed as an element of technology of system of electronic commerce. Like

normal shop, the electronic shop realizes the following basic functions: representation of goods (services) to the buyer, processing of orders, sale and delivery of goods [2].

The electronic shop allows users to create the order for purchase, to select a payment method and deliveries of the order from the Internet [6]. The main difference of electronic shop from normal shop is its layout and the organization of interaction with the buyer, use of the Internet for implementation of all possible operations.

The e-commerce shop is considered as more acceptable and complex, in too time, difficult in implementation, the system of Internet trade which envelops all main business processes of trade organization.

In comparison with an Internet show-window, the e-commerce shop offers the buyer personal service, the flexible system of discounts, implementation of the fact of sale with payment or without it, directly to draw up the account taking into account the cost of delivery, a type of payment and an insurance, tax assignments. Application of this model, unlike normal malls, helps to reduce expenses, by reduction of commodity inventories in warehouses.

In an e-commerce shop in case of customer support the role of the manager, in a traditional sense, is not necessary, the manager is considered as the consultant and can be, both explicit, and hidden, put in the description of goods, and orders are processed automatically.

In e-commerce shops most often use the system of a business organization of B2B, B2C is more rare. Depending on the used model of business distinguish two options of creation of an e-commerce shop: - online shop (there are no traditional retail chain stores); combination of offline business with online (creation of an e-commerce shop on the basis of operating real shop).

Shops of the second type have advantage. Such combination adds new features to both types of business: - the e-commerce shop offers option of receiving goods in the selected shop, unlike purely on-line shop it has no problems in case of return of goods; - buyers of offline shops can get acquainted before-

hand with the commodity range and characteristics on the website, and then to come to the nearest real shop.

Also, e-commerce shops classify by existence of commodity inventories:
– working under contracts with suppliers; – having own warehouse economy.

The first model of operation is based on electronic mediation of the virtual trade enterprise between vendors or distributors of goods and retail customers.

More attractive, in comparison with on-line competitors, the prices can be explained with absence of costs of acquisition or rent, contents and the 13th equipment of trade locations and warehouses and also low level of expenditures on a staff.

The second type of e-commerce shops – those who have own warehouse and commodity inventories. It can be the organization (Internet subdividing) of offline trade and service or product company.

The diagram of interaction between the seller and the buyer in this case almost does not differ from the first model. A difference only that here the shop operates with goods of own warehouse, but not a warehouse of the supplier and we depend on external factors less.

1.2. The best current web development technologies

Web technologies like programming languages, frameworks, web crawlers, content management services and more, can be distributing according these categories.

1. Browsers are the interpreters of the web. They request information and then when they receive it, they show us on the page in a format we can see and understand.

1.1. Google Chrome – Google's web browser.

1.2. Safari – Apple's web browser.

1.3. Firefox – Mozilla Foundation web browser.

1.4. Microsoft Edge – Microsoft's browser.

2. HTML (Hypertext Markup Language). Is a presentation markup language for describing web documents, it provides structure of a website so that web browsers know what to show.

3. CSS (Cascading Style Sheet). “CSS” let's web designers change colors, fonts, animations and transitions on the web, they make the web look good.

4. Programming languages are ways to communicate to computers and tell them what to do.

5. Frameworks are built to make building and working with programming languages easier. Frameworks typically take all the difficult, repetitive tasks in setting up a new web application and either do them for you or make them very easy for you to do like.

5.1. WordPress - a CMS (content management system) built on “PHP”. Currently, about 27,3% of all websites run on this framework.

5.2. .NET – a full-stack framework built by Microsoft about 15.3 % of all websites run on this framework.

6. Libraries (packages) are collections of code snippets to enable a great deal of functionality without having to write them all on your own like “jQuery”.

7. Web servers and server products is any computer which hosts a website is called a web server. A web server is linked directly to the web and on requests from a client, sends the hosted web pages to them using the hypertext transfer protocol “HTTP”. If you want to host your own website through an internet service provider (ISP), a web presence provider “WPP”, or a web host provider (WHP), you may have access to several different sorts of web servers. The most well-known web servers at present accessible are.

7.1. Windows-based servers running Microsoft Internet Information Services (IIS).

7.2. UNIX-based servers running Apache.

7.3. Open source server running NGINX the fast-growing server.

8. Databases are where all your data is stored. Databases come mainly in two types: SQL and NoSQL. SQL provides more structure which helps with making sure all the data is correct and validated. NoSQL provides a considerable measure of flexibility for building and maintaining applications.

8.1. MongoDB - is an open-sourced NoSQL database and is currently the only database supported by Meteor.

8.2. MySQL – is another popular open-sourced SQL database. MySQL is used in WordPress websites.

8.3. Oracle - is an enterprise SQL database.

8.4. SQL Server - is an SQL server manager created by Microsoft.

9. Client is one user of an application. It's you and me when we visit <http://google.com>. Clients can be desktop computers, tablets, or mobile devices. There are typically multiple clients interacting with the same application saved on a server;

10. Front-end is comprised of “HTML”, “CSS”, and JavaScript. This is how and where the website is shown to users.

11. Back-end is involved of your server and database. It's the place where functions, methods, and data manipulation happens.

12. Protocols are standardized instructions for how to pass data forward and backward among computers and gadgets.

12.1. HTTP (Hyper Text Transfer Protocol) – This protocol is how each website gets to your browser. Whenever you type a website like “<http://google.com>” this protocol requests the website from Google's server and then gets a response with the “HTML”, “CSS”, and JavaScript of the site.

12.2. DDP (Distributed Data Protocol) – is a new protocol created in connection with Meteor. The DDP uses web sockets to create a consistent connection between the client and the server. This constant connection let's websites and data on those websites update in real-time without refreshing your browser.

12.3. REST (REpresentational State Transfer) – is a protocol mainly used for API's. It has standard methods like “GET”, “POST”, and “PUT” that let data be swap between applications.

13. API is an application programming interface. It is created by the developer of an application to allow other developers to use some of the applications functionality without sharing code. Developers expose “end points” which are like inputs and outputs of the application. Using an API can control access with API keys. Examples of good API’s are those created by Facebook, Twitter, and Google for their web services.

14. Data formats are the structure of how data is stored like XML [8].

1.3. Technology used to develop the project (software requirement)

In point 1.2 page 15 we discuss what are the most of web technology’s that we have these days. table 1 list’s all software utilized for development of this application.

Table 1. Software Requirement

Name	Purpose
ADDOBE DREAMWEAVER CC	Developing an web application by utilizing “PHP and MySQL”.
APPSERVER : Contains	
1.Apache24	It is make my laptop as local host server
2.MySQL	Database development environment.
Software Ideas Modeler	Platform for UML diagrams design.

1.4. Apache http server

The Apache Http server is an open source web server software which is an established standard in the online distribution of website services, which play a key role in the initial growth of the World Wide Web, it has been developed by an open source community-Apache software Foundation. The server is aimed at

servicing a great deal of widely popular modern web platforms/operating systems, including Unix, GNU, FreeBSD, Linux, Solaris, Novell NetWare, Mac OS X, Microsoft Windows. It released under the Apache license [8].

1.5. MySQL

The MySQL database has consistent fast performance, high reliability and ease of use. So it has become the world's most popular open source database. It is used on every continent; by individual Web developers as well as many of the world's largest and fastest-growing organizations to save time and money powering their high-volume Web sites, business-critical systems and packaged software [7].

1.6. PHP

PHP is the most widely accepted and used programming language. That is especially suited for Web development and can be embedded into HTML. Its syntax draws upon C, Java, and Perl, and is easy to learn. The main goal of the language is to allow web developers to write dynamically generated web pages quickly [17].

1.7. Differences between PHP and ASP.NET

The most essential difference between PHP and ASP.NET is that PHP is a programming language and ASP.NET is a development platform. Approximately 1/3 of the web applications in the world are written in PHP at present. Most of these PHP programs run on an Apache server. As a programming language, PHP is independent of the operating platform. In contrast to PHP, ASP.NET is a platform rather than language. The ASP.NET program not only can be written in C#, but also can be written in any language which was compiled to runs on .NET CLR. Usually, ASP.NET runs in Windows platform and IIS server. In this sense, the difference between PHP and ASP.NET, like iPhone and Widows 7. Choose one of them, is equivalent to choose a style [8].

