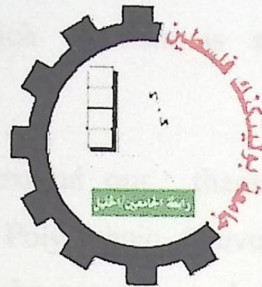


بسم الله الرحمن الرحيم

Palestine Polytechnic University

College of Administrative and informatics science

Department of Information Technology



E-Store Using Distributed Database For Bravo Mall

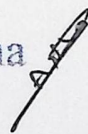
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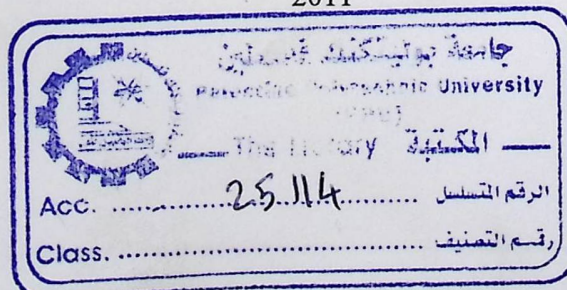
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A Final project submitted in partial fulfillment of the requirements for the degree of B.Sc in Information Technology

2011



Acknowledgements

We would like to thank everyone who helped us continue this project "E-store using distributed database for Bravo Mall" especially to our Supervisor " Mr. Abed Al-Nasser Danaa" for his valuable help and guidance, and who, despite all his hard work, continued to support us with sound advice and constructive criticism. Such criticism is so valuable that we felt both privileged blessed to receive it.

We would like also to extend our thanks and gratitude to all teachers and employees at Palestine Polytechnic University, and we would like to send special thanks to everyone who presents any help to us.

We also offer our gratitude to our mothers, fathers, brothers and sisters for their support and encouragement, without whose their contributions and patience this research would have remained unfulfilled dream.

الإهداء

الحمد لله رب العالمين، والصلوة والسلام الذي قدر لنا علمي جميل عزرا (المتمرويح بنفوق)

إلى من جرع الكأس فارغاً ليس قيني قطرة حـب
إلى من كلت أنامله ليقدم لنا لحظة سعادة
إلى من حصده الأشواك عن دربي ليمهد لي طريق العلم
إلى القلب الكبير (والدي العزيز) ،
رحمك الله يا والدي (أبا مجدي، أبا صفوت)

إلى من أرضعتني الحـب والحنـان
إلى من رمى الحـب ولبس الشفاء
إلى القلب الناصع بالبياض (والدتي الحبيبة)
أدام الله في عمرك

الآن تفتح الأشعة وترفع المرساة لتنتقل السفينة في عرض بحر واسع مظلم هو بحر الحياة وفي هذه الظلمة لا يضيء إلا قنديل
الذكريات ذكريات الأخوة البعيدة إلى الذين أحبتهم وأحبوني (أصدقائي)

إخواني

لكم جميعاً

Abstract

Today the world is moving forward rapidly, and this progress has been reflected on most aspects of life , especially in the areas of technology , as a result of the rapid technological development witnessed by the world as a result of science and learning was not necessary to develop methods of sale and purchase is consistent with this rapid development , so what is known on E-Business to help buyers sellers to exchange goods and information across the Internet.

Thus, the idea of this project is to build an E-store distributed database for Bravo Mall kept pace with development sale of contemporary methods and the system works on the homogeneous distributed database application to make coordination easily between branches of Bravo Mall.

In building the system we useASP.NET web technology as well as some other techniques such as such as SQL databases language, JavaScript. From another side we will use multimedia applications such as flash, 3DMAX to increase attractiveness and to give him real appearance for Bravo Mall.

However, the project team see that the use of online shopping easy way of buying, selling, particularly the existence of geographical barriers in this way to reduce the time and effort and to overcome these barriers and work on the deployment of this in the Palestinian society for the introduction of a new development of Palestine to the competitive market regionally and then globally.

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CHAPTER ONE

Introduction

- 1.1 Overview
- 1.2 E-Business concepts
- 1.3 Distributed Databases (DDB)
- 1.4 Problem Statement
- 1.5 Project Goals Statement
 - 1.5.1 Primary Goals
 - 1.5.2 Secondary Goals

1.1 Overview

Today the world is moving forward rapidly, and this progress has been reflected on most aspects of life, especially in the areas of technology, Such as implementation of technology at the scope of stores management using active electronic website, as a result of the rapid technological development witnessed by the world as a result of science and learning was not necessary to develop methods of sale and purchase of consistent with this rapid development, so what is known on E-Business to help buyers and sellers to exchange goods and information across the internet.

Thus, the idea of this project is to build electronic store system that Connect branches of Corporation with each other through distributed database and connect company with the customer to facilitate procurement operation.

So we will be apply this project on **Bravo Mall** by connecting different branches with each other, so that if customer doesn't find some items in one branch then the system convert him to another branch by default. On the other hand, our project is based on the integration between technology and business in order to enhance the way the stores will be managed.

In building the system we will use ASP.NET web technology, as well as some other techniques such as SQL databases language, JavaScript. From another side we will use multimedia applications such as flash to increase attractiveness and to give real appearance for **Bravo Mall**.

As we are an information technology students we had to contribute as much as possible to introduce this concept and implement it in Palestinian markets, that will be through finding supports idea for consumers and facilitate the shopping process through several options first, sale at fixed prices, so the goods displayed with a fixed price, secondly, whole sealing by putting goods with a great amount to give them discount.

As our project comes within the concepts of "E-Business", so we will define the main fundamental definitions for this concept :

1.2 E-Business Concepts

1.2.1 E-Business definition

Business transaction that uses network access, computer based systems , and a web browser interface qualifies.

1.2.2 E-Business advantages

- Save time and effort.
- E-Business is not confined only to carry out business transactions using electronic means, but include all of the manufacturing process, production, and that by reducing the time required for the completion of a series of actions.
- Improved customer service before , during , and after the sale.
- E-Business allow shopping via the Internet through direct electronic communication between dealers, so they dispense with paper documents and necessary expenses.
- Improved relationships with suppliers and the financial community .
- Increased economic return on stockholders and owner investments.^[5]

1.2.3 E-Business constraints

- High costs .
- Security concerns: viruses spread, attack, Break into e-commerce sites and information on the robbery and the destruction of the database
- Immature on unavailable software.^[4]

1.2.4 E-Business transaction types

- **Business to consumer (B2C):** are transaction between organization and consumer.
- **Business to business (B2B):** are transaction between organization and another organization.

- **Consumer to consumer (C2C):** are transaction between consumer and another consumer.
- **Consumer to government (C2G):** are transaction between consumer and government.
- **Business to government (B2G):** are transaction between organization and government.^[4]

And since firms differ at the level of E-Business adoption, firms can be classified to three categories:

1. **Brick And Mortal:** A traditional "street-side" business that deals with its customers face to face in an office or store that the business owns or rents.
2. **Click And Mortal:** A type of business model that includes both online and offline operations, which typically include a website and a physical store.
3. **Virtual On click Only Organization:** A type of business model that includes online only, such as yahoo corporation.^[5]

In this time Bravo Mall use Brick and Mortal business model, so we will convert Bravo Mall from Brick and Mortal to Click And Mortal because Web-based businesses usually have lower costs and greater flexibility than brick-and-mortar operations.

1.3 Distributed database (DDB)

A distributed database is a database that is under the control of a central database management system in which storage devices are not all attached to a common CPU. It may be stored in multiple computers located in the same physical location, or may be dispersed over a network of interconnected computers.

1.3.1 Advantages of distributed database

- Increase the reliability and availability of data.
- Increase performance and efficiency.
- Continually work system without interrupt.
- Load distribution.
- The possibility of modification to the system, add or delete other systems on the database without effect on other systems.
- Economically: Distributed data base is economic, as it reduces the costs required to establish a network of small computers, under the management of large computer.

1.3.2 Disadvantages of distributed database

- Managing and controlling is complex, there is less security because data is at so many different sites.
- Networking: If the network gets saturated then problems with transmission will surface.
- Software: There is currently very little less software support for Distributed system.
- Troubleshooting: Troubleshooting and diagnosing problems in a distributed system can also become more difficult, because the analysis may require connecting to remote nodes or inspecting communication between nodes.

1.3.3 Types of distributed database

- **Homogenous distributed database:**

In this type of distributed database servers use the same type of database, such as Oracle database, and the server does not carry the same operating system.

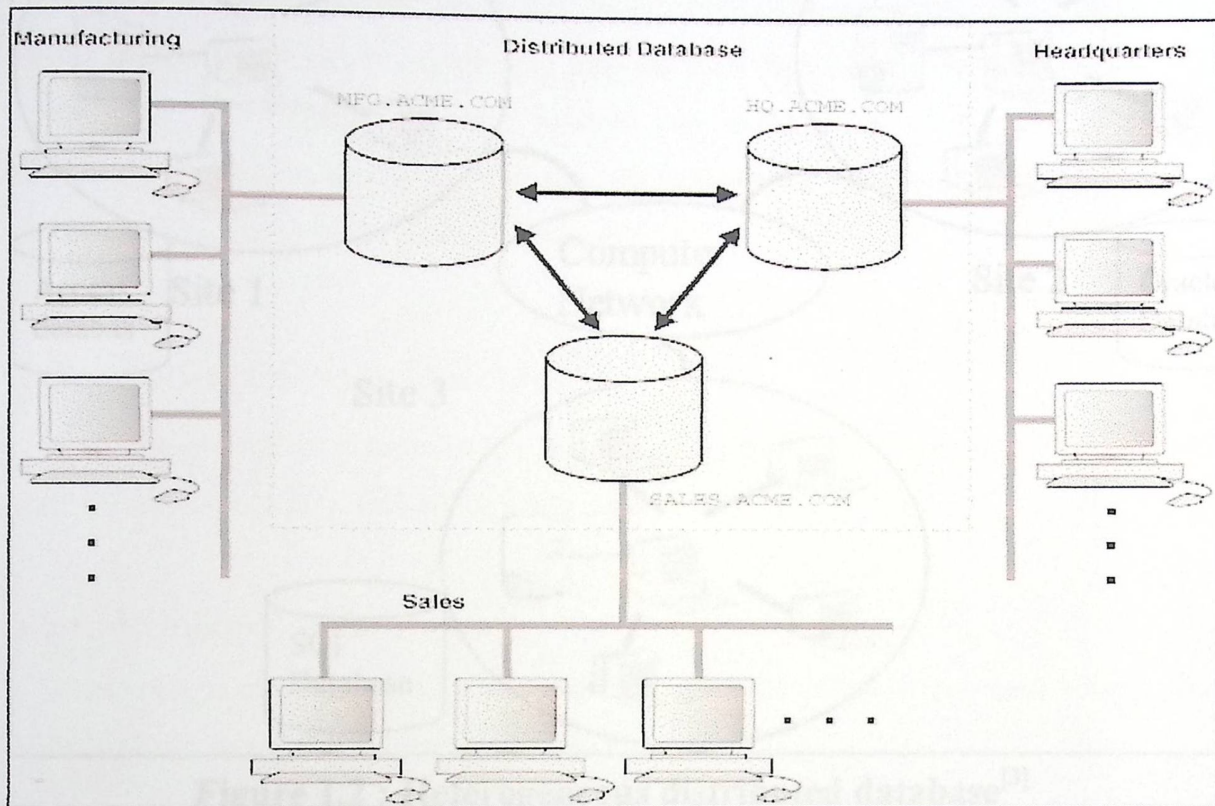


Figure 1.1: Homogenous distributed database^[2]

So, we will apply in this system homogenous distributed system, since to achieve the following advantages:

- Simple to user appear to user as a single system
- High performance and efficiency are aware of each other and agree to cooperate in processing user requests
- Easy communication between databases
- Easier expansion of sites have identical software

- **Heterogonous distributed database:**

This type of distributed database server uses a database of its own and different from another server.

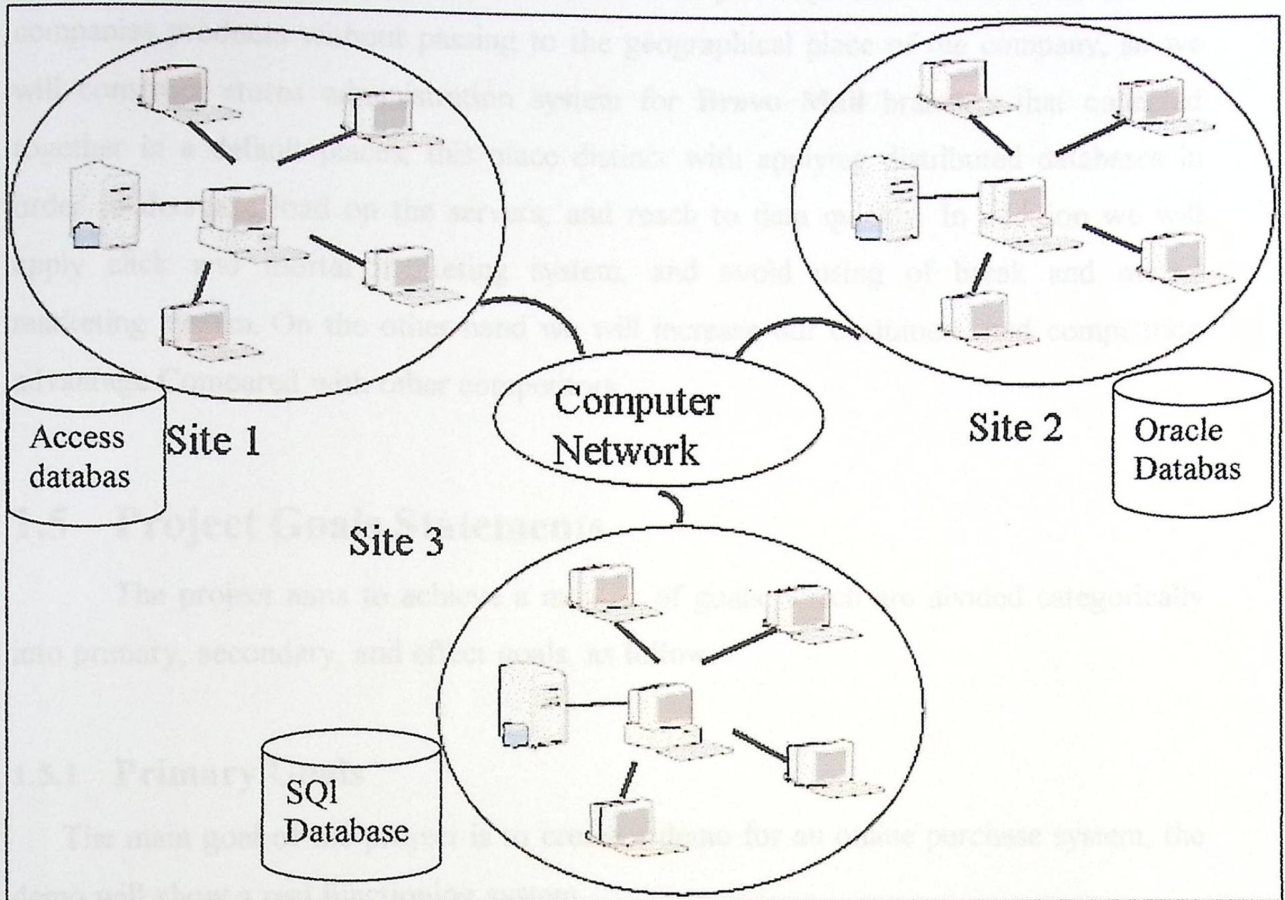


Figure 1.2 : Heterogeneous distributed database^[3]

So, we will apply in this system homogenous distributed system, since to achieve the following advantages:

- **Simple to use:** appears to user as a single system
- **High performance and efficiency:** are aware of each other and agree to cooperate in processing user requests.
- **Easily communication between databases.**
- **Easier expansion:** all sites have identical software

1.4 Problem Statements

The problem formed by finding many companies that desire to display their goods for costumers and clients quickly in a simple way. Those clients can see the companies products without passing to the geographical place of the company, so we will construct stores administration system for **Bravo Mall** branches that collected together in a default places, this place distinct with applying distributed databases in order to decrease load on the servers, and reach to data quickly. In addition we will apply click and mortal marketing system, and avoid using of break and mortal marketing system. On the other hand we will increase our costumers, and competition advantage Compared with other competitors.