ASP.NET consumes very large in terms of memory usage and execution time, due in a long code path. For web-based applications, these limitations would be a serious problem, because on the web, application may be extended to thousands of users per second. Memory usage may also become a problem on the Web server. On the other side, obviously the advantages of ASP.NET depend on its simple design and implementation. This is the dream of object-oriented programming: Language flexible and support to complex object-oriented features. In this sense, it could be able to interoperate with the existing skills of programmers. Another advantage of ASP.NET is the development environment. For example, developers can use WebMatrix (a community-supported tools), Visual Studio .NET or Borland tools (such as Delphi and C++ Builder). Visual Studio allows programmer to set breakpoints, tracking code snippet and view the call stack. All in all, it is a complex debugging environment. Many other third party of the ASP.NET IDE solution also will inevitably arise in the future. This project used ASP.NET as development platform rather than PHP because the environment of Microsoft (Windows + ASP.NET + SQL Server + Visual Studio 2010) is convenient than LAMP (Linux + Apache + Mysql + PHP), and it is oriented-object programming [13].

2. DESIGN OF MANAGEMENT INFORMATION SYSTEM FOR ONLINE SHOPPING

2.1. Functional requirements

1. The system must show the full catalog of items for sell.
2. The system must show the list of categories.
3. Authorize the users.
4. Add, delete, edit items.
5. Register new user to the system.
6. View, delete register user.
7. Add, delete, category.
8. Search function.
9. Verification to ensure second copy of items will not create.
10. View the orders of the users.
11. Any user can communicate with the system administrator.

The features that are available for administrator:

1. The administrator must be able to register and modify information about user accounts.
2. The administrator must be able to edit the information about the existing item, or to add new item to the database and search of items.
3. The administrator must be able to add, edit and delete categories.
4. The administrator must be able to see all orders.

The features that are available for a user:

First register user:

1. The register user must be able to buy any items.
2. The register user must be able to add new items to be sold.
3. The register user can see the history of items he bought and sold.
4. The register user must be able to search for any item by.
 - 4.1. Name.
 - 4.2. Category.

4.3. Description.

5. The register user can edit your added items.

Second visitor user:

1. The visitor user can browse , search and register in the site.

2.2. Non-functional requirements

Non-functional requirements are usually called qualities of a system. Such as security and backup.

2.2.1. Security

In electronic commerce, security is a core issue that must be considered. Viruses and hacking are threatening e-commerce, thus requiring the network to provide a security solution. Including encryption, signature scheme, distributed security management, access control, firewall, secure Web servers, anti-virus protection.

2.2.2. Backup

Backup is useful in recovering your data in the event of an electronic disaster like hardware failure or a break-in that changes or otherwise damages your data. It copies of all the important computer files kept in another location. So if the database is quite large that has to extract file first. That means, storage is the base of a backup system.

2.3. Use case diagram for design system functions requirement

Unified Modeling Language (UML) is a standard set of diagramming techniques its objective was to provide a common vocabulary of object-oriented terms its rich enough to model any systems development project from analysis through implementation.

The diagrams are broken into two major groupings:

1. Modeling the structure of a system Structure diagrams provide a way to represent the data and static relationships in an information system. The struc-

ture diagrams include class, object, package, deployment, component, composite structure, and profile diagrams [1].

2. Modeling behavior of the system. Behavior diagrams provide the analyst with a way to show the dynamic relationships among the instances or objects that represent the business information system. They also allow modeling of the dynamic behavior of individual objects throughout their lifetime. The behavior diagrams support the analyst in modeling the functional requirements of an evolving information system. The behavior modeling diagrams include activity, sequence, communication, interaction overview, timing, behavior state machine, protocol state machine, and use-case diagrams [1].

A use case diagram is type of UML diagrams Capture business requirements for the system and illustrate the interaction between the system and its environment its used to describe the basic functions of the information system [1].

A use case diagram is a graphic depiction of the interactions among the elements of a system.

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. In this context, the term "system" refers to something being developed or operated, such as a mail-order product sales and service Web site. Use case diagrams are employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems.

Use-case models have two primary constructs: actors and use cases. An actor represents a role that a user of the system plays, not a specific user, a use case represents a major business process that the system will perform [5].

I develop use case diagram to illustrate the most important functional requirements fig. 1 Use case diagram has three actors (“Administrator”, “Register User”, and “Visitor User”) and 11 use cases.

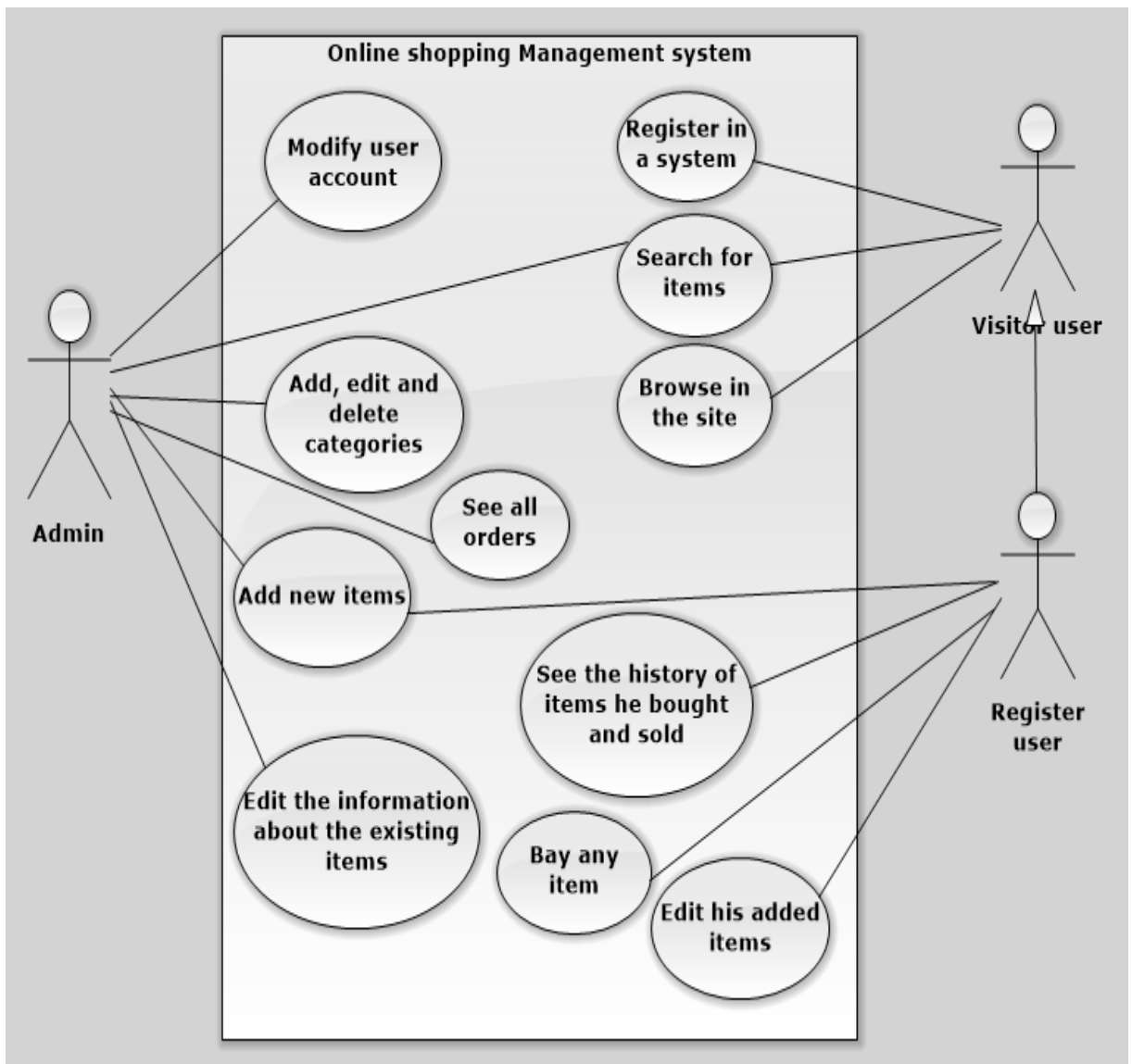


Fig. 1. Use case diagram

2.4. Database scheme design

Databases are where all your data is stored. It's like a bunch of filing cabinets with folders filled with files. Databases come mainly in two flavors: SQL and NoSQL [16]. In common parlance, the term database refers to a collection of data that is managed by a DBMS.

A database management system (DBMS) is a software package designed to define, manipulate, retrieve and manage data in a database. A DBMS generally manipulates the data itself, the data format, field names, record structure and file structure. It also defines rules to validate and manipulate this data. A DBMS relieves users of framing programs for data maintenance. Fourth-generation que-

ry languages, such as SQL, are used along with the DBMS package to interact with a database [4].

From the domain of problem, we have six objects for our project are.

1. Users.
2. Products.
3. Category.
4. Order.
5. Cart.
6. Contact.

So, the project will have four tables:

1. Users table contain information about users whose registered to the system its consist of 13 fields see table 2. the primary key is the field “User_id”, it is automatically incremented, and every column must have value not null every user have user_id, firstname, lastname, email, password, address1, adres2, country, city, zip, phone, picture, birth.

Table 2. Structure of the Users table

Column Type	Data Type	Allow nulls
User_id	Int	Checked
Firstname	varchar (100)	Unchecked
Lastname	varchar (100)	Unchecked
Email	varchar (255)	Unchecked
Password	varchar (255)	Unchecked
Adress1	varchar (255)	Unchecked
Adress2	varchar (255)	Unchecked
Country	varchar (100)	Unchecked
City	varchar (100)	Unchecked
Zip	varchar (100)	Checked
Phone	varchar (255)	Unchecked
Picture	varchar (255)	Checked

Column Type	Data Type	Allow nulls
Birth	varchar (100)	Unchecked
Type	int	Unchecked

2. Product table contain information about products that registered users submit it and display by the web application. Its consist of 10 fields see table 3. these fields have different types of data: decimal, text, we used decimal to have ability to add the price in decimal type and we used text to add any text about description products. The primary key is the field “Product_id”, it is automatically incremented, and we could see there are two foreign keys “User_id” an “Category-id” that are used to connect this table with “User” table and “category” table.

Table 3. Structure of the Product table

Column Type	Data Type	Allow nulls
Product_id	Int	Unchecked
Name	varchar (255)	Unchecked
Category-id	int (11)	Unchecked
User_id	int (11)	Unchecked
Product_number	varchar (255)	Unchecked
Price	decimal (10.0)	Unchecked
Shopping	decimal (10.0)	Unchecked
Description	Text	Checked
Quantity	int (11)	Unchecked
Type	varchar (255)	Unchecked

3. Orders table contain information about orders. Its consist of 10 fields see table 4. these fields have different types of data: decimal, text, we used decimal to have ability to add the price in decimal type. The primary key is the field “Order_id”, it is automatically incremented, and we could see there is one foreign key “User_id”, that are used to connect this table with “User” table.

Table 4. Structure of the Orders table

Column Type	Data Type	Allow nulls
Order_id	Int	Unchecked
Date	varchar (100)	Unchecked
Category-id	int (11)	Unchecked
User_id	int (11)	Unchecked
Product_number	varchar (255)	Unchecked
Product_name	varchar (255)	Unchecked
Price	decimal (10.0)	Unchecked
Total_Shopping	decimal (10.0)	Unchecked
Quantity	int (11)	Unchecked
Total_price	decimal (10.0)	Unchecked

4. Cart table contain information about cart. This is used to put what we choose from the items in it before buying. Its consist of 9 fields see table 5. These fields have different types of data: decimal, text, we used decimal to have ability to add the price in decimal type. The primary key is the field “Cart_id”, it is automatically incremented, and we could see there is one foreign key “User_id”, that are used to connect this table with “User” table.

Table 5. Structure of the Cart table

Column Type	Data Type	Allow nulls
Cart_id	Int	Unchecked
Product_id	int (11)	Unchecked
Product_name	varchar (255)	Unchecked
User_id	int (11)	Unchecked
Shopping	decimal (10.0)	Unchecked
Price	decimal (10.0)	Unchecked
Total_Shopping	decimal (10.0)	Unchecked
Quantity	int (11)	Unchecked

Column Type	Data Type	Allow nulls
Total_price	decimal (10.0)	Unchecked

5. Category table contain information about different types of categories of products. Its consist of 2 fields, see table 6. the primary key is the field “Category_id”, it is automatically incremented field.

Table 6. Structure of the Category table

Column Type	Data Type	Allow nulls
Category_id	Int	Unchecked
Name	varchar (100)	Unchecked

6. Contact table contain information about users whose unregistered to the system its consist of 5 fields see table 7. The primary key is the field “Contact_id”, it is automatically incremented, and every column must have value not null, contact table have contact_id, title, body, postdate, name.

Table 7. Structure of the Contact table

Column Type	Data Type	Allow nulls
Contact-id	Int	Unchecked
Title	varchar (255)	Unchecked
Body	varchar (255)	Unchecked
Postcode	int (11)	Unchecked
Name	varchar (30)	Unchecked

The scheme of the database is shown in the fig. 2 it consists of 6 tables, between “User” table and “Product” table one to many relationship and between “Users” table and “Orders” table one to many relationships, and between “Users” table and “Cart” table one to many relationships, and between “Category” table and “Product” table one to many relationships.

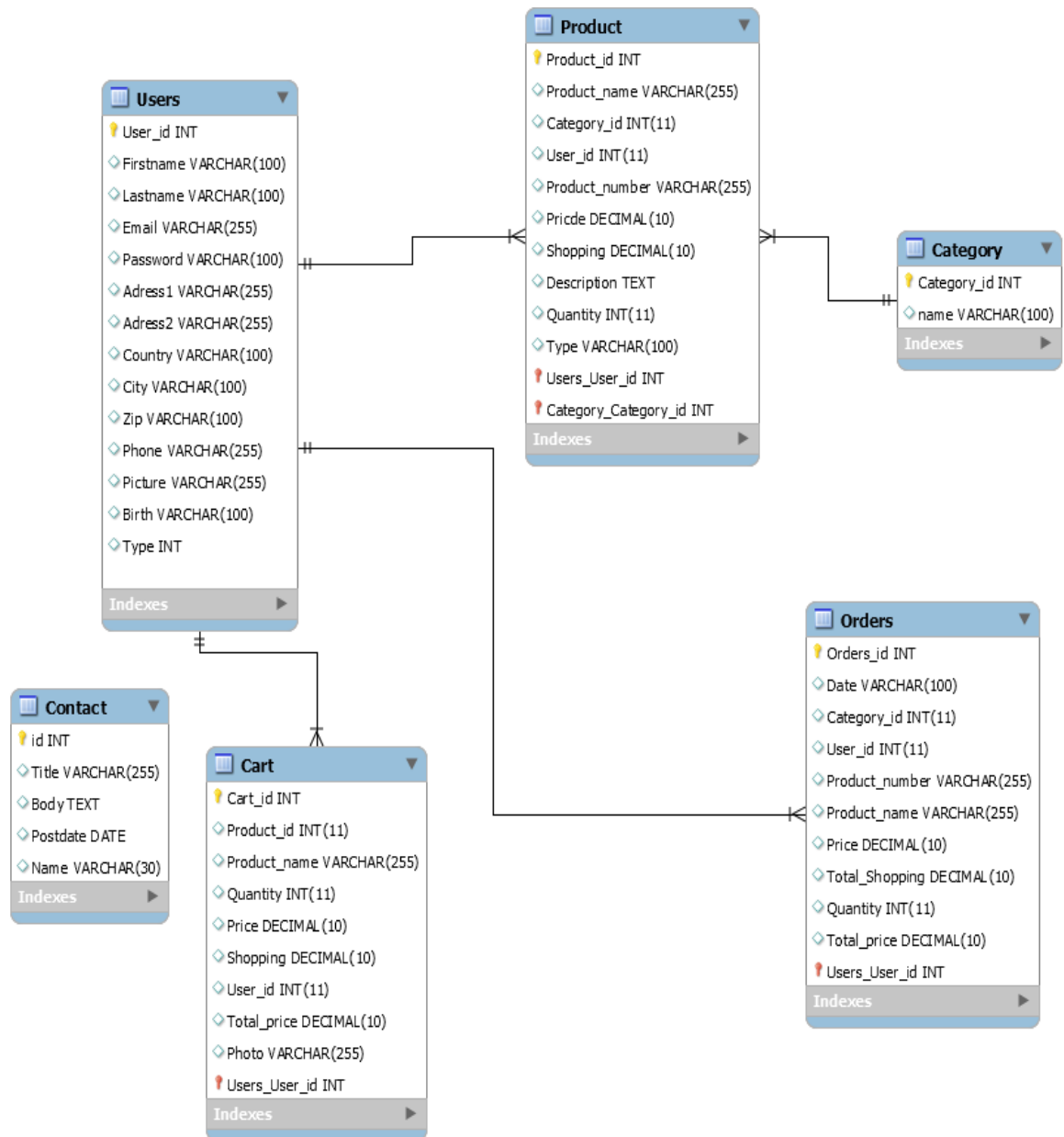


Fig. 2. Database schema

2.5. Interface design

Providing a successful web application is required a good user interface, UI design can make or break the success of your website or application in web design, great user interface, or UI design, is all about helping the user to accomplish a given task as simply and efficiently as possible [20].