1.5 Project Goals Statements

The project aims to achieve a number of goals, which are divided categorically into primary, secondary, and effect goals, as follow:

1.5.1 Primary Goals

The main goal of the project is to create a demo for an online purchase system, the demo will show a real functioning system.

1. Convert **Bravo Mall** from Brick and Mortal to Click and Mortal because Web-based businesses usually have lower costs and greater flexibility than brick-and-mortal operations.
2. Facilitate the shopping processes by allow customers to access web sites and interfaces to do shopping operations.
3. Help customers, so that they remain permanently connected to the market at any time, any place.
4. More than a customer can receive the service in more than one time.
5. Achieve usability for customers through perform human interaction with interfaces.
6. Comprehensive security study is an essential component of the project to protect the system against illegal access and hacking attacks.

1.5.2 Secondary Goals

1. Add new revenue models into the system.
2. Identifying the needs of customers.
3. Identify market segments.
4. in additional to the previous objectives , the project aims to implement what we study and learn in the previous courses on our system, and to increase our ability to participate in team work .

2.1 Introduction

2.2 Constraints

2.3 Alternatives

2.4 Risks

2.5 Risks Solutions

2.6 Feasibility study

2.6.1 The Sources and costs of
the first Alternative

2.6.2 The Sources and costs of
the second Alternative

2.6.3 The Sources and costs of
the third Alternative

2.7 Choose the best solution for
alternatives

2.8 Time Schedule

CHAPTER TWO

System planning

2.1 Introduction

2.2 Constraints

2.3 Alternatives

2.4 Risks

2.5 Risks Solutions

2.6 Feasibility study

2.6.1 The Sources and costs of
the first Alternative

2.6.2 The Sources and costs of
the second Alternative

2.6.3 The Sources and costs of
the third Alternative

2.7 Choose the best solution for
alternatives

2.8 Time Schedule

2.1 Introduction:

In this chapter we will explain the system plan and resources it needs, constraints and risks that will face, and solutions to these risks, and will also clarify the alternatives and the economic feasibility of these alternatives, and considers this stage is the initial phase in building the system since it involves a complete listing of the sources and costs of building the system.

2.2 Constraints:

There are several obstacles that may face the system during the construction process:

- **Lack** of time according team work.
- The **costs** should be within the planned budget
- Must be able to **develop** and **maintenance**.

2.3 Alternatives:

This system can be applied in three ways:

- Design site for each branches but in this case we will face a financial problems and customer confusion.
- Design a centralized database for all branches, but in this case we will face load problem and the problem of protecting data on the site and protect the site itself.
- Design a comprehensive site for several branches of the same company and many customers and this site uses a feature of distributed databases which allow the use of more than one server for databases.

2.4 The Risks:

- The emergence of new requirements during the construction of the system or after the completion.
- There was a flaw in **hardware or software** used in the construction of the system during work.
- **Increased costs** for the planned cost.
- Communication problems between **distributed databases**.

2.5 Risks Solutions:

- Study of the system well to determine all the requirements needed to build.
- Make **backup copies** on external storage devices such as Flash Memory and CD-ROM.
- Work on the **costs** of providing a backup in case of requests to build the system in question.
- Using applications that support Communication between **distributed databases**.

2.4 The Risks:

- The emergence of new requirements during the construction of the system or after the completion.
- There was a flaw in **hardware or software** used in the construction of the system during work.
- **Increased costs** for the planned cost.
- Communication problems between **distributed databases**.

2.5 Risks Solutions:

- Study of the system well to determine all the requirements needed to build.
- Make **backup copies** on external storage devices such as Flash Memory and CD-ROM.
- Work on the **costs** of providing a backup in case of requests to build the system in question.
- Using applications that support Communication between **distributed databases**.

2.6 Feasibility study:

2.6.1 The Sources and costs of the first Alternative:

Sources and costs of the expected physical developments:

The following table shows the **reactions of the expected development costs** for the development of building site for each branch

Physical Components	Descriptions	Cost
Computer	Processor Core 2due 2.4 G Ram 4Gbps Hard Disk 500 Gbps Dvd-Rom Network card nvidia 15.6" KeyBoard Mouse Wireless internet	1000\$
Printer	Canon Pixma Mp190	100\$
Flash Memory	16 Gbps	28\$
Total		1128\$

Table 2.1 : Sources and costs of the expected physical developments

Feasibility study:

The Sources and costs of the first Alternative:

Sources and costs of the expected physical developments:

Following table shows the reactions of the expected development costs for the
element of building site for each branch.

Components	Descriptions	Cost
Computer	Processor Core 2due 2.4 G	1000\$
	Ram 4Gbps	
	Hard Disk 500 Gbps	
	Dvd-Rom	
	Network card	
	nvidia 15.6"	
	KeyBoard	
	Mouse	
	Wireless internet	
	Canon Pixma Mp190	100\$
	16 Gbps	28\$
Memory		1128\$

Sources and costs of the expected physical developments

- Sources and costs of the expected Software developments:

The following table shows the **reactions of the expected software costs** for the development of building site for each branch:

Software Components	Cost
Operating System: Microsoft windows 7 Ultimate	100\$
Microsoft visual studio 2005, SQL database	200\$
Internet information server (IIS)	100\$
Microsoft Office 2003	100\$
Wireless internet	30\$
Web tools: HTML, JavaScript	Free
Flash Program	100\$
3dmax	200\$
Total	830\$

Table 2.2 : Sources and costs of the expected Software developments

- Sources and costs of the expected human development:

The following table shows the **reactions of the expected human costs** for the development of building site for each branch:

Human Component	Hour/ week	Cost/Hour	Total/week
4	15	10\$	450\$

Table 2.3 : Sources and costs of the expected human development

Human development costs during the **28 week** period which is expected to develop the system:

$$450\$ * 28 \text{ week} = 12600\$$$

Human development costs during **one month**:

$$450\$ * 4 \text{ weeks} = 1800\$$$

- The expected Total costs to develop and build site for each branch:

The following table shows the reactions of the expected total costs for the development of building site for each branch:

Physical Costs	Software Costs	Human Costs	Total/Month
1128\$	830\$	450\$	2408\$

Table 2.4 : The expected Total costs to develop and build site for each branch

2.6.2 Sources and Costs of the second alternative:

- Sources and costs of the expected physical developments:

The following table shows the reactions of the expected development costs for the development of building site for one database for all branches

Physical Components	Descriptions	Cost
Computer	Processor Core 2due 2.4 G Ram 4Gbps Hard Disk 500 Gbps Dvd-Rom Network card nvidia 15.6" KeyBoard Mouse Wireless internet	1000\$
Printer	Canon Pixma Mp190	100\$
Flash Memory	16 Gbps	28\$
Total		1128\$

Table 2.5 : Sources and costs of the expected physical developments

- Sources and costs of the expected Software developments:

The following table shows the reactions of the expected software costs for the development of building site for one database server for all branches:

Software Components	Cost
Operating System: Microsoft windows 7 Ultimate	100\$
Microsoft visual studio 2005, SQL database	200\$
Internet information server (IIS)	100\$
Microsoft Office 2003	100\$
Wireless internet	30\$
Web tools: HTML, JavaScript	Free
Flash Program	100\$
3dmax	200\$
Total	830\$

Table 2.6 : Sources and costs of the expected Software developments

- Sources and costs of the expected human development:

The following table shows the reactions of the expected human costs for the development of building site for one database server for all branches:

Human Component	Hour/ week	Cost/Hour	Total/week
4	15	10\$	450\$

Table 2.7 : Sources and costs of the expected human development

Human development costs during the 28 week period which is expected to develop the system:

$$450\$ \times 28 \text{ week} = 12600\$$$

Human development costs during **one month**:

$$450\$ \times 4 \text{ weeks} = 1800\$$$

- The expected Total costs to develop and build site for each branch:

The following table shows the reactions of the expected total costs for the development of building site for each branch:

Physical Costs	Software Costs	Human Costs	Total/Month
1128\$	830\$	450\$	2408\$

Table 2.8 : The expected Total costs to develop and build site for each branch

2.6.3 Sources and Costs of the third alternative:

- Sources and costs of the expected physical developments:

The following table shows the reactions of the expected development costs for the development of building site for distributed database (DDB) for all branches

Physical Components	Descriptions	Cost
Computer	Processor Core 2due 2.4 G Ram 4Gbps Hard Disk 500 Gbps Dvd-Rom Network card nvidia 15.6" KeyBoard Mouse Wireless internet	1000\$
Printer	Canon Pixma Mp190	100\$
Flash Memory	16 Gbps	28\$
Total		1128\$

Table 2.9 : Sources and costs of the expected physical developments

- Sources and costs of the expected Software developments:

The following table shows the **reactions of the expected software costs** for the development of building site for distributed database (DDB) for **all branches**:

Software Components	Cost
Operating System: Microsoft windows 7 Ultimate	100\$
Microsoft visual studio 2005, SQL database	200\$
Internet information server (IIS)	100\$
Microsoft Office 2003	100\$
Wireless internet	30\$
Web tools: HTML, JavaScript	Free
Flash Program	100\$
3dmax	200\$
Total	830\$

Table 2.10 : Sources and costs of the expected Software developments

- Sources and costs of the expected human development:

The following table shows the **reactions of the expected human costs** for the development of building site for distributed database(DDB) for **all branches**:

Human Component	Hour/ week	Cost/Hour	Total/week
4	15	10\$	450\$

Table 2.11 : Sources and costs of the expected human development

Human development costs during the **28 week** period which is expected to develop the system:

$$450\$ * 28 \text{ week} = 12600\$$$

Human development costs during **one month**:

$$450\$ * 4 \text{ weeks} = 1800\$$$

- The expected Total costs to develop and build site for each branch:

The following table shows the **reactions of the expected total costs** for the development of building site using distributed database (DDB):

Physical Costs	Software Costs	Human Costs	Total/Month
1128\$	830\$	450\$	2408\$

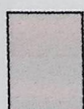
Table 2.12 : The expected Total costs to develop and build site for each branch

2.8 Time scheduling:

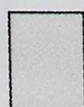
Weeks \ Tasks	2	4	6	8	10	12	14	16	18	20	22	24	26	28
System Plan														
Requirements analysis														
System Design														
Development and Programming														
System Testing														
System Maintenance														
Documentation														

Table 2.13 : Time Scheduling

Key For This Table:



Actual time.



Expected time.

CHAPTER THREE

System Requirements analysis

- 3.1 Introduction
- 3.2 System Requirements
 - 3.2.1 Functional System requirements
 - 3.2.2 Nonfunctional system requirements
 - 3.2.3 Describe of the functional system requirements.
- 3.3 Standards of verification
- 3.4 Context Diagram
- 3.5 Data Flow Diagrams

3.1 Introduction

The process of gathering requirements and analysis of the basic steps is to develop and complete of any system, In this chapter we will collect non-functional and functional requirements, so this chapter will contain **Context Diagram and Data Flow Diagram**.

The system includes a set of functional requirements for several categories of users who are not registered, and the functional requirements for users who registered and includes the customer, in addition to the requirements of functionalities the site administrator.

• Functional requirements for users who are not registered:

1. Review and improve the site and view the contents of the site and everything new
2. The possibility Contact to the site administrator to add a note or comment or service request through the special consultation page.
3. The possibility of the registration in the site

• Functional requirements for users who are registered:

Registered users of the site can either be user applications or user products and all the user including the following:

• Order User:

The user can after log on and verification of the user name and password of the order user and the possibility of review from these orders or delete part of it and follow up the progress of operations

• Functional requirements for web administrator:

1. The site administrator has the permissions of addition, deletion, modification, activate or not activation of the contents of the site, which includes the main groups and sub-products so that he can attach files and pictures with each product

3.2 System Requirements

This system includes a set of requirements divided into **functional requirements** and **non-functional** will be clarified as follows:

3.2.1 Functional system requirements:

The system includes a set of **functional requirements** for several categories of users who are **not registered**, and the functional requirements for users who **registered** and includes the consumer, in addition to the requirements of functionalities the site **administrator**.

- **Functional requirements for users who are not registered:**

1. Review and browse the site and view the contents of the site and everything new.
2. The possibility Contact to the site administrator to add a note or comment or service request through the special connection page.
3. The possibility of the registration in the site.

- **Functional requirements for users who are registered:**

Registered users of the site can either be user applications or user products and all the user including the following:

- ✓ **Order User:**

The user can after log on and verification of the **user name** and **password** of the order user and the possibility of retreat from these orders or delete part of it and follow up the progress of operations.

- **Functional requirements for web administrator:**

1. The site administrator has the permissions of **addition, deletion, modification, activate or not activation** of the contents of the site, which includes the major groups and sub-products so that he can attach files and pictures with each product.

2. The site **administrator** has the **permissions** for activation or not activate of the registered site users.
3. **Administrator Control in Orders and treatment** and includes change the status of your order, add, modify, delete order.
4. **Administrator Control and process advertisements added** to the site and processed, and include or allow them to prevent the display or delete the announcement.

3.2.2 Nonfunctional system Requirements:

1. Work Environment

- The proposed system is E-Business system is designed to offer products to end users and the possibility of work orders and the system is characterized by the existence possibility of distributing the database on more than one server depending on the branch.
- The system will be work on **ASP.NET technology**.
- The system do the required goal from him in an **easy and understandable** method for the users.
- The system is **flexible**, so that the user input by the administrator on its own page.
- The system is available to the user, so that it can access **services anywhere, anytime**.

2. The application interface

It is based on the principles of **human computer interaction**, so that it is suitable for using colors to the eyes, the interface will be designed in a manner to appropriate to the subject and the target group, and that the user can **navigate** easily between the site pages.

3. Security

- Do not allow any user access to another user page.
- The user can't log in without his correct **username** and **password**.
- Do not allow access by **any user** to the database.

4. Speed

- Speed **access** to the system .
- Speed of **interaction** between the system and the user through the application interfaces so that they are arranged, clear and easy to use, so the user can browse the site and exploring its contents easily.

5. Usability

The system is characterized by ease of use, in order to achieve the following:

- Consistency: The stability of the coordination of system pages.
- Readability of the pages content.
- Accessibility: access to the system pages easily.
- Interactivity: interactive between user and system.
- Updatable: updated Easily by the system administrator.

6. Dependency

The **accuracy** and **reliability** of the system, so that you can rely on this system and the accuracy of the data in it.

3.2.3 Description of the functional system requirements

1. Description of the functional system requirements for the user who not registered in the site

- Browsing and exploring the site

Function	Browsing and exploring the site
Description	Possibility of a browsing the site and exploring by the users who are not registered for the site and access to content, products and ads
Inputs	Does not exist
Source	The special page for the system
output	Display the Pages required by a visitor for the content and products.
Objective	Display the products and contents of the site for users are not registered.
Requirements	Does not exist.
Conditions before execution	Does not exist.
Conditions after execution	Does not exist.
Procedures	The user request the site and then browse and explore and , access to content, products.

Table 3.1 : Browsing and exploring the site

- **Contact with the site administrator**

Function	Contact with the site administrator
Description	The user who not registered in the system can connecting to the site administrator to add a note or comment or service request through the contact page special.
Inputs	Does not exist
Source	The special page for the system
output	Get the service you ordered, or add a comment or observation.
Objective	Add a note or comment or request for service by contacting with the site administrator and that special contact page.
Requirements	A database to store these observations and comments (Guest)
Conditions before execution	Does not exist (does not need for username and password).
Conditions after execution	Access the user who not registered to the special page to contact with administrator.
Procedures	The user requests access to the site and its contents and navigation and then communicate with the administrator through the contact special page which can add a comment or a note or request service.

Table 3.2 : Contact with the site administrator

- **Registration in the site**

Function	User is logged into the site.
Description	Add the user to the database using the user name and password.
Inputs	Username and password.
Source	The special page for the user registration in the site.
output	New user account.
Objective	User registration in the site and added him to the database.
Requirements	Database for store user data.
Conditions before execution	The user is not registered on the site
Conditions after execution	User registration and storage of your private data in the database.
Procedures	The user selects a user name and password and it is registered on the site, and data are saved in the database to use the user name and password when you login to your account.

Table 3.3 : Registration in the site

2. Description of the functional system requirements for the user registered in the site.

- The user logs on to the system.

Function	User is logged into the site.
Description	Enable the user to log in into the system to access to its his pages.
Inputs	Username and password.
Source	The special page for the user registration in the site.
Output	Browse the required page.
Objective	Enable the user to access to his pages.
Requirements	Input the correct username and password.
Conditions before execution	The user is not registered on the site
Conditions after execution	The user to access to his pages.
Procedures	The user does enter his a user name and password, and it is compared with data stored in the database, if the data is entered correctly deliver the user to its own page, and browsing and exploring the site

Table 3.4 : The user logs on to the system

- **Work of order user by a user orders**

Function	Work of order user by a user orders
Description	The owner of this account can work orders for products and follow-up processes and can modify the order or delete part of it.
Inputs	Username and password.
Source	The special page for the user registration in the site.
Output	Browse the required page.
Objective	Enable the user to work orders.
Requirements	Input the correct username and password.
Conditions before execution	The user should be registered in the site and should be user orders type.
Conditions after execution	The user to access to his pages and work orders.
Procedures	The user does enter his a user name and password, and browsing the site and specific the products he wants and do orders.

Table 3.5 : Work of order user by a user orders

3. Description of the functional system requirements for the user who not registered in the site.

- **Additions, deletions and non-activation and activation for the contents of the site and modification the database system.**

Function	Additions, deletions and non-activation and activation for the contents of the site and modification the database system.
Description	Enable administrator to add, delete, activate and non-activate for the contents and modification the system database.
Inputs	Username and password.
Source	The special page for administrator.
Output	Modified data in database .
Objective	Enable administrator to Add, delete, non-activate and activate for the contents of the site and modification the database system.
Requirements	Input the correct username and password for administrator.
Conditions before execution	Administrator should have special account for him.
Conditions after execution	Add, delete, activate, non-activate and modify database.
Procedures	The administrator does enter his a user name and password, and access to the required page and do procedures of the addition, deletion, activation, non-activation and modification on the database.

Table 3.6 : Additions, deletions and non-activation and activation for the contents of the site and modification the database system.

- **Addition, deletion and activation or non activation for the registered site users (a user orders, a user products, announcements).**

Function	Addition, deletion and activation or non activation for the registered site users (a user orders, a user products, announcements).
Description	Enable administrator to add, delete, activate and non-activate for the registered users.
Inputs	Username and password.
Source	The special page for administrator.
Output	Database for registered users .
Objective	Enable administrator to Add, delete, non-activate and activate for the registered site user.
Requirements	Input the correct username and password for administrator.
Conditions before execution	Administrator should have special account for him.
Conditions after execution	Add, delete, activate, non-activate and modify database, for the registered site users.
Procedures	The administrator does enter his a user name and password, and access to the required page and do procedures of the addition, deletion, activation, non-activation and modification for the registered site users.

Table 3.7 : Addition, deletion and activation or non activation for the registered site users (a user orders, a user products, announcements)

- **Control Orders and processed by the system administrator**

Function	Control Orders and processed it .
Description	Enable administrator to control of orders and processed.
Inputs	Username and password.
Source	The special page for administrator.
Output	Browse of the special administrator page .
Objective	Enable administrator to control of orders and processed.
Requirements	Input the correct username and password for administrator.
Conditions before execution	Administrator should have special account for him.
Conditions after execution	Orders processing.
Procedures	The administrator does enter his a user name and password, and access to the required page and do procedures of orders processing.

Table 3.8 : Control Orders and processed by the system administrator

3.3 Standards of verification

- **Input of username:**

The minimum number of characters of the user name is six letters or numbers, it is possible that the user name contains the digits.

- **Input of Password:**

The minimum number of characters of the password is six letters or numbers.

- **Access to the database:**

The administrator is the person who allowable for him to access, control and modification to the database.

3.4 Context Diagram

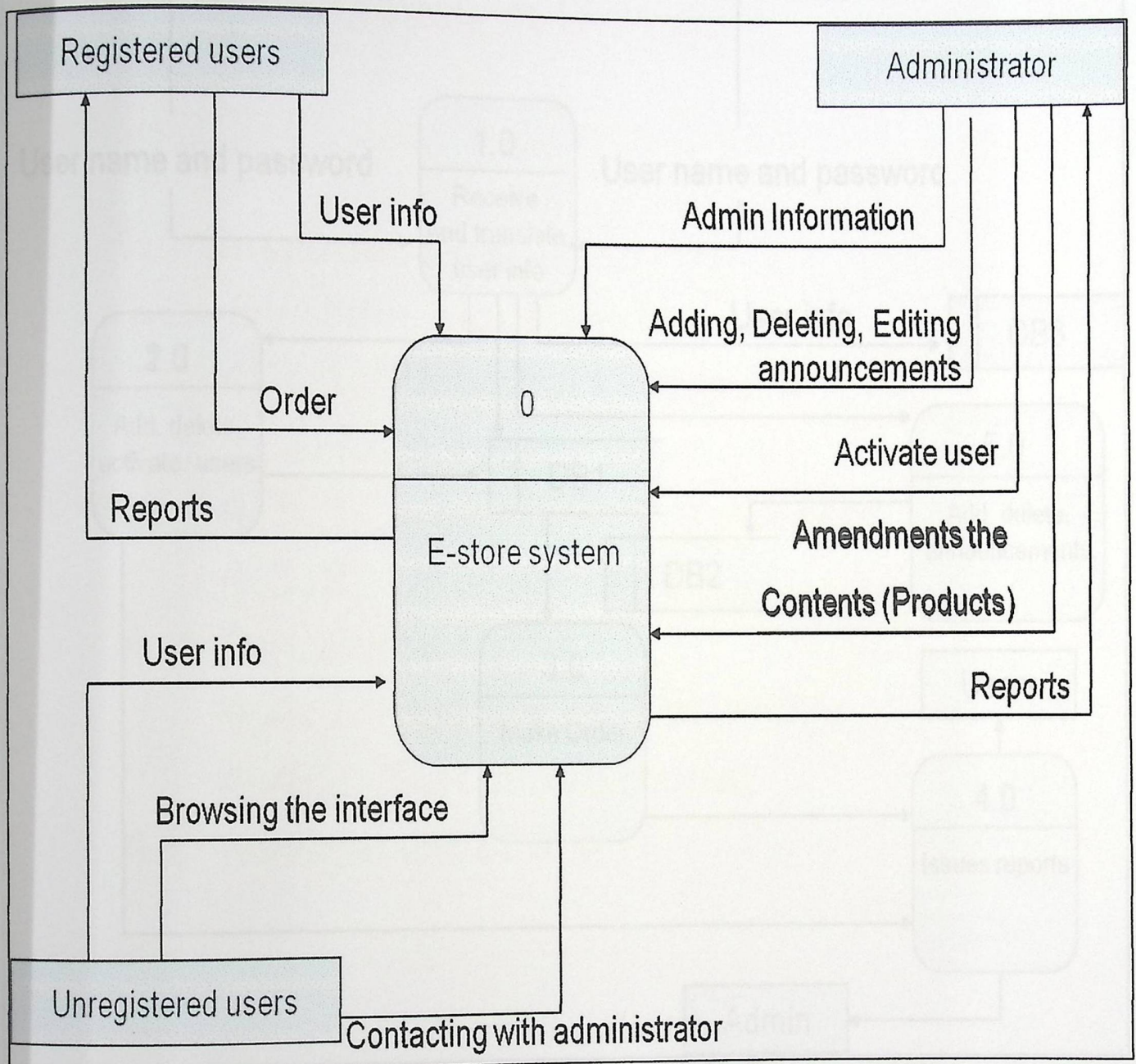


Figure 3.1 : Context Diagram

3.5 Data Flow Diagrams

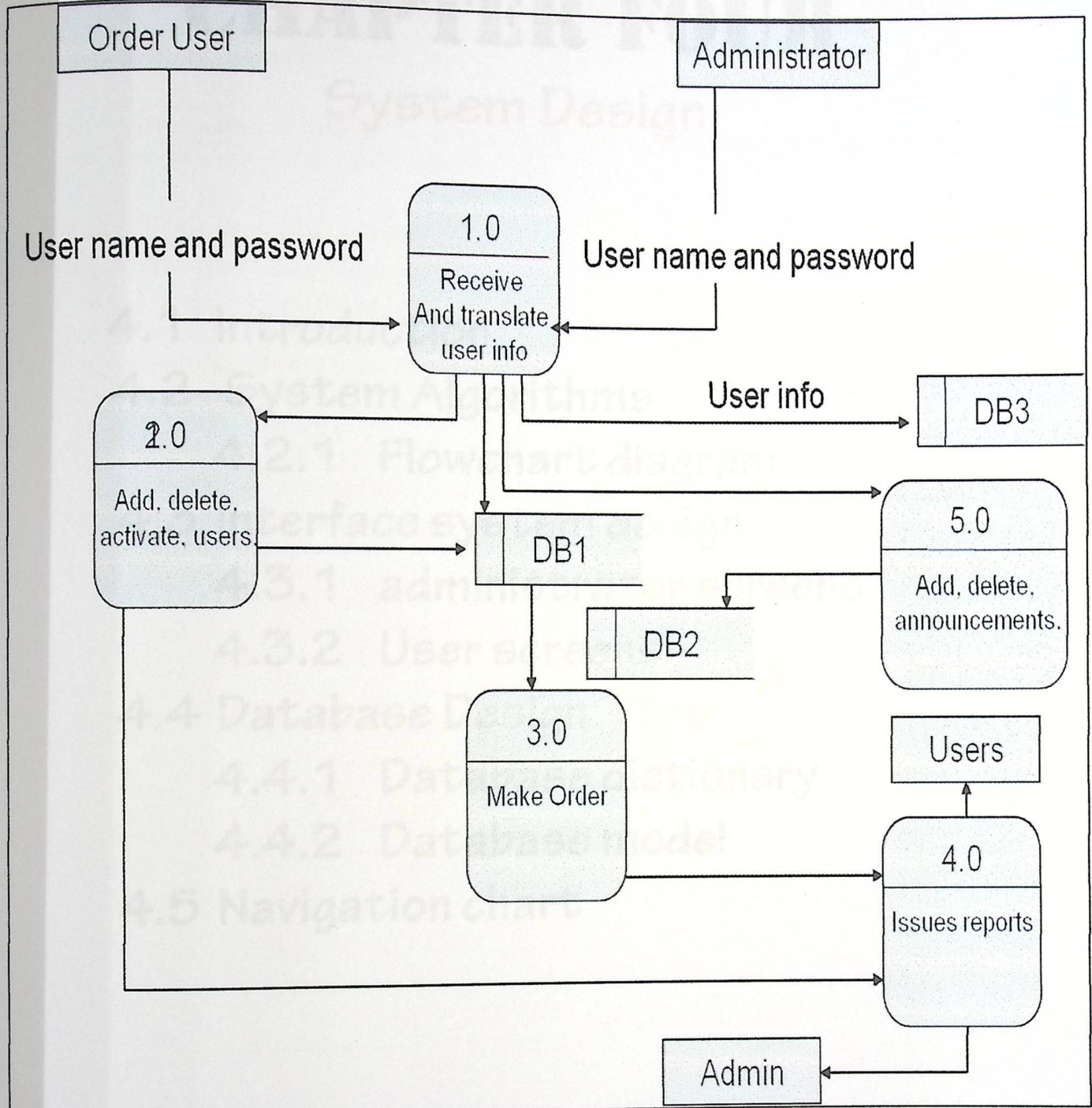


Figure 3.2 : Data Flow Diagram For the E-store system

CHAPTER FOUR

System Design

4.1 Introduction

4.2 System Algorithms

4.2.1 Flowchart diagram

4.3 Interface system design

4.3.1 administrator screens

4.3.2 User screens

4.4 Database Design

4.4.1 Database dictionary

4.4.2 Database model

4.5 Navigation chart

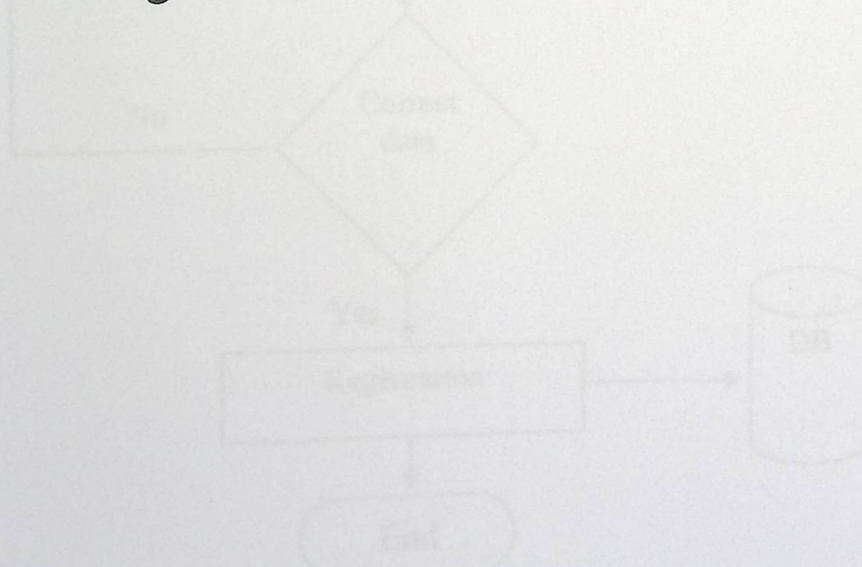


Figure 4.1: User Registering into the system

4.1 Introduction:

This chapter discusses the design of the system, in addition of database design and description, and the interface design.