We will implement views of an website. Fig. 3 shows the main page for the web site of a system. It contains the navigation bar in the top of the page: “Home”, “About us”, “Resources”, “Contact” at the bottom we see the catego-

ries navigation menu it is contains “Home page”, “Categories”, “Search”, “About”, “Contact”, “Register”, At the bottom of this menu we see the login form which contains “User name”, and “Password” in the left side and in the right side we see the all items pictures in the website and its descriptions. Its accessible by all users.

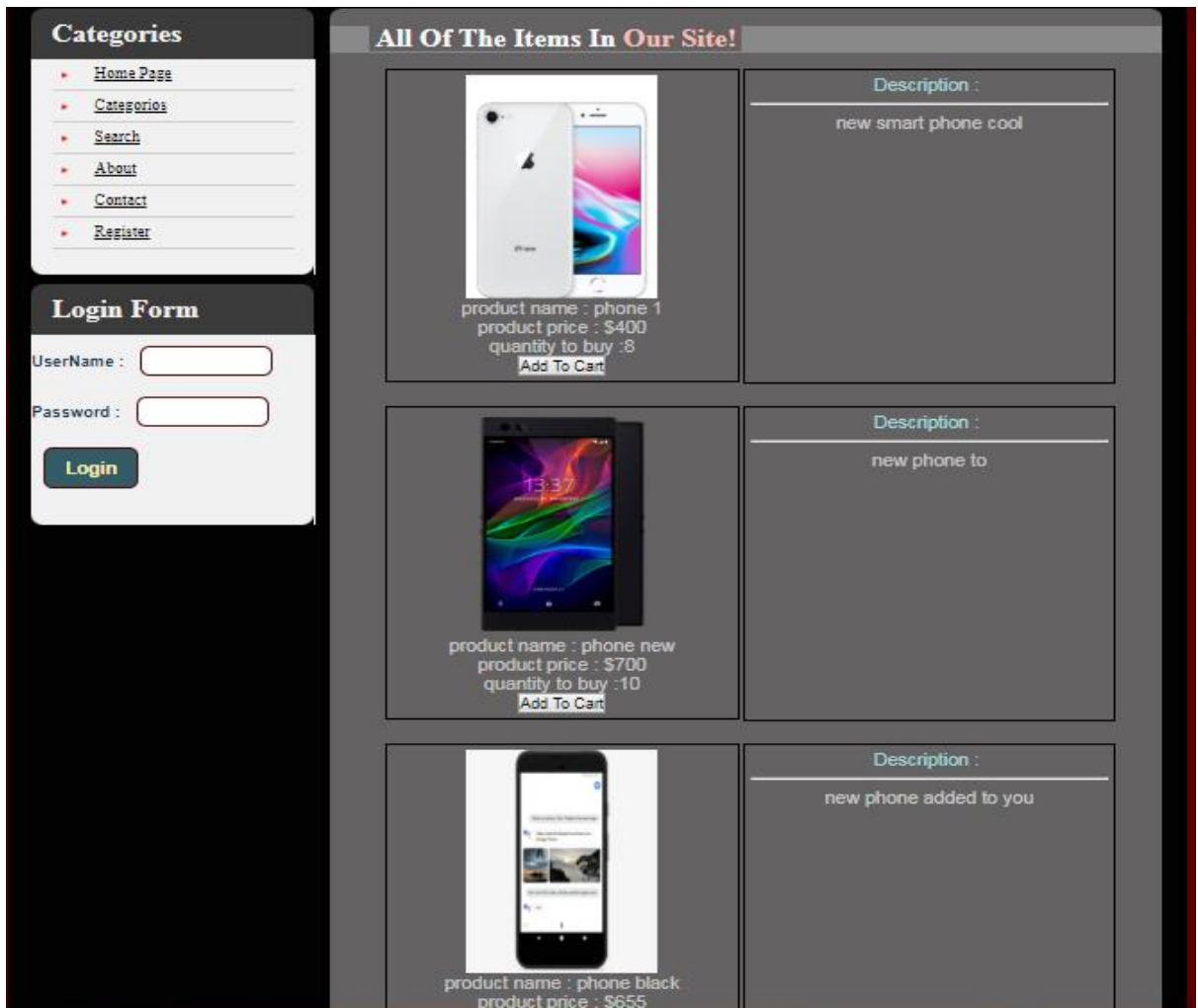


Fig. 3. Home page

Fig. 4 shows the page for “Categories”. it will show all items categories of my website such as “Women’s Clothing”, “Men’s Clothing”, “Phone & - Accessories”, “Computer, Office, Security”, “Consumer Electronics”, “Jewelry & Watches”, “Home & Garden, Furniture”, “Bags & Shoes”, “Toys Kids & Baby”, etc. Its accessible to all user.

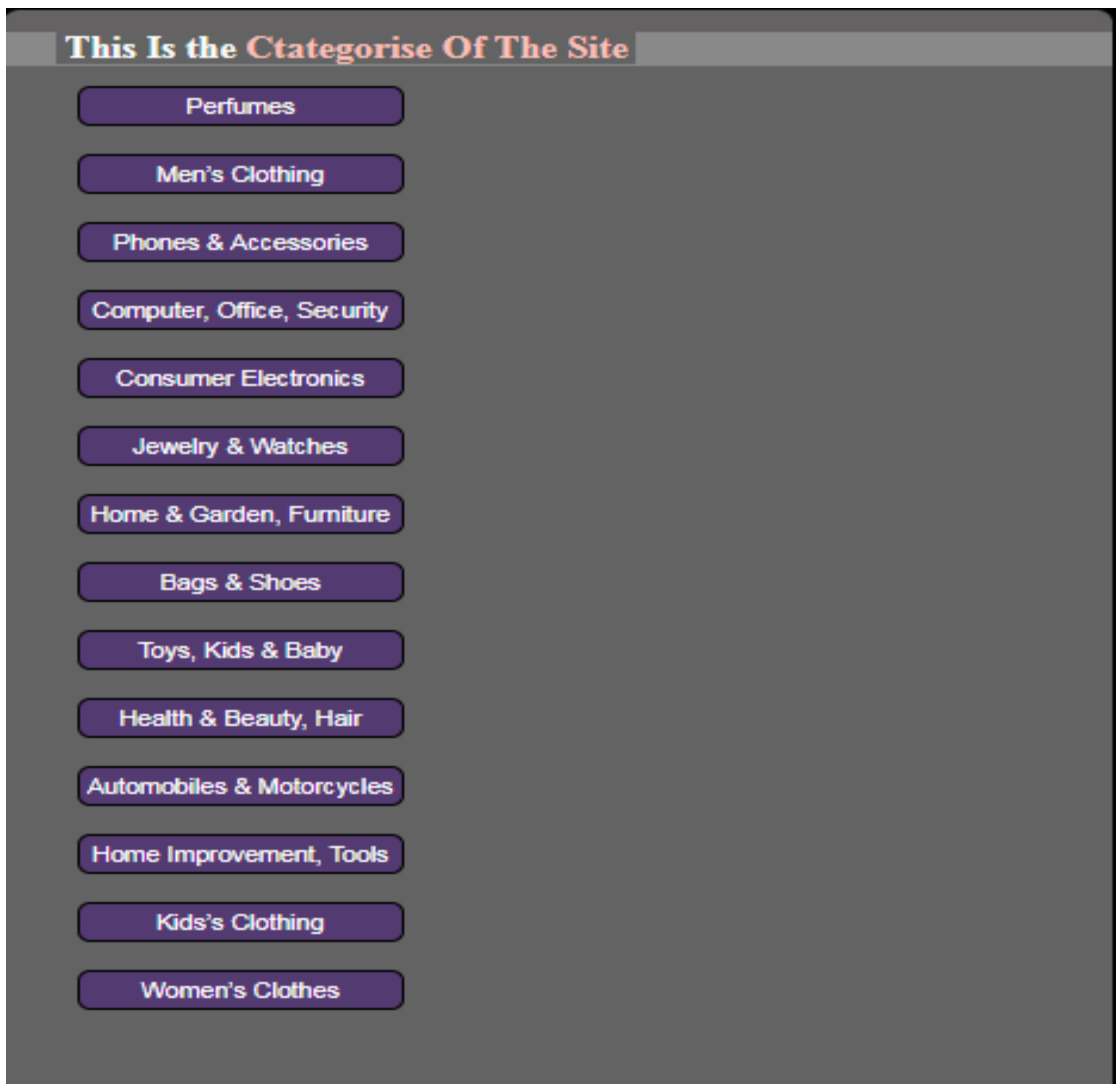


Fig. 4. Categories page

Fig. 5 shows the page for “Registration”. The user must enter his email, password and confirm password after that press bottom “Register”. Its accessible to all user.