4.2 System Algorithms

4.2.1 Flowchart diagram

4.2.1.1 User registration into the site

- **Description:** this function allow user to registry at the site, so that the system administrator enter user specific data according to type and stored in the database.
- **User interface :**
 1. Inputs: user data.
 2. Outputs: user registered on the system.
- **Constraints:** the user must enter data properly and according to the restrictions followed in the registration process.
- **Flowchart diagram:**

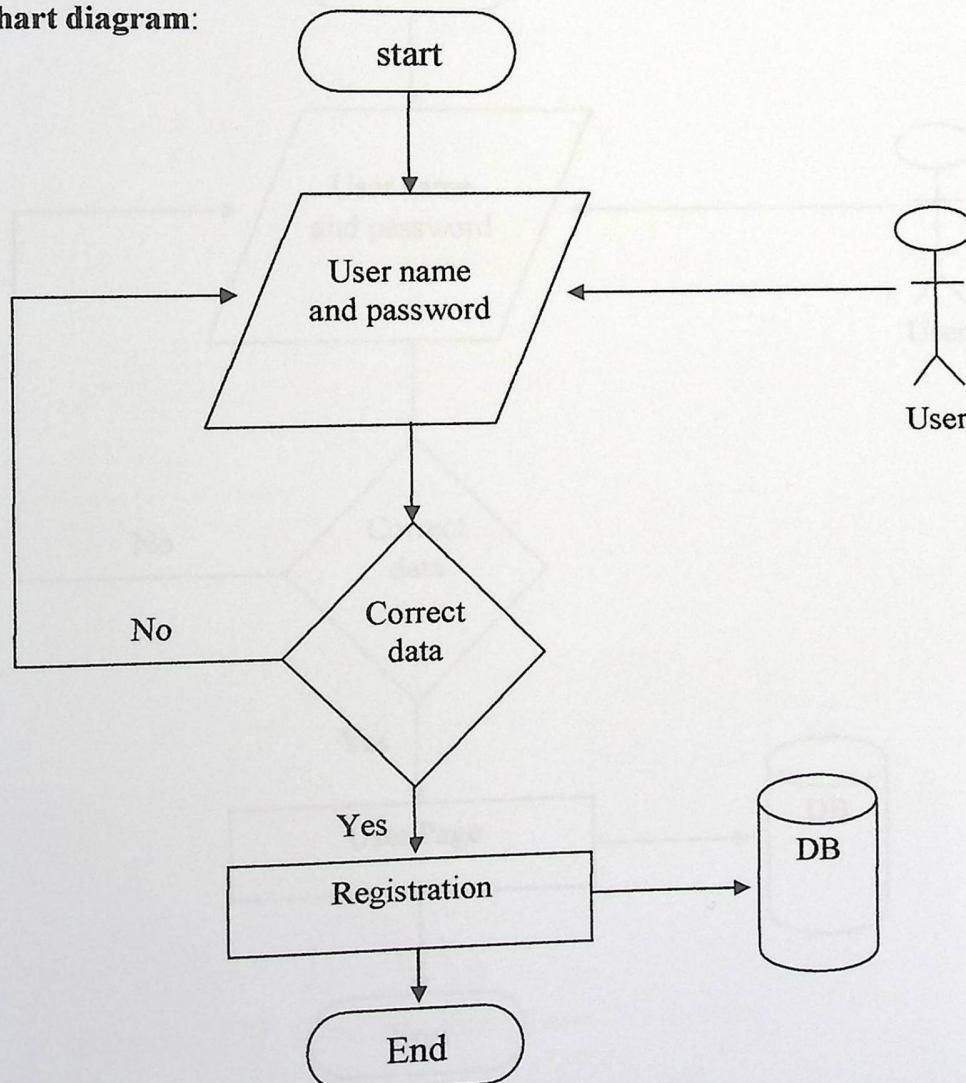


Figure 4.1 : User Registering into the system

4.2.1.2 User login to the system

- **Description:** this function allows users to login to the system.
- **System interface:**
 1. Inputs: username and password.
 2. Outputs: page users.
- **Constraints:** That does not contain the name of the user symbols or special characters such as question mark and exclamation mark, and others.
- **Flowchart Diagram:**

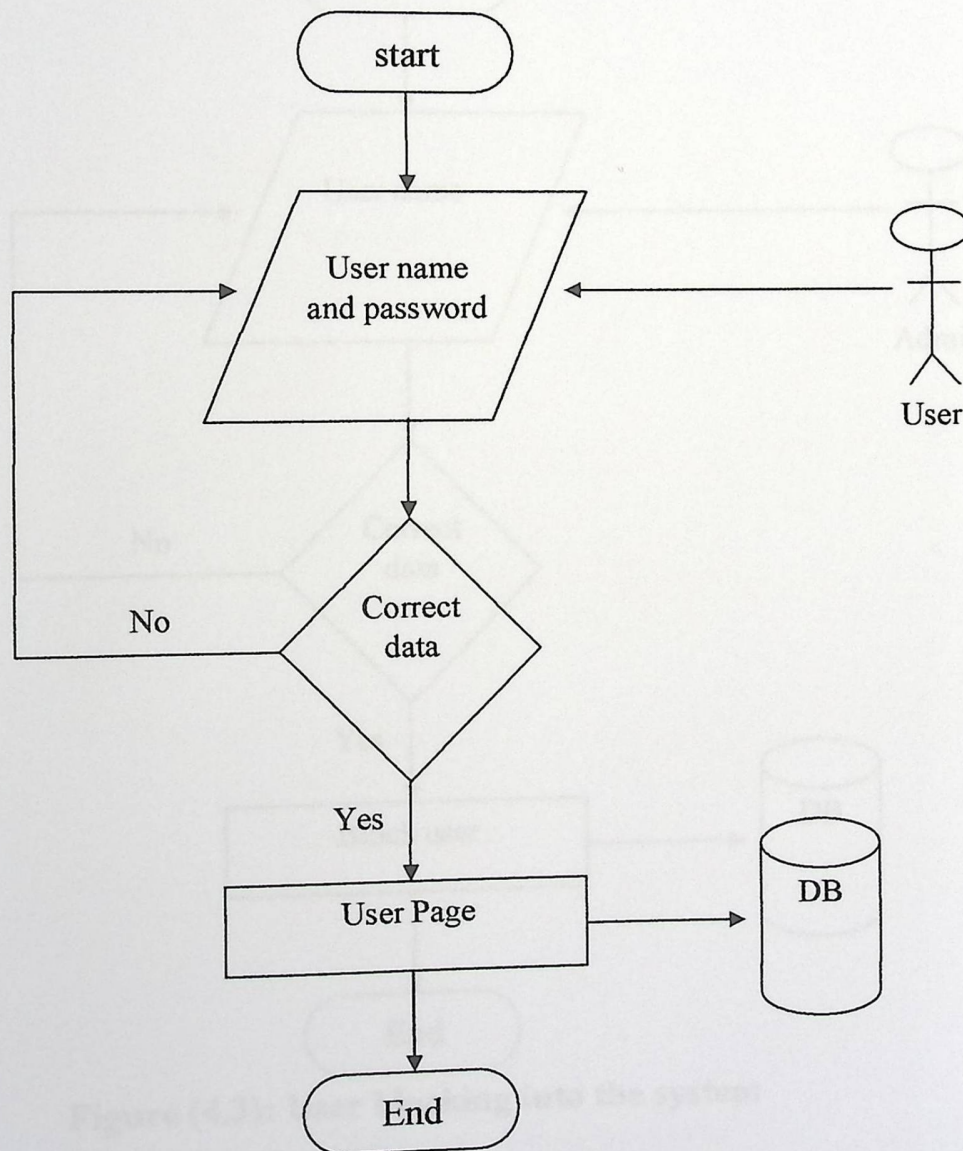


Figure (4.2): User login to the system

4.2.1.3 Block users by the administrator

- **Description:** Through this function the system administrator can block the user.
- **System interface:**
 1. Inputs: username
 2. Outputs: user blocked.
- **Constraints:** reasons for blocking user.
- **Flowchart Diagram:**

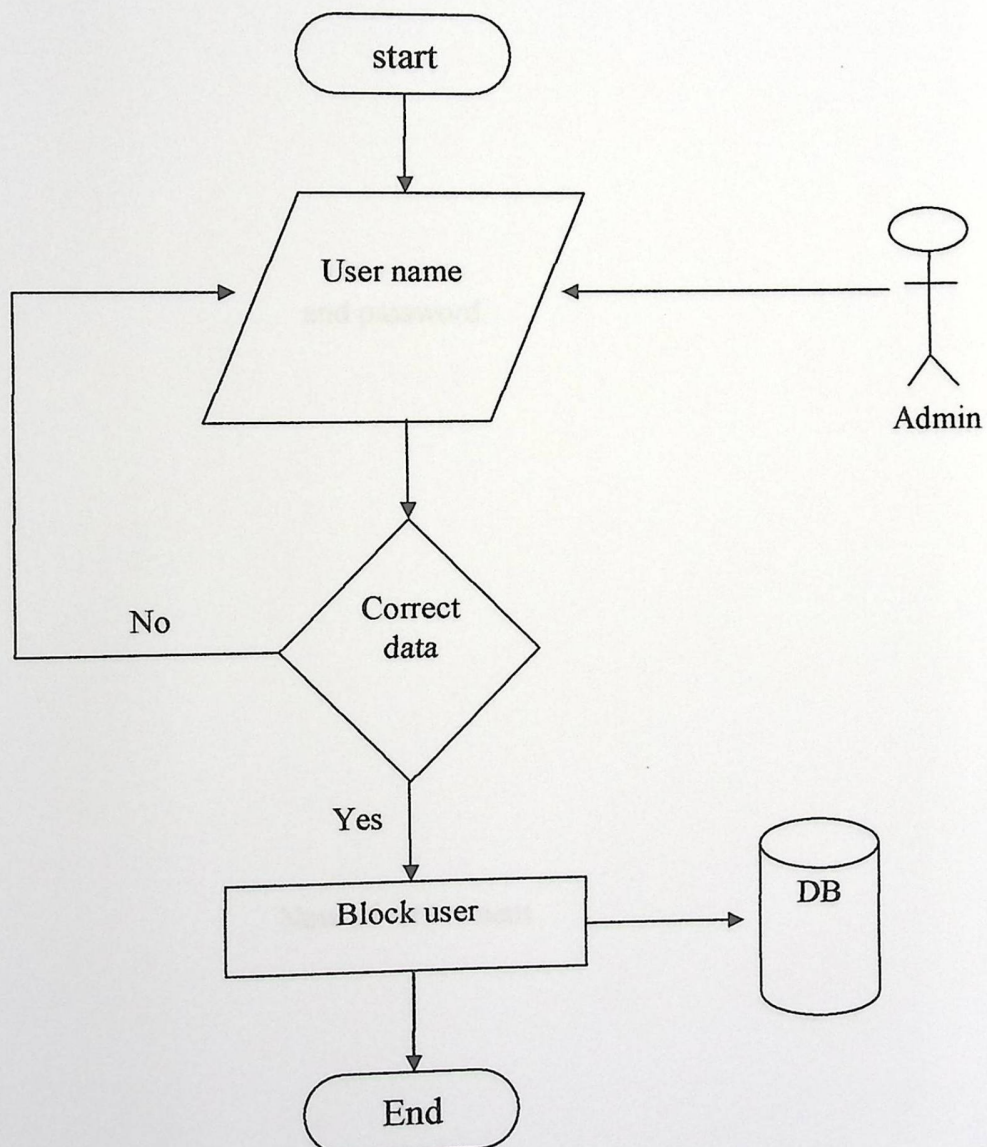


Figure (4.3): User blocking into the system

4.2.1.4 Add advertisement by the administrator

- **Description:** Through this function the system administrator can add a new advertisement into the site.
- **System interface:**
 1. Inputs: username and password
 2. Outputs: show the new advertisement.
- **Constraints:** Not to repeat the advertisement, and must be use picture represented the advertisement.
- **Flowchart Diagram:**

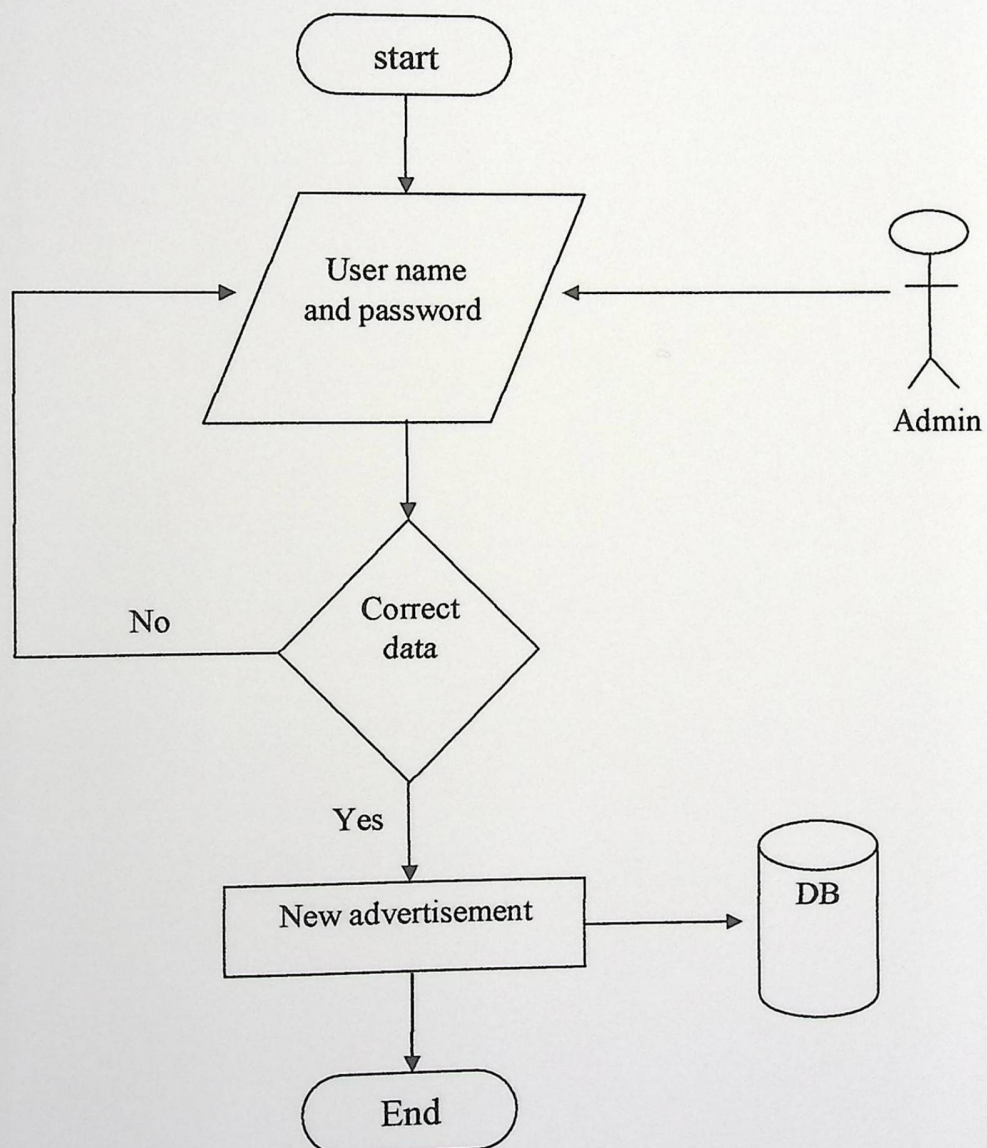


Figure (4.4): Add a new advertisement

4.1.1.5 Add new departments by the administrator

- **Description:** Through this function the system administrator can add new departments, and each department contains some of items.
- **System interface:**
 1. Inputs: username and password
 2. Outputs: add new departments.
- **Constraints:** Not to repeat the departments, and must be use picture represented the departments.
- **Flowchart Diagram:**

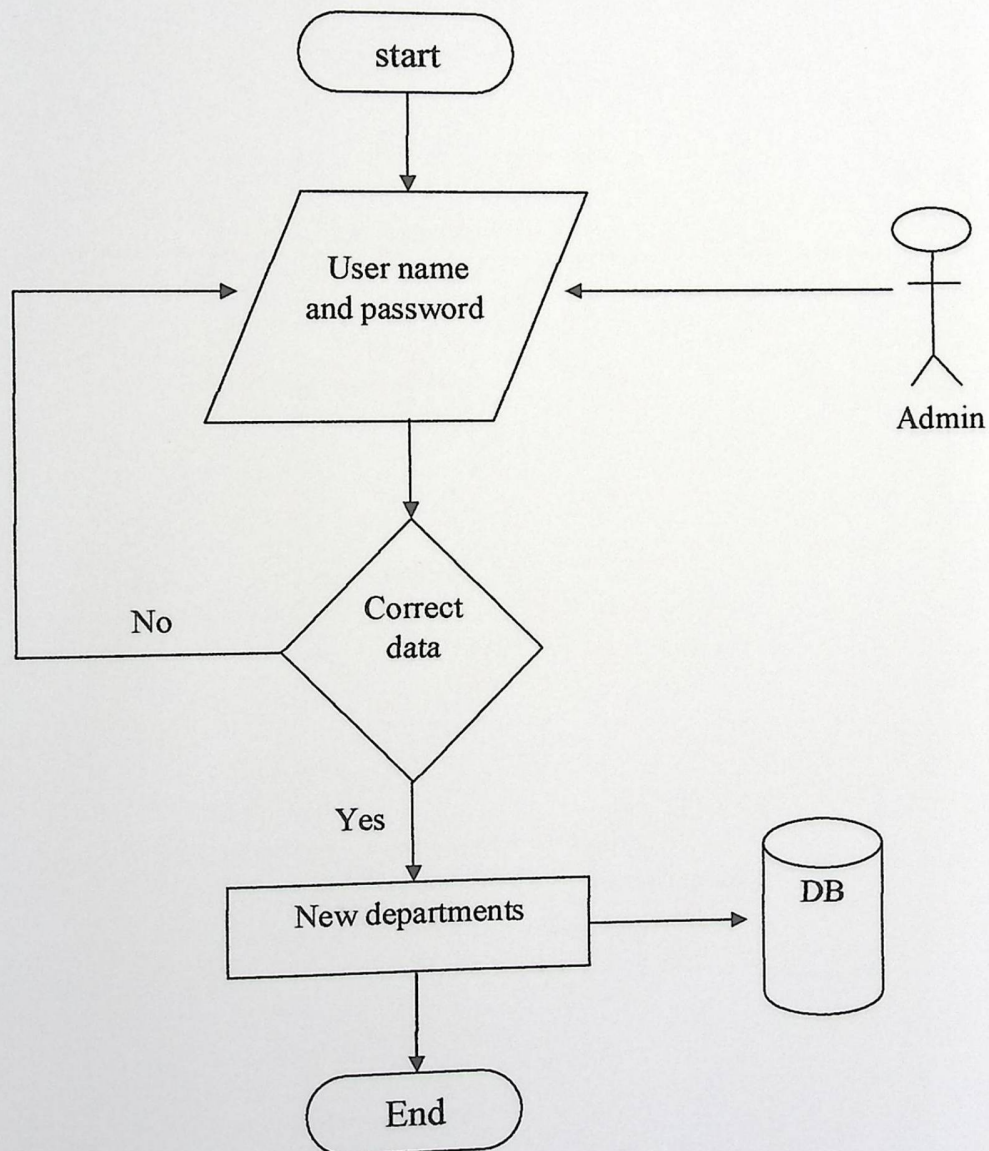


Figure (4.5): Add new departments

4.2.1.6 Add new items by the administrator

- **Description:** Through this function the system administrator can add new items.
- **System interface:**
 1. Inputs: username and password
 2. Outputs: add new items.
- **Constraints:** Not to repeat the items, and must be use picture represented the items.
- **Flowchart Diagram:**