Regester In The Site

UserName :	<input type="text"/>
Pasword :	<input type="text"/>
Retype Password :	<input type="text"/>
your Email :	<input type="text"/>

Fig. 5. Registration page

Fig. 6 below show the page of “Add category” in it administrator could create new category, he after that press bottom “Save Categories”. Its accessible to administrator only.



Fig. 6. Add category page

Fig. 7 shows the page for “Add items”. The page that accessible by register user and administrator to add new items after register user select category he select category for the items that he won’t to added and writes names of products, product number, price, shopping, description, quantity, type, and must upload image for this product and after that press bottom “Save item” to upload the new items to app database in server. Its accessible to administrator and registers users.

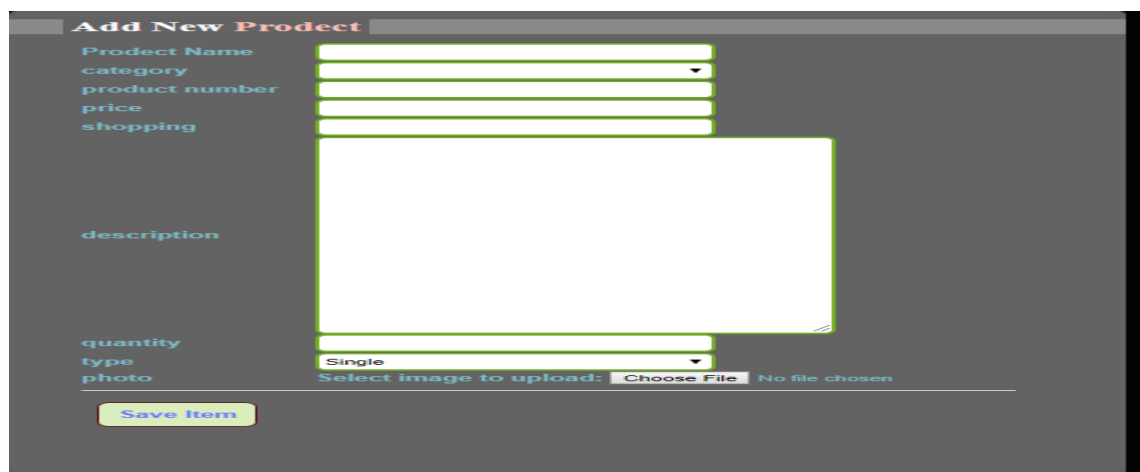


Fig. 7. Add items page

Fig. 8 below shows the page for “Edit Categories”. The page that on it could view on it all the categories with ability to delete or modifies one or more of categories. Its accessible to administrator only.

Category Name	Action	Delete
Perfumes	Edit	Delete
Men's Clothing	Edit	Delete
Phones & Accessories	Edit	Delete
Computer, Office, Security	Edit	Delete
Consumer Electronics	Edit	Delete
Jewelry & Watches	Edit	Delete
Home & Garden, Furniture	Edit	Delete
Bags & Shoes	Edit	Delete
Toys, Kids & Baby	Edit	Delete
Health & Beauty, Hair	Edit	Delete
Automobiles & Motorcycles	Edit	Delete
Home Improvement, Tools	Edit	Delete
Kids's Clothing	Edit	Delete
Women's Clothes	Edit	Delete

Fig. 8. Edit categories page

Fig. 9 below shows the page for “Edit Items”. The page that on it could view on it all the items with ability to delete or modifies one or more of items. Its accessible to administrator and registered users.

name	category	price	quantity	Edit	Delete
phone 1		400	8	Edit	delete
phone new		700	10	Edit	delete
phone black		655	3	Edit	delete
Jaket Kulit		30	12	Edit	delete
shirt 1		20	15	Edit	delete
desktop-computer1		125	15	Edit	delete
HP Desktop Computer		349	7	Edit	delete
Watches2		100	8	Edit	delete
Japanese consumer electronics brand Akai eyes		2200	8	Edit	delete
Rs 2000 cr business by 2020					
Bags and Shoes1		110	20	Edit	delete
jaket2		70	11	Edit	delete

Fig. 9. Edit Items page

Fig. 10 shows the page of “User panel” in it administrator could view all the users who registered in the system and he could delete the user who violates

laws, and he could add new administrator from registered user. Its accessible to administrator only.

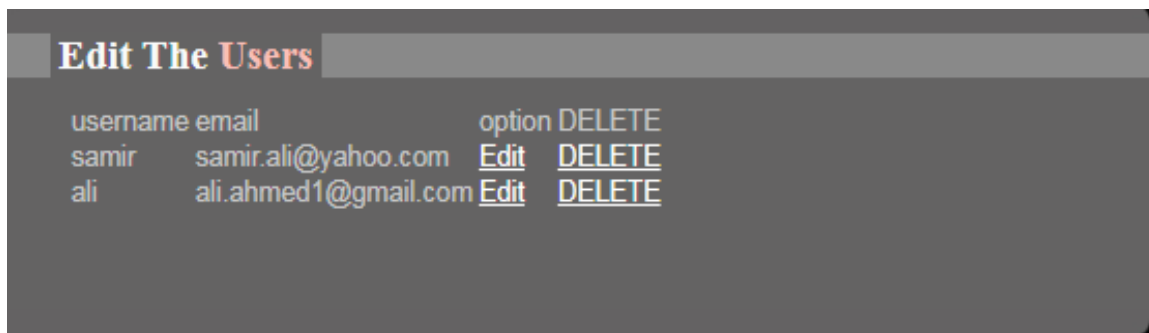


Fig. 10. User panel page

Fig. 11 shows the page of “Shopping cart” in it a registered users could add the items he wants to pay and then confirm the purchase through them and then the items go to the orders when the confirmation of the purchase. Its accessible to registered users only.



Fig. 11. Shopping cart page

Fig. 12 shows the page of “My orders” in it a registered users could see the items he bought it and its quantity and total price. Its accessible to registered users only.

Your Orders		
order number : 13		
Product name: Bags and Shoes1	quantity: 20	total price : \$115
order number : 14		
Product name: jaket2	quantity: 11	total price : \$75

Fig. 12. My orders page

Fig. 13 shows the page of “Personal information” in it a registered users could edit your personal information such as “firstName”, “LastName”, “Email”, “Address1”, “Address2”, “Country”, “city”, “Zip”, “Phone”, “Picture”, “Birth” and then press button update info. Its accessible to registered users only.

Your Personal Information	
firstName	<input type="text"/>
lastName	<input type="text"/>
Email	<input type="text"/>
address1	<input type="text"/>
address2	<input type="text"/>
country	<input type="text"/>
city	<input type="text"/>
zip	<input type="text"/>
Phone	<input type="text"/>
Picture	Select image to upload: <input type="button" value="Choose File"/> No file chosen
birth	<input type="text"/>
<input type="button" value="Update Info"/>	

Fig. 13. Personal information page

Fig. 14 shows the page of “Search” for the items by inter the name of the items. Its accessible to all users and administrator.



Fig. 14. Search page

Fig. 15. shows the page of “Contact” for the unregistered user by inter the name of the user, title, message text, to contact with administrator. Its accessible to all users.