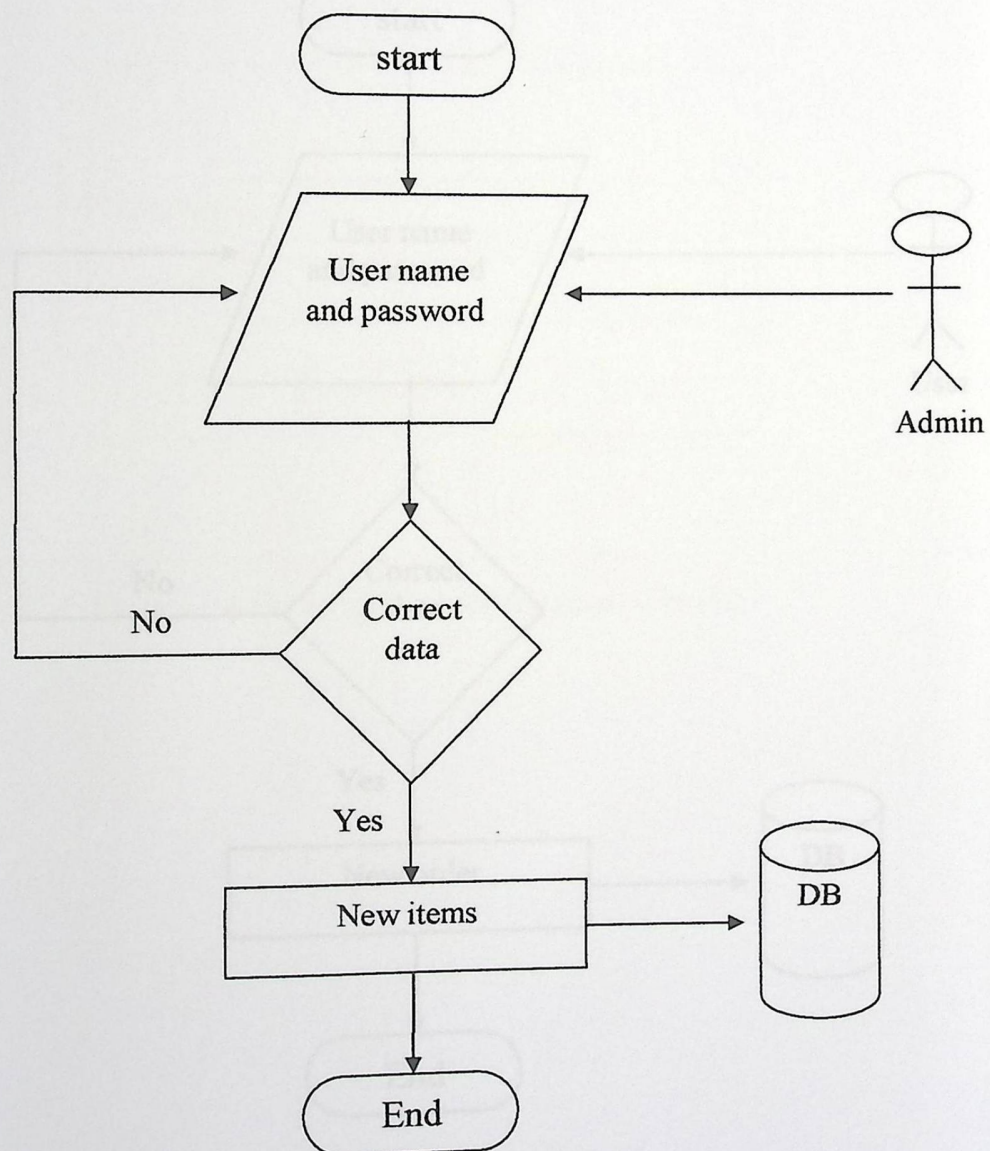


Figure (4.6): Add new items

4.2.1.7 User requests an order

- **Description:** Through this function the user can request a new order after the user add all of items into his cart, and then check out the order.
- **System interface:**
 1. Inputs: username and password
 2. Outputs: add new orders.
- **Constraints:** user must enter Bravo card number correctly.
- **Flowchart Diagram:**

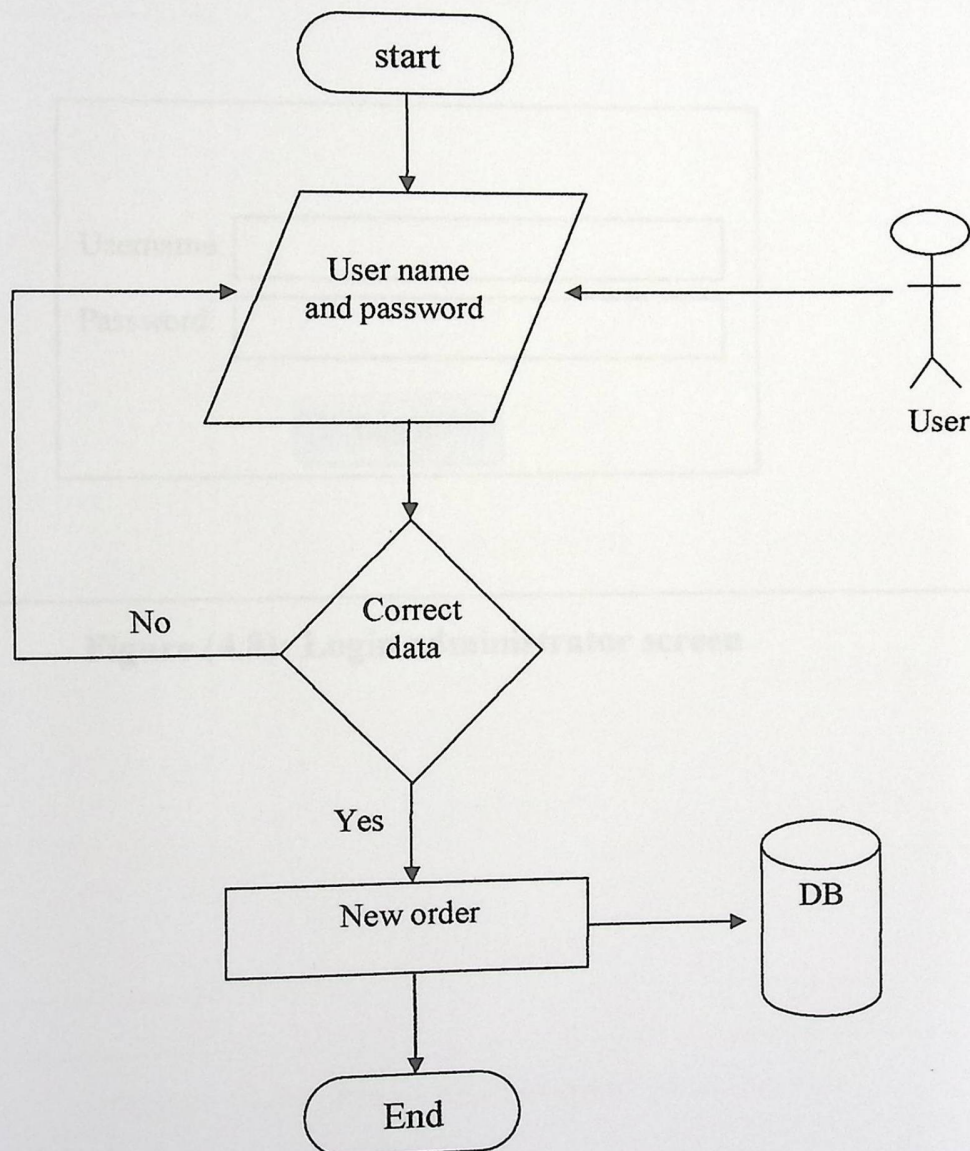


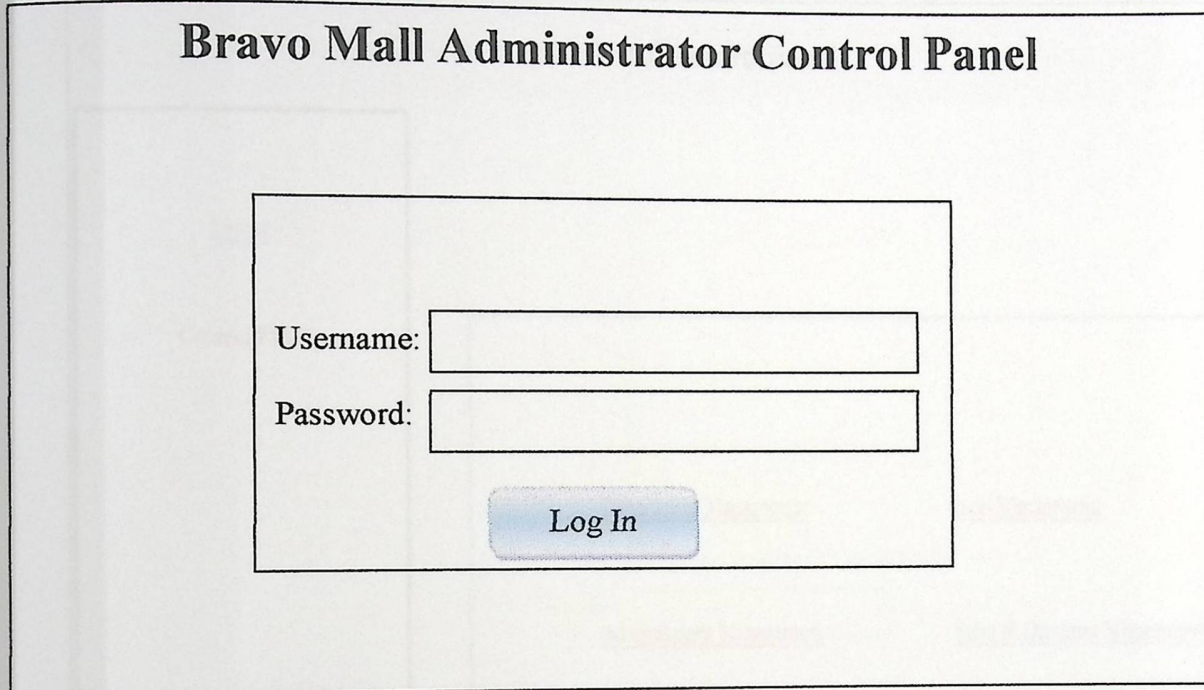
Figure (4.7): user request a new order

4.3 Interface system design

4.3.1 Administrator screens :

1. login screen:

This page allows the **administrator** to **access to the system** to be able to do his own operations and the exercise his permissions.



The image shows a web interface titled "Bravo Mall Administrator Control Panel". Inside a rectangular frame, there is a login form. The form contains two text input fields: the first is labeled "Username:" and the second is labeled "Password:". Below these fields is a blue button with the text "Log In".

Figure (4.8): Login administrator screen

2. Bravo mall control panel:

This page allows the **administrator to be able to do his own operations and the exercise his permissions**. And he can move to other pages control from this page.

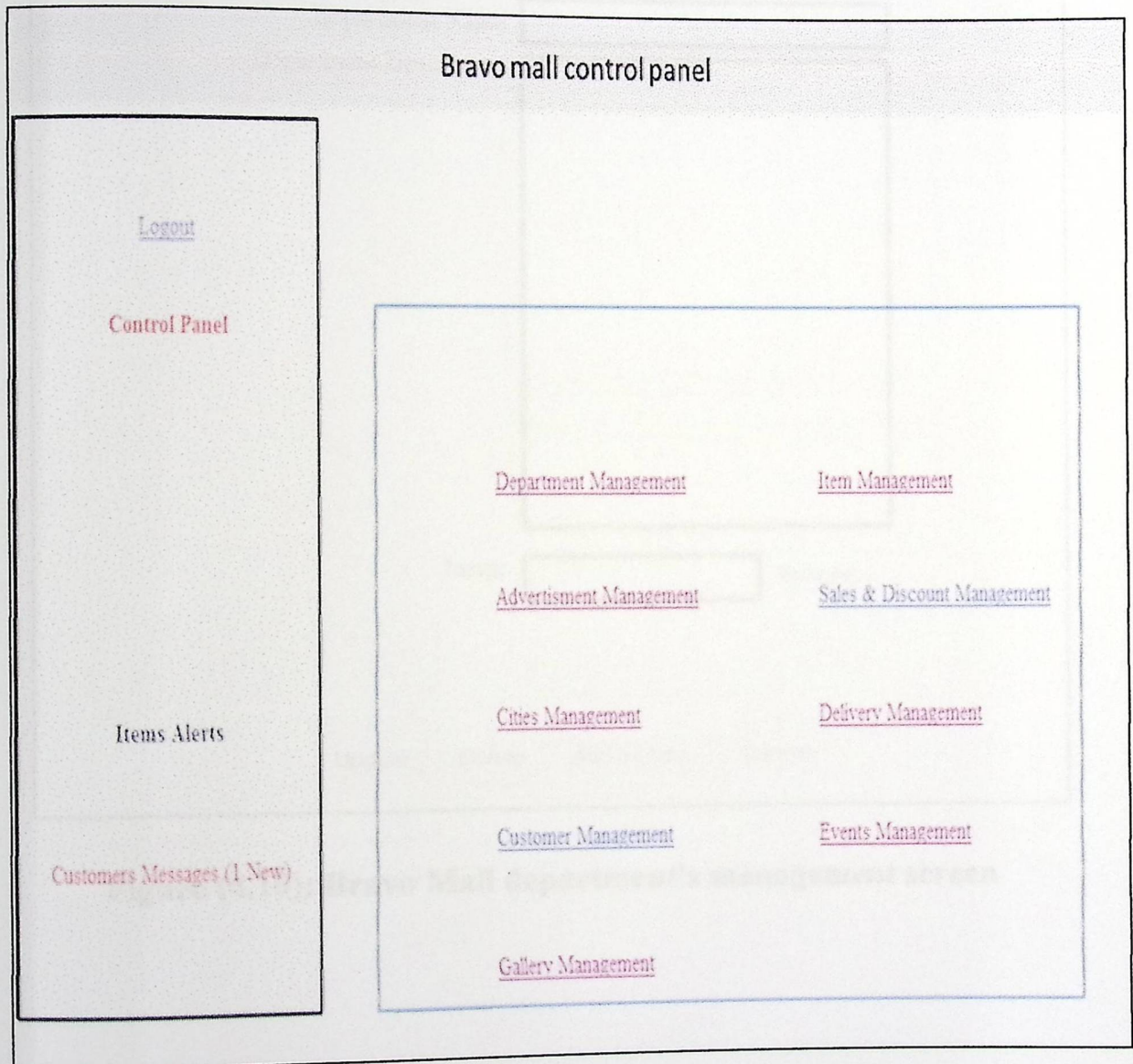
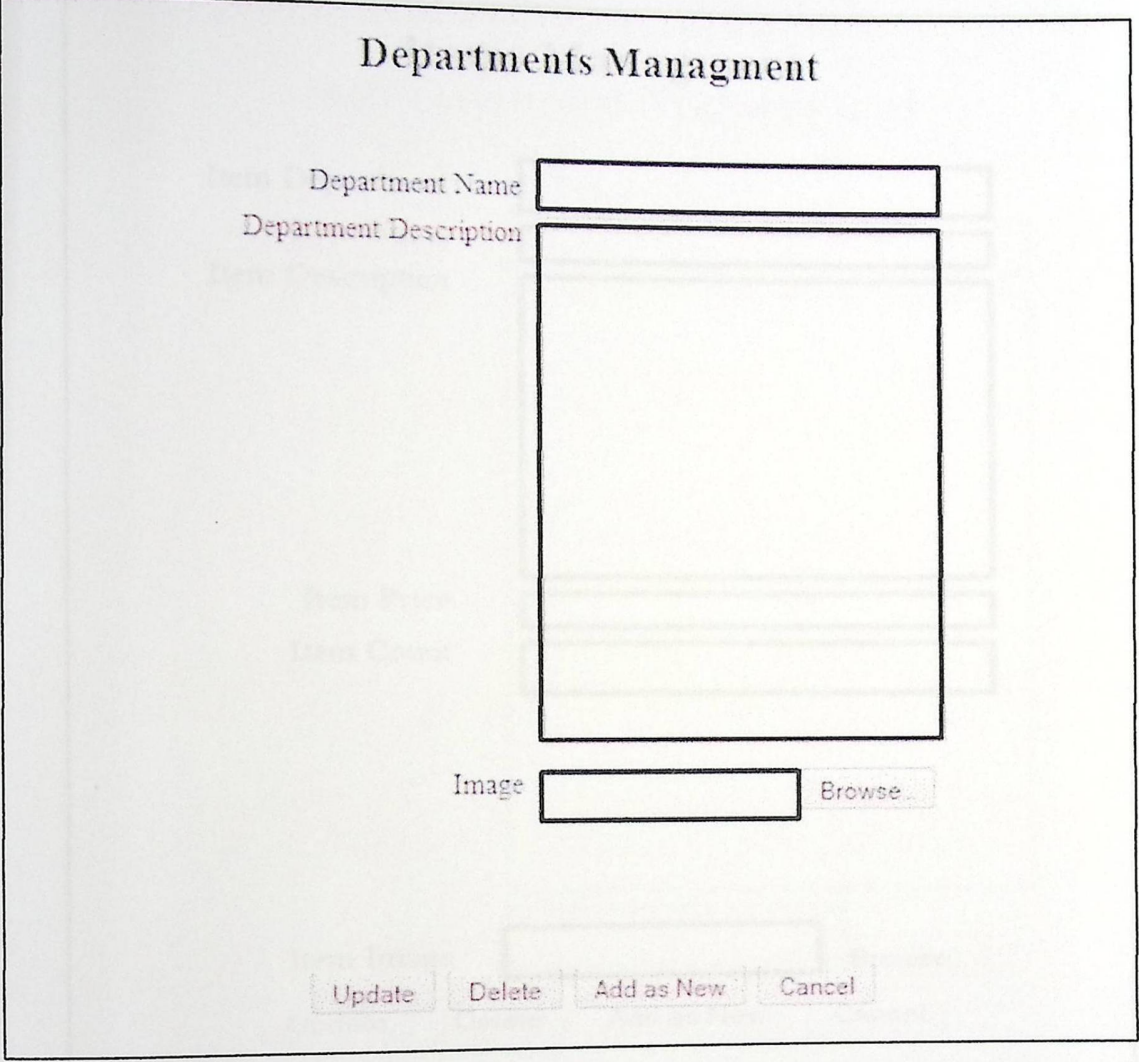