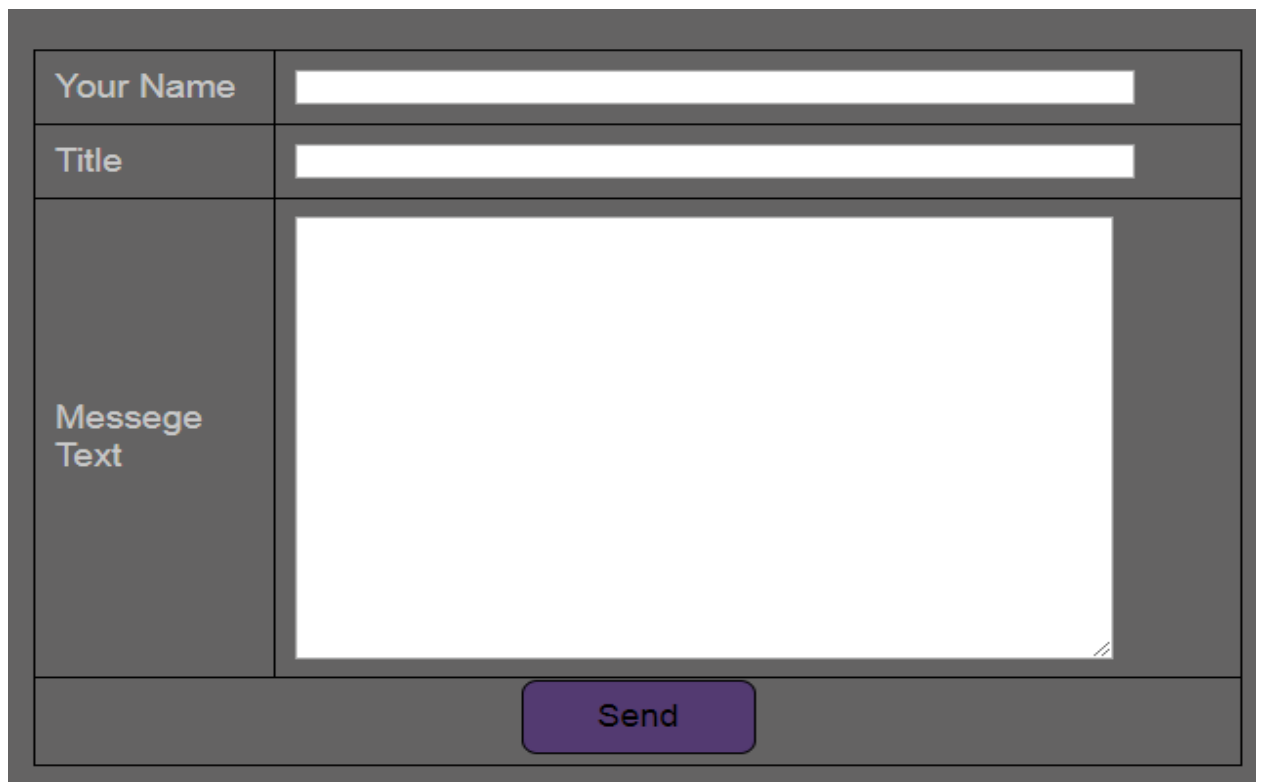
The image shows a contact form with a dark grey background. It consists of three input fields stacked vertically. The first field is labeled "Your Name", the second is labeled "Title", and the third is a larger text area labeled "Message Text". At the bottom right of the form, there is a purple "Send" button.

Fig. 15. Contact page

3. IMPLEMENTATION OF MANAGEMENT INFORMATION SYSTEM FOR ONLINE SHOPPING

3.1. Functions Implementation

3.1.1. Add Items

Fig. 16 show development of add products function in “Add-Items” controller in Area “RegisterUser”, and “AdministratorUser”, as response to our “create” ActionResult.

```
<h2 class="title"><span>Add New <span>Prodeact</span></span></h2>
<div class="row2">
<?php
// categurey code .

$categoryquery = mysql_query("SELECT * FROM `category` ORDER BY id ASC");
$resultcategory = mysql_fetch_assoc($categoryquery);
?>
<?php
$postname = $_POST['name'];
$postcategory_id = $_POST['category_id'];
$postuser_id = $_SESSION['id'];
$postproduct_number = $_POST['product_number'];
$postprice = $_POST['price'];
$postshopping = $_POST['shopping'];
$postdescription = $_POST['description'];
$postquantity = $_POST['quantity'];
$posttype = $_POST['type'];
$postphoto = $newfilename;

if(isset($_POST['save'])){
// we must add uplaod photo code here !!!

$filename = $_FILES["photo"]["name"];
$file_basename = substr($filename, 0, strpos($filename, '.')); // get file extention
$file_ext = substr($filename, strpos($filename, '.')); // get file name
$filesize = $_FILES["photo"]["size"];
$allowed_file_types = array('.jpg', '.png', '.BMP');
```

Fig. 16. Add Items code

3.1.2. Create Category

Fig. 17 shows development of Create new category in “Create Category” controller in Area “Admin”, as response to “create” ActionResult it will insert new category that user enters it in the view after ensure from its validation and display message of success or failed when function done.

```

<h2 class="title"><span>Add New <span>Categorise</span></span></h2>
<div class="row2">
<table>

<?
$postcat = $_POST['name'];
if(isset($_POST['save'])) {
    if(empty($postcat)) {
        echo "You Must Type Name";
    } else {
        $cateinsert = mysql_query("INSERT INTO `category` (`name`) VALUES ('$postcat')");
        if($cateinsert) {
            echo "Categorise Insert Into DataBase OK !";
            header("Refresh: 3; URL=add_categorise.php");
        } else {
            echo mysql_error();
        }
    }
}
?>

```

Fig. 17. Create new category code

3.1.3. Login

Fig. 18 shows implementation of login method in “Login” controller in Area “Security”.

```

<?
session_start();
if(isset($_POST['submit'])) {
    include 'core/config.php';
    $username = $_POST['username'];
    $password = md5($_POST['password']);

    if(empty($username) || empty($password)) {
        header("Location: index.php?login=empty");
        exit();
    } else {
        $sql = "SELECT * FROM users WHERE `username`='".$username.'" AND `password`='".$password.'"";
        $result = mysql_query($sql);
        $result_check = mysql_num_rows($result);
        if($result_check < 1) {
            header("Location: index.php?login=error");
            exit();
        } else {
            if($row = mysql_fetch_assoc($result)) {
                $hashed = $row['password'];
                if($hashed == false) {
                    header("Location: index.php?login=errorpass");
                }
            }
        }
    }
}
?>

```

Fig. 18. Login code

3.1.4. Register

Fig. 19 shows the implementation of register new user to the system.

```
<?php
if(isset($_POST['register'])){
    $postpassword = md5($_POST['password2']);
    $postusername = $_POST['username'];
    $postemail = $_POST['email'];
    $posttype = 0;
    $postactive = 0;
    if($_POST['username'] > 32 ){
        echo "UserName To Much character !";
    }elseif($_POST['password1'] != $_POST['password2']){
        echo "Password Not Matche !";
    }elseif(!preg_match('/^[A-Za-z][A-Za-z0-9]*(?:_[A-Za-z0-9]+)*$/',$postusername)){
        echo "UserName: Must be Just character in the first";
    }elseif(empty($postusername) || empty($postpassword)){
        echo "Password Must Not Be Empty !";
    }elseif(!filter_var($postemail, FILTER_VALIDATE_EMAIL)){
        echo "not excepted email";
    }elseif(empty($postemail)){
        echo "Email Must Not Be Empty";
    }else{
        $selectusers = mysql_query("SELECT * FROM users WHERE username='$postusername' AND `password` = '$postpassword'");
        $usersresult = mysql_fetch_assoc($selectusers);
        if($usersresult['username'] == $postusername || $usersresult['password'] == $postpassword){
            echo "This User Is Alrady Token";
        }else{
            $result = mysql_query("INSERT INTO `users` (`username`,`password`,`email`,`type`) VALUES ('$postusername','$postpassword',
            if($result){
                echo "You Are Now User In The Site";
            }
        }
    }
}
```

Fig. 19. Register new user code

The login and register require ensure that the information the user enter as email address is really right email address and unique “not tow person with same address” [19], Also in registration must be “confirm” edit box to ensure that the password user enter is also correct, when we developed our database we did not perform such that field, fig. 20 shows implementation of “User validation”.

```
if($_POST['username'] > 32 ){
    echo "UserName To Much character !";
}elseif($_POST['password1'] != $_POST['password2']){
    echo "Password Not Matche !";
}elseif(!preg_match('/^[A-Za-z][A-Za-z0-9]*(?:_[A-Za-z0-9]+)*$/',$postusername)){
    echo "UserName: Must be Just character in the first";
}elseif(empty($postusername) || empty($postpassword)){
    echo "Password Must Not Be Empty !";
}elseif(!filter_var($postemail, FILTER_VALIDATE_EMAIL)){
    echo "not excepted email";
}elseif(empty($postemail)){
    echo "Email Must Not Be Empty";
}else{
    $selectusers = mysql_query("SELECT * FROM users WHERE username='$postusername' AND `password` = '$postpassword'");
    $usersresult = mysql_fetch_assoc($selectusers);
    if($usersresult['username'] == $postusername || $usersresult['password'] == $postpassword){
        echo "This User Is Alrady Token";
    }else{
        $result = mysql_query("INSERT INTO `users` (`username`,`password`,`email`,`type`)
        VALUES ('$postusername','$postpassword','$postemail','$posttype')");
        if($result){
            echo "You Are Now User In The Site";
        }
    }
}
```

Fig. 20. User validation

3.1.5. Cart

Fig. 21 shows development of Cart in “User Category” controller in Area “User”, as response to “create” ActionResult it will insert new items to that user bought it, the cart contains “Product Name”, “Price”, “Shopping”, “Quantity”, “Total price”.

```
<h2 class="title"><span>Your <span>Cart</span></span></h2>
<div class="row2">
<?php
$postuser_id = $_SESSION['id'];
$postproduct_id = $_POST['product_id'];
$postshopping = $_POST['shopping'];
$postquantity = $_POST['quantity'];
$postprice = $_POST['price'];
$posttotal = $_POST['total'];
$postcartid = $_POST['cart_id'];
if(isset($_POST['buyit'])) {
    $querybuy = mysql_query("INSERT INTO `orders` (`user_id`, `product_id`, `shopping`, `quantity`, `price`, `total`)
VALUES (`$postuser_id`, '$postproduct_id', '$postshopping', '$postquantity', '$postprice', '$posttotal') ");
    $querydelete = mysql_query("DELETE FROM `cart` WHERE id=$postcartid");
    if($querybuy) {
        echo "your order is done";
    }
} else {
    echo mysql_error();
}
?>
```

Fig. 21. Cart code

3.1.6. Orders

Fig. 22 shows development of Orders in “User Category” controller in Area “User”, as response to “create” ActionResult it will insert new items from the user cart to confirm your purchase, and see a gain what he bought the orders contains “Product Name”, “Quantity”, “Total price”.

```
<?php include "inc/menu.php"; ?>
<div class="right-panel">
<div class="right-panel-in">
<div class="row">
<h2 class="title"><span>Your <span>Orders</span></span></h2>
<div class="row2">
<table style="border-collapse: collapse; width: 80%;">
<?php
$userid = $_SESSION['id'];
$queryorders = mysql_query("SELECT * FROM orders INNER JOIN product on orders.product_id = product.id WHERE orders.user_id = '$userid'
ORDER BY orders.id");
while($roworder = mysql_fetch_array($queryorders)) {
    echo '
<tr>
<td style="padding: 5px;font-weight: bold; color: #7DBBC3;border: 1px solid #000; width: 30%; text-align: center;">order number : '.$roworder['id'].'</td>
</tr>
<tr>
<td style="padding: 5px;font-weight: bold; color: #7DBBC3;border: 1px solid #000;">Product name : '.$roworder['name'].'</td>
<td style="padding: 5px;font-weight: bold; color: #7DBBC3;border: 1px solid #000;">quantity : '.$roworder['quantity'].'</td>
<td style="padding: 5px;font-weight: bold; color: #7DBBC3;border: 1px solid #000;">total price : '.$roworder['total'].'</td>
</tr>
```

Fig. 22. Orders code

3.1.7. Edit Items

Fig. 23 shows development of edit items in “User and admin Category” controller in Area “User”, and “admin”, as response to “create” ActionResult it will edit items from the user if the user is uploaded it or from the admin.

```
<h2 class="title"><span>Edit The <span>Product</span></span></h2>
<div class="row2">
<?php
// category code .
$catid=$_GET['id'];
$categoryquery = mysql_query("SELECT * FROM `category`");
$resultcategory = mysql_fetch_assoc($categoryquery);
?>
<?php
$postname = $_POST['name'];
$postcategory_id = $_POST['category_id'];
$postuser_id = $_SESSION['id'];
$postproduct_number = $_POST['product_number'];
$postprice = $_POST['price'];
$postshopping = $_POST['shopping'];
$postdescription = $_POST['description'];
$postquantity = $_POST['quantity'];
$posttype = $_POST['type'];
$postphoto = $newfilename;

if(isset($_POST['save'])){
// we must add upload photo code here !!!

$filename = $_FILES["photo"]["name"];
$file_basename = substr($filename, 0, strpos($filename, '.')); // get file extension
$file_ext = substr($filename, strpos($filename, '.')); // get file name
$filesize = $_FILES["photo"]["size"];
$allowed_file_types = array('.jpg', '.png', '.BMP');
```

Fig. 23. Edit items code

3.1.8. Edit Categories

Fig. 24 shows development of edit categories in “admin Category” controller in Area “admin”, as response to “create” ActionResult it will edit category from the admin.

```
<h2 class="title"><span>Edit The <span>Category</span></span></h2>
<div class="row2">

<?php
$catid = $_GET['id'];
if(isset($_GET['id']) == true){

$selcat = mysql_query("SELECT * FROM `category` WHERE `id` = '$catid'");
$rowcat = mysql_fetch_assoc($selcat);
echo '
<form action="edit_categorise.php?id='.$catid.'" method="POST">
<table>
<tr>
<td>
<input name="name" type="text" value="'. $rowcat['name'].'" />
</td>
<td>
<input name="update" type="submit" value="Update" />
</td>
</tr>
</table>
</form>';
```

Fig. 24. Edit categories code

3.1.9. Edit Users

Fig. 25 shows development of edit users in “admin Category” controller in Area “admin”, as response to “create” ActionResult it will edit or delete user from the admin.

```
<h2 class="title"><span>Edit The <span>User Information</span></span></h2>
<div class="row2">
<br><br>
<?php
$getId = $_GET['id'];
$selectusers = mysql_query("SELECT * FROM `users` WHERE `id` = '$getId'");
$resultusers = mysql_fetch_assoc($selectusers);

if(isset($_POST['update'])) {
}
?>
```

Fig. 25. Edit users code

3.1.10. Uploaded Photos

Fig. 26 shows the code how we could uploaded any image in our web application.

```
// we must add upload photo code here !!!
$filename = $_FILES["photo"]["name"];
$file_basename = substr($filename, 0, strpos($filename, '.')); // get file extension
$file_ext = substr($filename, strpos($filename, '.')); // get file name
$filesize = $_FILES["photo"]["size"];
$allowed_file_types = array('.jpg', '.png', '.BMP');

if (in_array($file_ext,$allowed_file_types) && ($filesize < 8000000))
{
    // Rename file
    $newfilename = md5($file_basename) . $file_ext;
    if (file_exists("items/" . $newfilename))
    {
        // file already exists error
        echo "You have already uploaded this file.";
    }
    else
    {
        move_uploaded_file($_FILES["photo"]["tmp_name"], "items/" . $newfilename);
        $querysave = mysql_query("INSERT INTO product (`name`, `category_id`, `user_id`, `product_number`, `price`, `shopping`,
        `description`, `quantity`, `type`, `photo`) VALUES ('$postname', '$postcategory_id', '$postuser_id', '$postproduct_number',
        '$postprice', '$postshopping', '$postdescription', '$postquantity', '$posttype', '$newfilename')");
        if($querysave){
            echo "Product Inserted Ok !";
            header("Refresh: 5; URL=add_products.php");
        }else{
            echo mysql_error();
        }
    }
}
```

Fig. 26. Uploaded photos code

3.2. Deployment Diagram for Online shopping web application

In the context of the Unified Modeling Language (UML), a deployment diagram falls under the structural diagramming family because it describes an aspect of the system itself. In this case, the deployment diagram describes the physical deployment of information generated by the software program on hardware components. The information that the software generates is called an artifact. This shouldn't be confused with the use of the term in other modeling approaches like BPMN.

Deployment diagrams are made up of several UML shapes. The three-dimensional boxes, known as nodes, represent the basic software or hardware elements, or nodes, in the system. Lines from node to node indicate relationships, and the smaller shapes contained within the boxes represent the software artifacts that are deployed [3].

Fig. 29 shows deployment diagram for our system, that show the hardware for your system, the software that is installed on that hardware, and the middle-ware used to connect the disparate machines to one another.