Figure (4.9): Bravo Mall control panel screen

3. Departments Management:

This page allows the administrator to manage the departments such as : update, delete, add new department, or cancel this operation.



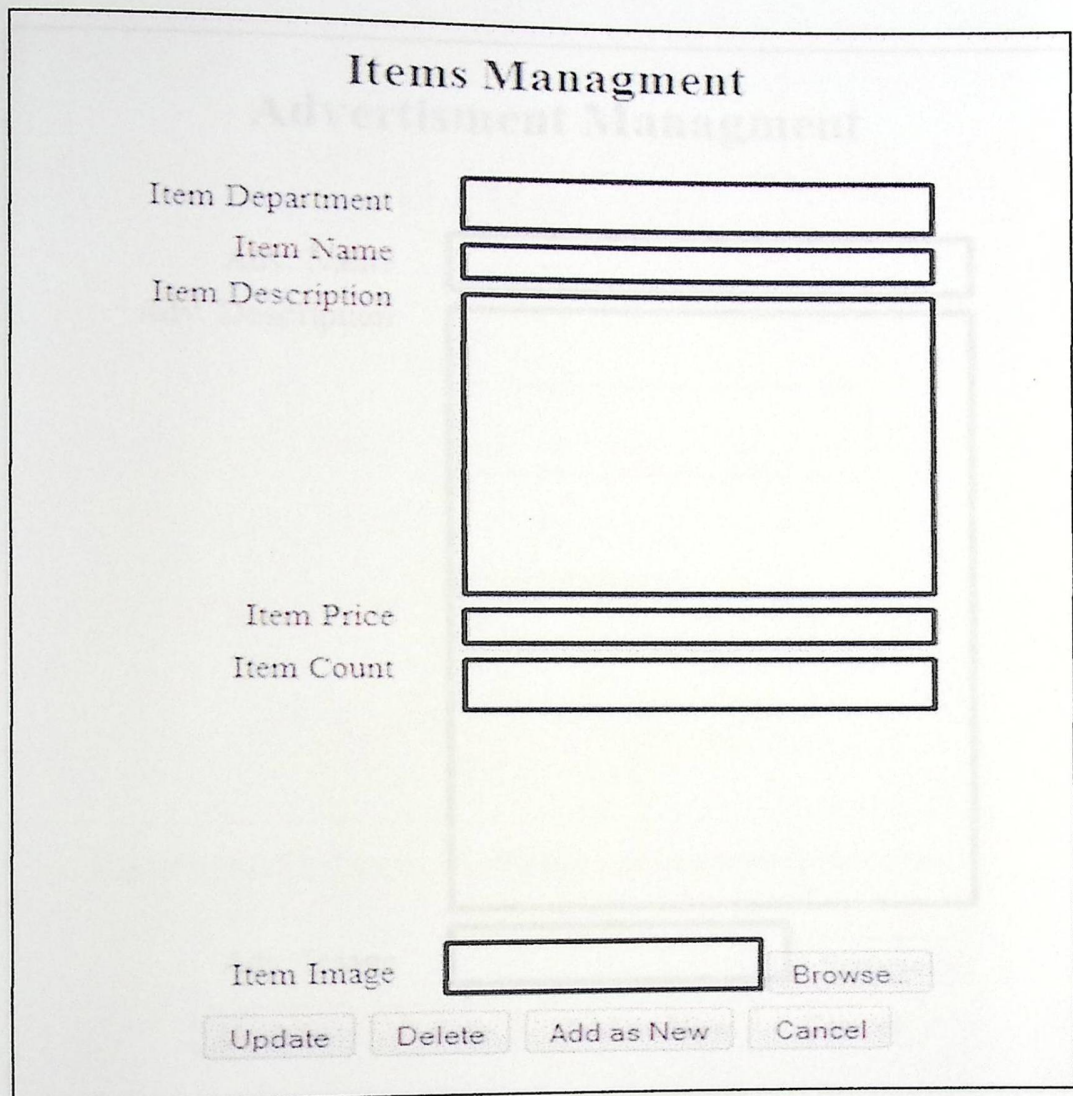
The screenshot shows a web form titled "Departments Managment". It contains the following fields and controls:

- Department Name:** A single-line text input field.
- Department Description:** A large multi-line text area.
- Image:** A single-line text input field.
- Browse...** A button next to the Image field.
- Update** A button.
- Delete** A button.
- Add as New** A button.
- Cancel** A button.

Figure (4.10): Bravo Mall department's management screen

4. Items Management:

This page allows the administrator to manage the items **such as** : update, delete, add new items, or cancel this operation.



Items Managment

Item Department

Item Name

Item Description

Item Price

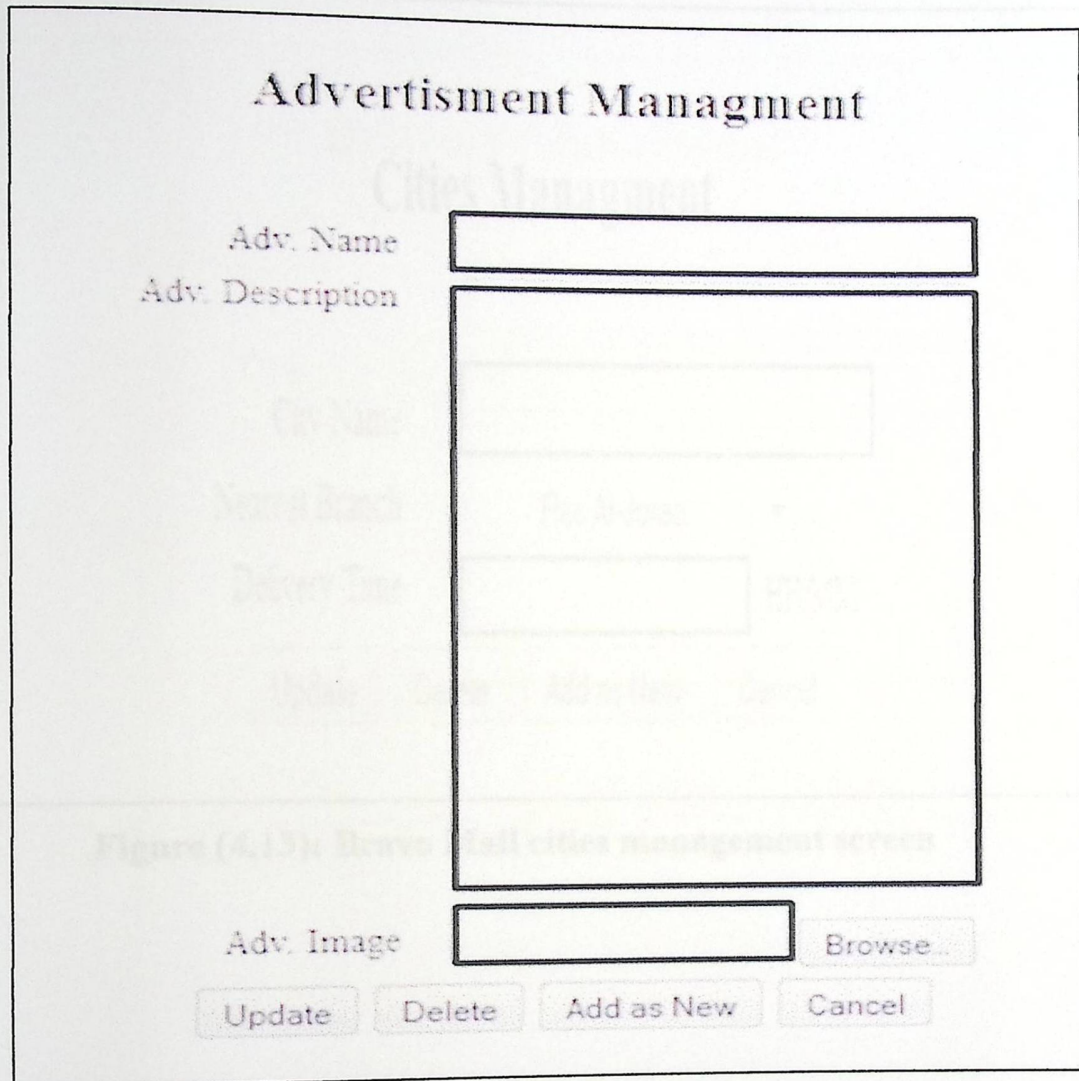
Item Count

Item Image

Figure (4.11): Bravo Mall items management screen

5. Advertisement Management:

This page allows the administrator to manage the advertisement **such as** : update, delete, add new advertisement, or cancel this operation.



Advertisement Managment

Adv. Name

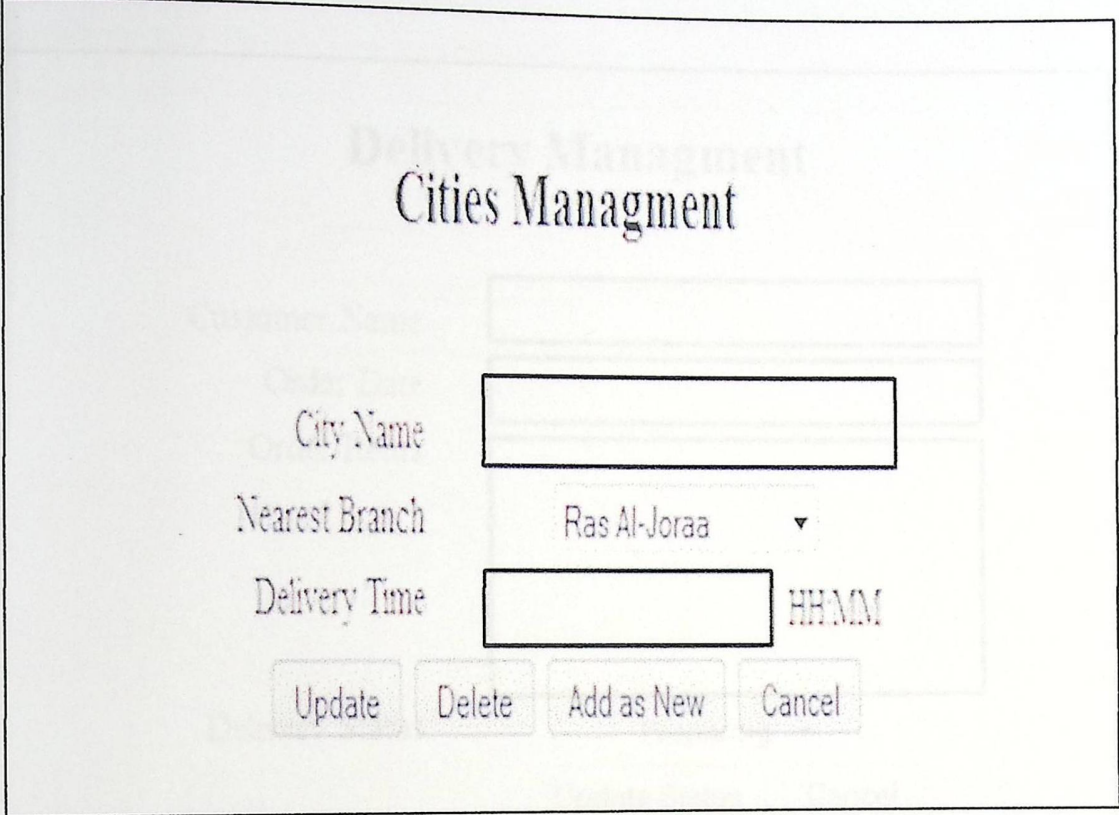
Adv. Description

Adv. Image

Figure (4.12): Bravo Mall advertisements management screen

6. Cities Management:

This page allows the administrator to manage the cities **such as:** update, delete, add new cities, or cancel this operation.