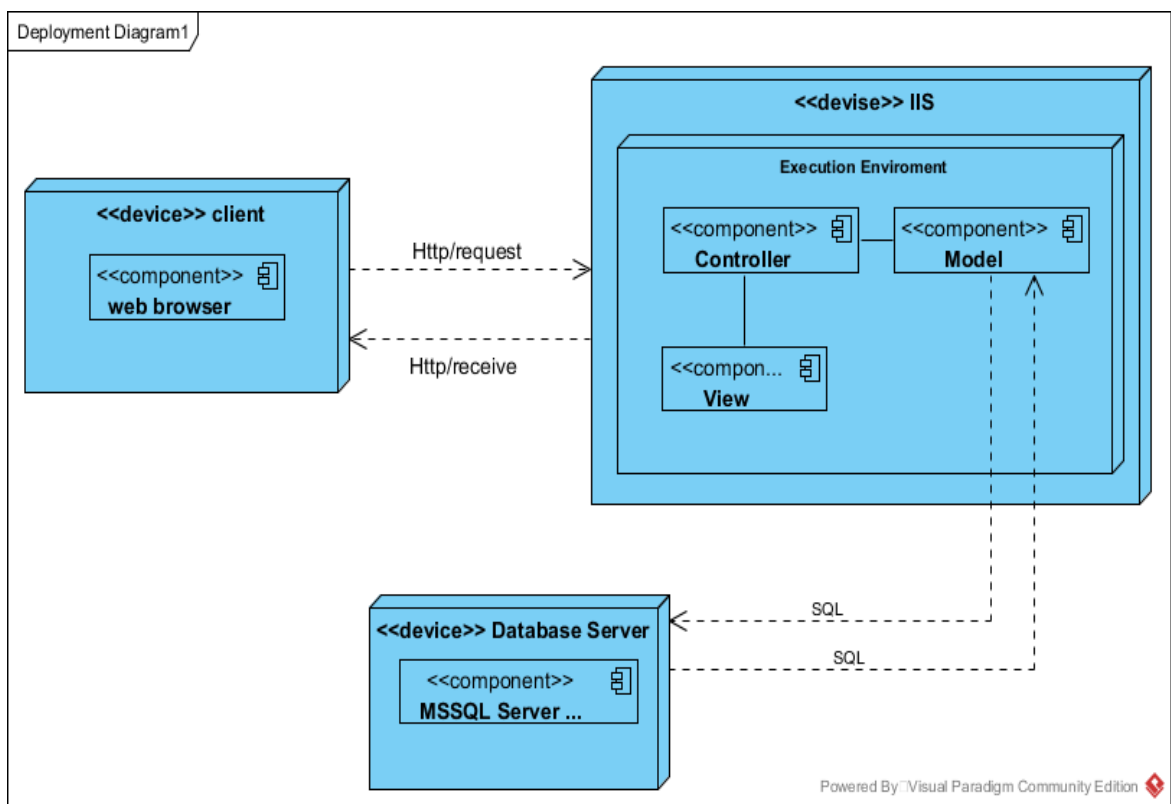


Fig. 29. UML deployment Diagram

4. TESTING OF THE WEB APPLICATION

Functional testing is a type of testing which verifies that each function of the software application operates in conformance with the requirement specification. This testing mainly involves black box testing and it is not concerned about the source code of the application [10].

Each and every functionality of the system is tested by providing appropriate input, verifying the output and comparing the actual results with the expected results. This testing involves checking of User Interface, APIs, Database, security, client/ server applications and functionality of the Application Under Test. The testing can be done either manually or using automation [10].

Functional Testing Process:

1. Identify test input.
2. Compute the expected outcomes with the selected test input values.
3. Execute test cases.
4. Comparison of actual and computed expected result.

According to a recent info, our system functional testing has done by comparing the actual results with the expected results manually (table 8).

Table 8. Black box functional testing

No.	Function	Expected result	Obtained result	Conclusion
1.	View the all items for every user using the system	Any visitor can view home and categories page	Any visitor can view home and categories page	Passed
2.	Authorize the users	Visitor authorized	Visitor authorized	Passed

No.	Function	Expected result	Obtained result	Con- clusion
3.	Register new users to the system	Any unregistered visitor can view the "Registration" page and register	Any unregistered visitor can view the "Registration" page and register	Passed
4.	Adding a new items	Only registered user could add a new item	Only registered user could add a new item	Passed
5.	Adding a new items	The administrator could add a new item	The administrator could add a new item	Passed
6.	Verification to ensure second copy of item will not create	Registered user will not be able to add repeated item	Registered user will not be able to add repeated item	Passed
7.	Verification to ensure second copy of item will not create	The administrator will not be able to add repeated item	The administrator will not be able to add repeated item	Passed
8	Adding new category	The administrator will be able to add new category	The administrator will be able to add new Category	Passed

No.	Function	Expected result	Obtained result	Conclusion
9.	Edit and delete category	The administrator will able to edit and delete category	The administrator will able to edit and delete category	Passed
10.	Edit and delete items	The administrator will able to edit and delete items	The administrator will able to edit and delete items	Passed
11.	View list of register users and delete user's	The administrator can view list of register user to system and delete selected users	The administrator can view list of register user to system and delete selected users	Passed
12.	Edit users	The administrator can upgrade the regular user to administrator	The administrator can upgrade the regular user to administrator	Passed
13.	Add to cart	Register user can put any items he wont to pay in the cart and then confirm the purchase from the cart	Register user can put any items he wont to pay in the cart and then confirm the purchase from the Cart	Passed

No.	Functin	Expected result	Obtained result	Coclusion
14.	View your orders	Register user can view what he bought	Register user can view what he bought	Passed
15.	View orders	The administrator can view list of all users orders	The administrator can view list of all users orders	Passed
16.	Search function	Every user of the system could use Search service in the website	Every user of the system could use Search service in the website	Passed
17.	Edit personal information	Register user can edit personal information such as changed his address ,email, city, and add personal image for him	Register user can edit personal information such as changed his address ,email, city, and add personal image for him	Passed
18.	The system must show all the items in the website	Any visitor can see this page	Any visitor can see this page	Passed
19.	Give all visitor the permission to see the page "Contact us"	Any visitor can see the page "Contact us" with the list of the main sections	Any visitor can see page "Contact us" with list of the main sections	Passed

No.	Function	Expected result	Obtained result	Con- clusion
20.	Give all visitor the permission to see the page "About us"	Any visitor can see the page "About us" with the list of the main sections	Any visitor can see the page "About us" with the list of the main sections	Passed

CONCLUSION

The Internet has revolutionized the way we shop, because of the numerous advantages and benefits, more and more people these days prefer buying things online on the conventional method of going into stores, for these reasons that many people love online shopping, convenience is the biggest perk in the online shopping, where else can you comfortably shop at midnight while in your pajamas, more variety the choices online are amazing, one can get several brands and products from different sellers all in one place, price comparisons: comparing and researching products and their prices is so much easier online.

To achieve this target, it's important to build online shopping portal that could be used by all visitors for this web site to buy and sell any products.

This what we could do it by development of this project

The goal of the research was the development of website for commercial lines.

For the reaching this goal we resolved following objectives.

1. The domain of the problem was analyzed.
2. Analysis of modern technologies of web application development and choose which technology for project development was made.
3. Use case diagram for the system was designed.
4. Database scheme was designed.
5. Web application user interface was design.
6. The management information system for online shopping by PHP, HTML, MySQL, CSS was implemented.

Future development and improvement

For future development and improvement for the project could done by:

- 1) add a payment method by smart card;
- 2) a user can put any feedback for the products;
- 3) provide ability to send and receive email for user to see his orders and price;
- 4) improvement in home page design.

From this system development process, I learned a lot. Previously, I was mostly learning conceptual information, and also had done some piecemeal exercises, which were very different compared to this system design. This project gave me a great opportunity, and finally joined together conceptual expertise with practice. Through design of this system, I summed up the following experience: First of all, I recognized the importance of the code standard. Especially in some large-scale projects, there would be hundreds or thousands of functions. If codes were written unstandardized, a series of troubles would appear in the debugging and checking stage. Furthermore, a complete code-test is very important. Some errors will not be found until much later. Secondly, I realized the importance of software design. The projects I developed before were mostly rapid works, usually designing the next step while developing; they did not require too much time on the logical design of the software. But with this project, I recognized that if I did not pay attention to the original design, large areas of code had to be rewritten. Finally, I recognized the importance of the debugging method. System debugging process is more complex than the development process. In fact, each operation and each submitting a request to the server includes a lot of small pieces of code execution. If the programmer do not use an appropriate debugging method, he/she will be difficult to identify errors in the program.

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