Cities Managment

City Name

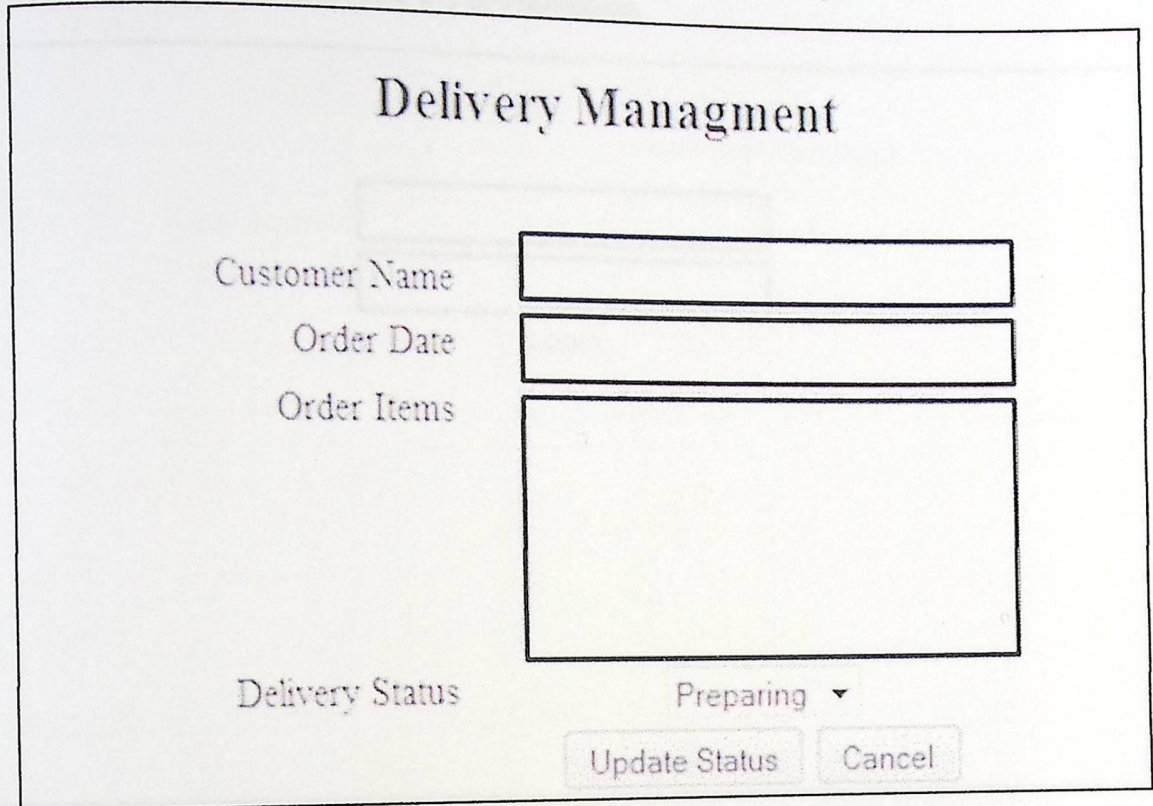
Nearest Branch

Delivery Time HHMM

Figure (4.13): Bravo Mall cities management screen

7. Delivery Management:

This page allows the administrator to manage the delivery **such as:** update status, which are preparing, shipping, done.



The screenshot shows a web interface titled "Delivery Managment". It contains three input fields on the left: "Customer Name", "Order Date", and "Order Items". To the right of these fields are three corresponding input boxes. Below the "Order Items" box is a "Delivery Status" label, followed by a dropdown menu currently showing "Preparing". At the bottom right are two buttons: "Update Status" and "Cancel".

Figure (4.14): Bravo Mall delivery management screen

4.3.2 User screens

1. login screen:

This page allows the user to access to the system to be able to do is own operations and the exercise his permissions.

Customers Login

User Name:

Password:

Figure (4.15): User login screen

2. Bravo mall departments:

This page allows the user to **browse all departments in Bravo Mall**, after that he can browse all items in each department, and he adds any items to his cart.

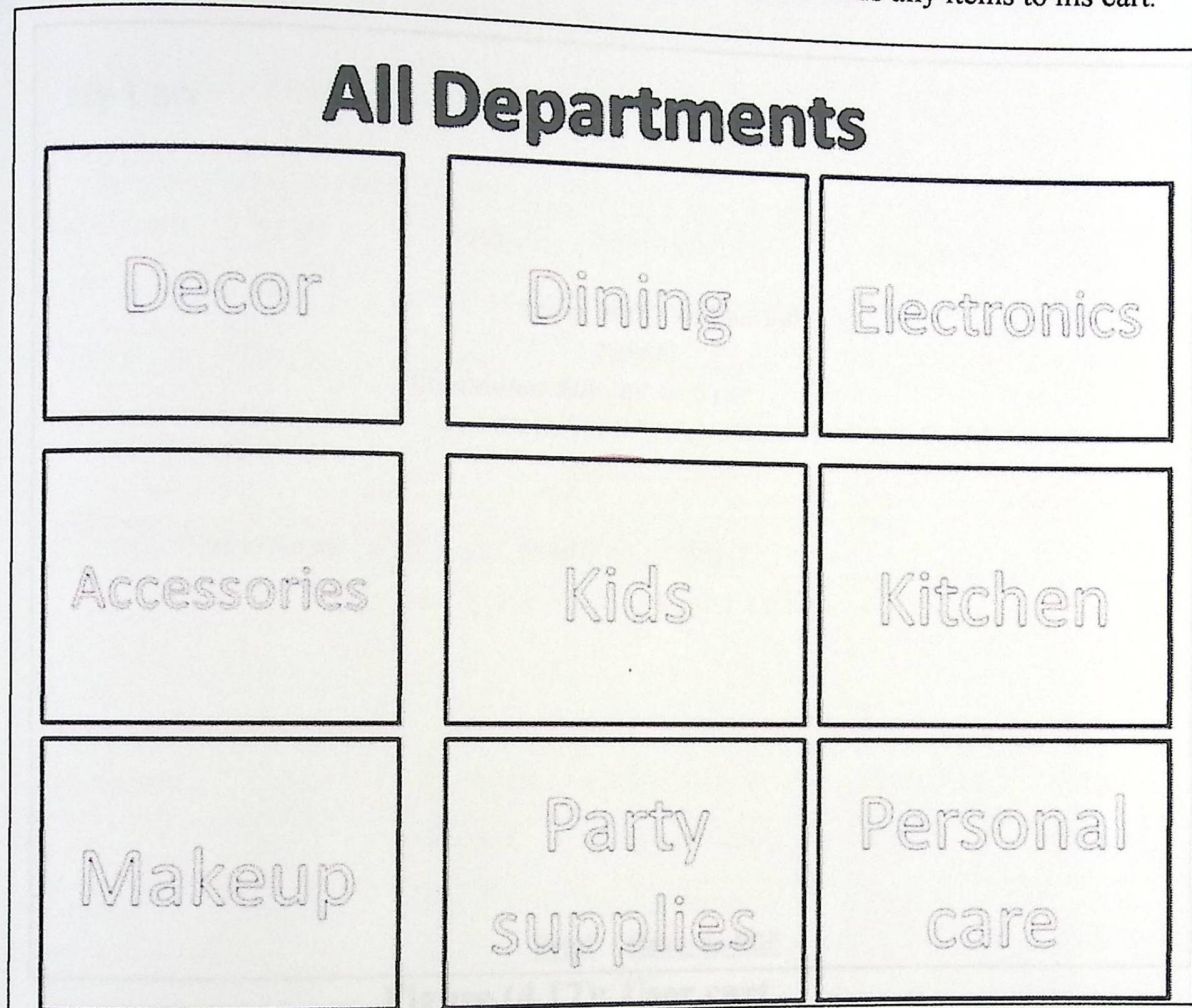


Figure (4.16): Bravo Mall departments

3. User shopping cart :

This page allows the user to see all results for shopping operations, and print the result on the paper or as PDF.

My Cart

1. Advertisement table:

Field name	Type	Length	Description	Required	Key
ad_id	Int	4bytes	Pravo Mall - Online Bill	Yes	Primary
ad_name	String	50	Name:	Yes	
ad_desc	String	50	Remaining Amount in Card: Date: 5/5/2011 11:45:52 PM Status: Prepared	Yes	
ad_img	Image	4bytes		No	

Table (4.1): Advertisement table

2. Album table:

Field name	Type	Length	Description	Required	Key
al_id	Int	4bytes	Image number	Yes	Primary
al_name	String	50	Image name	Yes	

[Print](#) [Save as PDF](#)

Figure (4.17): User cart

3. Branches table:

Field name	Type	Length	Description	Required	Key
br_id	Int	4bytes	Branch id	Yes	Primary
br_name	String	50	Branch name	Yes	
br_desc	String	50	Branch description	Yes	

Table (4.2): Branches table

4.4 Database Design.

In this section we will describe the database for this system, through the description of the tables contained in the database, and describes the fields that contain these tables, and to clarify the relationship between these tables.

4.4.1 Database dictionary:

1. Advertisement table:

Field name	Type	Length	description	Required	Key
adv_id	Int	4bytes	Advertisement id	Yes	Primary
adv_name	String	Max	Advertisement name	Yes	
adv_desc	String	Max	Advertisement description	Yes	
adv_img	Image		Advertisement image	No	

Table (4.1): Advertisement table

2. Album table:

Field name	Type	Length	description	Required	Key
img_no	Int	4bytes	Image number	Yes	Primary
img_name	String	50	Image name	Yes	

Table (4.2): Album table

3. Branches table:

Field name	Type	Length	description	Required	Key
bra_id	Int	4bytes	Branch id	Yes	Primary
bra_name	String	50	Branch name	Yes	
bra_desc	String	50	Branch description	Yes	

Table (4.3): Branches table

4. Bravo_cards table:

Field name	Type	Length	description	Required	Key
crd_id	Int	4bytes	Bravo card id	Yes	Primary
crd_serial	Int	4bytes	Bravo card serial	Yes	
crd_value	Int	4bytes	Bravo card value	Yes	
crd_exp	Datetime		Bravo card expired	Yes	

Table (4.4): Bravo_cards table**5. Cities table:**

Field name	Type	Length	description	Required	Key
cit_id	Int	4bytes	City id	Yes	Primary
bra_id	Int	4bytes	Branch id	Yes	Foreign
dele_time	Int	4bytes	Delivery time	Yes	
cit_name	String	50	City name	No	

Table (4.5): Cities table

6. Customers table:

Field name	Type	Length	Description	Required	Key
cus_id	Int	4bytes	Customer id	Yes	Primary
cus_name	String	50	Customer name	Yes	
cit_id	Int	4bytes	City id	Yes	Foreign
cus_username	String	50	Customer username	Yes	
cus_password	String	50	Customer password	Yes	
cus_male	String	50	Customer male	Yes	
cus_mobile	String	50	Customer mobile	Yes	
cus_login_time	Datetime		Customer last login time	Yes	
cus_status	String	50	Customer status	Yes	
cus_why_status	String	Max	Why Customer block	yes	

Table (4.6): Customers table**7. Departments table:**

Field name	Type	Length	Description	Required	Key
dep_id	Int	4bytes	Department id	Yes	Primary
dep_name	String	50	Department name	Yes	
dep_desc	String	Max	Department description	Yes	
bra_id	Int	4bytes	Branch id	Yes	Foreign
dep_img	Image		Department image	No	
dep_loyalty_gthan	Int	4bytes	Department loyalty grater than	No	
dep_loyalty_value	Int	4bytes	Department loyalty value	No	

Table (4.7): Departments table

8. Events table:

Field name	Type	Length	Description	Required	Key
eve_id	Int	4bytes	Event id	Yes	Primary
eve_name	String	50	Event name	Yes	
eve_desc	String	Max	Event description	Yes	
eve_startdate	Datetime		Event start date	Yes	
eve_enddate	Datetime		Event end date	yes	

Table (4.8): Events table**9. Invoices table:**

Field name	Type	Length	Description	Required	Key
inv_id	Int	4bytes	Invoice id	Yes	Primary
cus_id	Int	4bytes	Customer id	Yes	Foreign
bra_id	Int	4bytes	Branch id	Yes	Foreign
card_id	Int	4bytes	Card id	Yes	
inv_tax	Int	4bytes	Invoice tax	Yes	
inv_discount	Int	4bytes	Invoice discount	Yes	
inv_total	Int	4bytes	Invoice total	Yes	
inv_date	Datetime		Invoice date	Yes	
dele_status	String	50	Delete status	yes	

Table (4.9): Invoices table

10. Invoices Line table:

Field name	Type	Length	Description	Required	Key
lin_id	Int	4bytes	Invoice Line id	Yes	Primary
inv_id	Int	4bytes	Invoice id	Yes	Foreign
itm_id	Int	4bytes	Item id	Yes	Foreign
lin_count	Int	4bytes	Invoice Line count	Yes	
lin_total	Int	4bytes	Invoice Line total	yes	
lin_type	String	50	Invoice Line type	No	

Table (4.10): Invoices Line table**11. Items table:**

Field name	Type	Length	Description	Required	Key
itm_id	Int	4bytes	Item id	Yes	Primary
itm_name	String	50	Item name	Yes	
itm_desc	String	Max	Item description	Yes	
itm_price	Int	4bytes	Item price	Yes	
itm_count	Int	4bytes	Item count	yes	
dep_id	Int	4bytes	Department id	Yes	Foreign
itm_img	Image		Item image	No	

Table (4.11): Items table

12. Messages table:

Field name	Type	Length	Description	Required	Key
msg_id	Int	4bytes	Message id	Yes	Primary
msg_subject	String	Max	Message subject	Yes	
msg_body	String	Max	Message body	Yes	
cus_id	Int	4bytes	Customer id	Yes	Foreign
msg_date	Datetime		Message date	Yes	
msg_type	String	50	Message type	Yes	
msg_status	Int	4bytes	Message status	No	

Table (4.12): Messages table**13. Sales table:**

Field name	Type	Length	Description	Required	Key
sal_id	Int	4bytes	Sale id	Yes	Primary
sal_name	String	50	Sale name	Yes	
sal_from	Datetime		Sale from	Yes	
sal_to	Datetime		Sale to	Yes	
sal_price	Int	4bytes	Sale price	Yes	
sal_status	String	50	Sale status	Yes	

Table (4.13): Sales table

14. Sales Items table:

Field name	Type	Length	Description	Required	Key
sitm_id	Int	4bytes	Sale item id	Yes	Primary
itm_id	Int	4bytes	Item id	Yes	Foreign
sitm_count	Int	4bytes	Sale item count	Yes	
sal_id	Int	4bytes	Sale id	No	Foreign

Table (4.14): Sales Items table**15. Users table:**

Field name	Type	Length	Description	Required	Key
usr_id	Int	4bytes	User id	Yes	Primary
usr_name	String	50	User name	Yes	
usr_username	String	50	Username for user	Yes	
usr_password	String	50	User password	Yes	
bra_id	Int	4bytes	Branch id	Yes	Foreign
usr_mail	String	50	User mail	No	
usr_mobile	String	50	User mobile	No	

Table (4.15): Users table**1.6 FAQ (Frequently asked questions)table:**

Field name	Type	Length	Description	Required	Key
faq_id	Int	4bytes	Frequently question id	Yes	Primary
faq_q	String	Max	The question	Yes	
faq_a	String	Max	The nswer	Yes	

Table (4.16): FAQ table.

1.7 Vote table:

Field name	Type	Length	Description	Required	Key
vot_id	Int	4bytes	Vote id	Yes	Primary
vot_1	Int	4bytes	The first vote	Yes	
vot_2	Int	4bytes	The second vote	Yes	
vot_3	Int	4bytes	The third vote	Yes	
cus_id	Int	4bytes	Customer id	Yes	

Table (4.17): Vote table.

4.4.2 Database model:

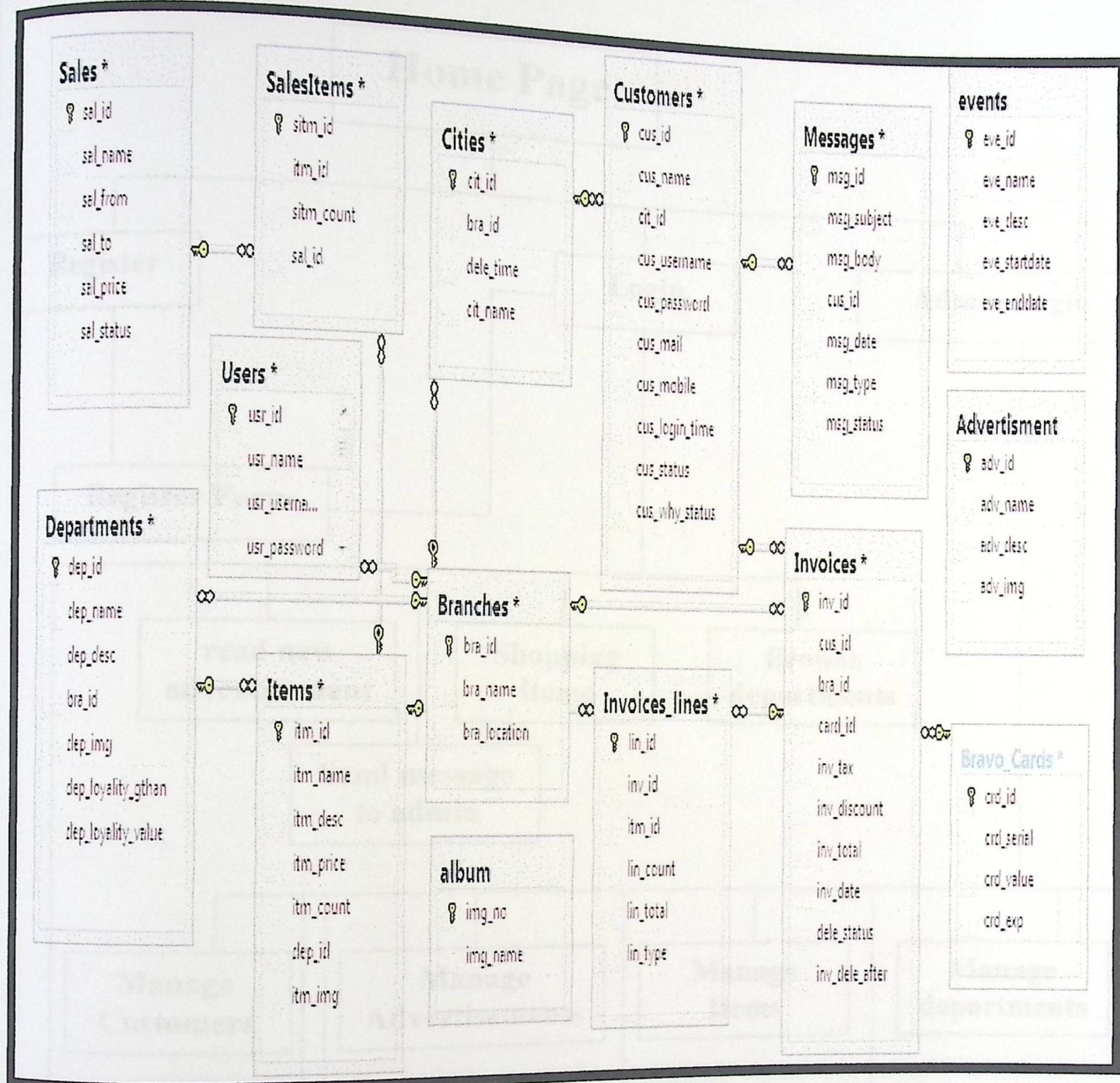


Figure (4.18): Database Model

4.5 Navigation chart

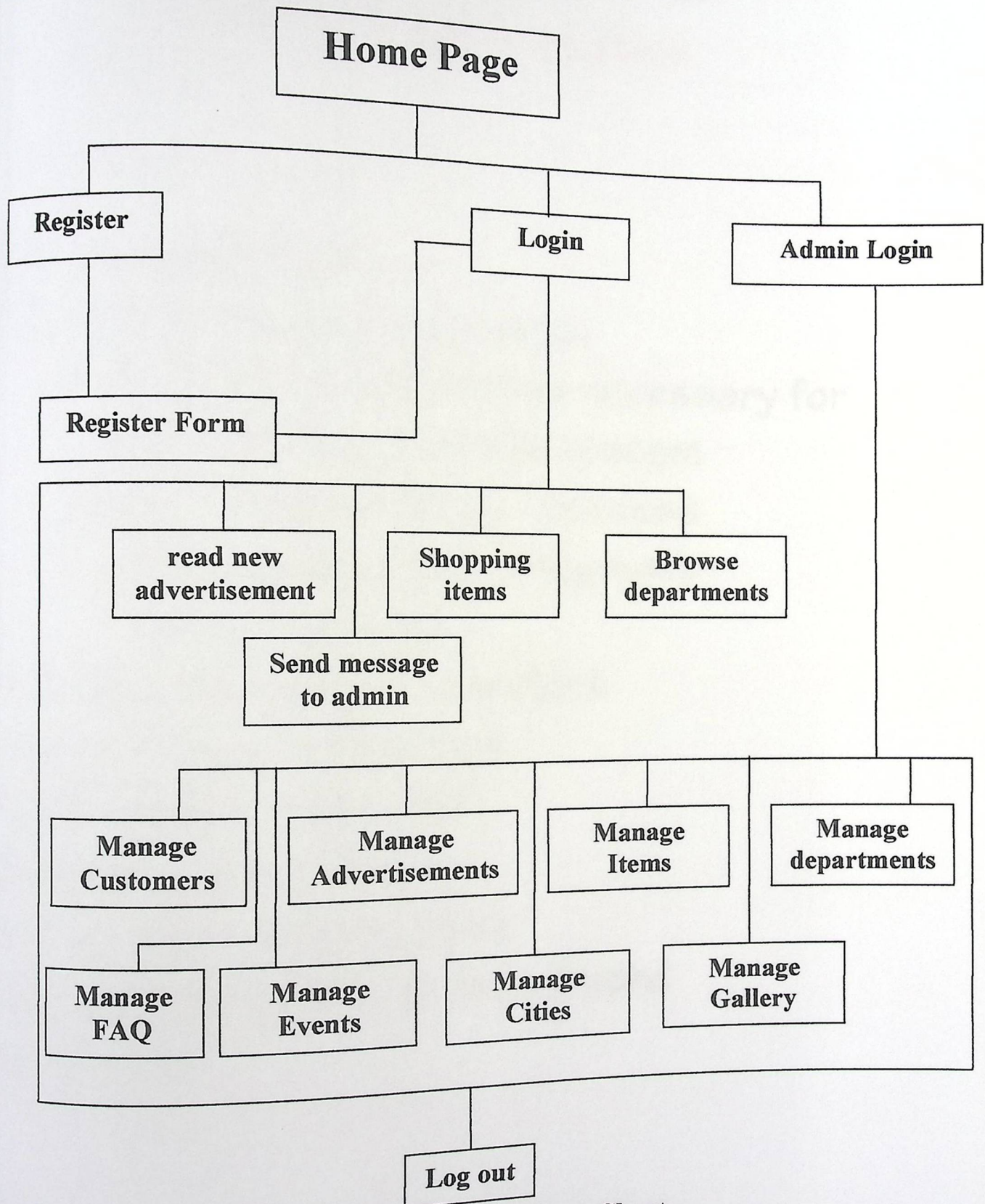


Figure (4.19): Navigation Chart

CHAPTER FIVE

System Implementation

5.1 Introduction

5.2 Sources and Equipments

5.2.1 physical Sources necessary for development of the system

5.2.2 Programming Sources necessary for development of the system

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CHAPTER FIVE

System Implementation

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5.1 Introduction

Application stage is an important stage in the development of the system, which is where the transition from the conceptual stage of the analysis and design of the system to process stage by which the preparation of resources and equipment needed to do **programming** and system construction as a whole. **In this chapter** we will clarify the **sources and the physical equipment** and software necessary to **implement** the system and build the database.

5.2 Sources and Equipments

5.2.1 Physical Sources necessary for development of the system:

In this section you must make sure that all **physical sources** suitable for the requirements of system development and most important of these sources are:

- **Computer Device:** with the following specifications:

- ✓ Processor Core 2due 2.4 G.
- ✓ Ram 4Gbps.
- ✓ Hard Disk 500 Gbps.
- ✓ Dvd-Rom.
- ✓ Network card.
- ✓ Monitor.
- ✓ Keyboard.
- ✓ Mouse.
- ✓ Wireless internet.

5.2.2 Programming Sources necessary for development of the system:

In this section, we will prepare **programming equipments** and all the programs that we need through the **process of system development** and of the **operating system**, Microsoft office 2007, Microsoft visual studio.net 2010, SQL database Server 2008, Adobe flash CS3, and others.

- **Microsoft windows 7 Ultimate:**

This system is considered strong and characterized by quality and high performance, and it supported by **many applications** and software applications online, as it contains the protection system where the user can browse through the **Internet without fear** of access to files of personal, as it is characterized by its support for **Multimedia software**, in addition to services that are loaded with this system as a service for IIS web applications.

- **Microsoft Office 2007:**

It include a words processor (**Microsoft Office Word**) and it used to complete a full course documentation and also includes the program offers progressive (**Microsoft Office power point 2007**) .

- **Microsoft visual studio 2010 ultimate.net:**

Part of programmed interview released as a **Microsoft** product, and is one of the most powerful programming languages, because of features that support to deal with the database needed by the system **quickly and effectively**, as it is considered a complete development environment that we can work the **design, development**, and **error detection** and Correct them and activate the web applications, as well as it supports a number of languages used to develop. **NET environment**, including:

- Microsoft VB.NET.
- Microsoft visual C + +.
- Sharp Java #.
- Microsoft C#.

The system has been applied on the environment of **Visual Studio 2010** because the **following reasons**:



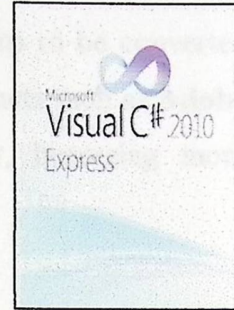
- ❖ **Microsoft Visual Studio 2010 Ultimate** is the comprehensive suite of application lifecycle management tools for teams to ensure quality results, from design to deployment. Whether you're **creating new solutions** or enhancing existing applications, Visual Studio 2010 Ultimate lets you bring your vision to life targeting an **increasing** number of **platforms** and **technologies**, including cloud and parallel computing.
- ❖ **Microsoft Visual Studio 2010 Ultimate Features** comes packed with **powerful tools** that simplify the entire application development process from start to finish. Teams can realize increased **productivity and cost** savings by utilizing **advanced collaboration features** as well as integrated testing and debugging tools that help ensure that you deliver high-quality code every time. So this features missing in **visual studio 2005**.
- ❖ **Database development in Visual Studio 2010 ultimate** requires the same care and **attention as application development**. Visual Studio 2010 Ultimate recognizes this, and provides robust **deployment and change-management tools** that help ensure that your database and application are always in synchronization.

- **ASP.NET:**

A **framework** built on .Net framework and this framework characterized of ADO.Net, which gives **high performance** for data binding, and powerful modern database and use the compiler, as it provide an easy way to build Web sites dynamically where it can be considered a Web page users see through the use of a web browser . The following load requirements of **ASP.NET** on your computer:

- 1- Windows 7 operating system.
- 2- Internet Information service (IIS).
- 3- Microsoft Frameworks.
- 4- (Internet Explorer).

On other hand we used **Microsoft C#** to program the system because of the following reasons:



- ❖ **Visual C# 2010 Express** is part of the Visual Studio 2010 ultimate family, a free set of tools that Windows developers at any level can use to **create custom applications** using basic and expert settings. Visual C# (pronounced C sharp) is designed for building a variety of applications that run on the **.NET Framework**. Visual C# is **simple, powerful, type-safe, and object-oriented**. With its many innovations, Visual C# enables **rapid application development** and also retains the expressiveness and elegance of **C-style languages**.
- ❖ **Visual C# 2010 Express** supports the new **.NET Framework 4**, which allows you to apply common skills across a variety of devices, application types, and programming tasks.
- ❖ **C# not VB.NET** because, **Error Catching**. C# catches a lot more errors than VB.NET, such as uninitialized variables, dead code, etc., **Comments in C# are just better**. You can do multiline comments, XML comments, single line comments, etc..., **Regions in C# are far better**. The key here is that you can place a region inside a function, thus breaking up the implementation into logical pieces. we simply love this ability, and

The source code to the C# compiler is available from Microsoft and Novell. This means that you can theoretically develop apps for OSes other than Windows, such as Linux and Mac OS.

- **Adobe Flash CS3:**

Flash CS3 is the first version of Flash released under the Adobe name. CS3 features full support for Action Script 3.0, allows entire applications to be converted into **Action Script**, adds **better integration** with other Adobe products such as **Adobe Photoshop**, and also provides better Vector drawing behavior, becoming more like Adobe Illustrator and Adobe Fireworks.

5.3 The start of a new project

Here's method of beginning of a new project in Visual Studio.Net2010

- Begin to run the program from the Start menu.



Figure (5.1): Begin to run the Visual Studio 2010

- After running the program we are creating a new project.

This screen shows you how to **create** a new project in VS.2010

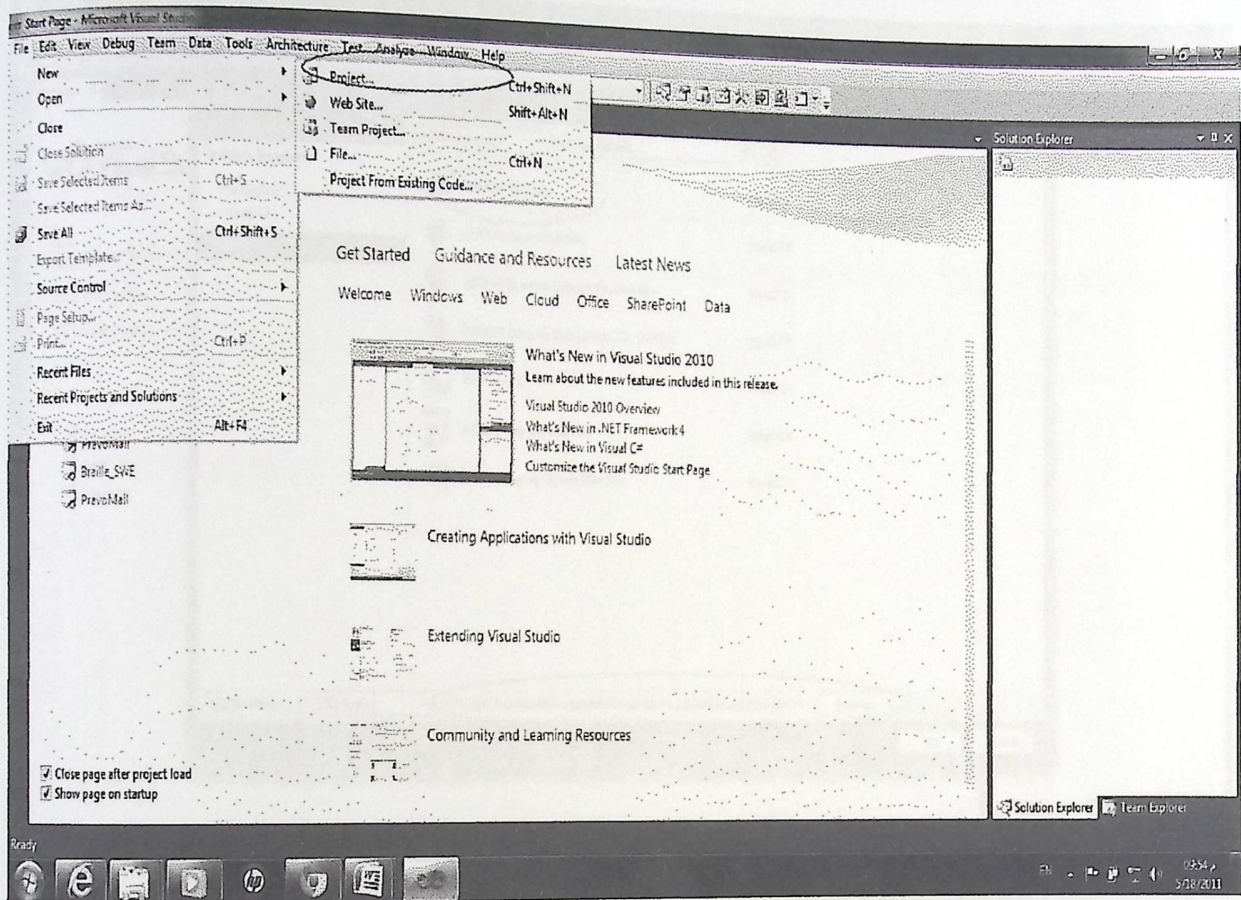


Figure (5.2): create new website in Visual Studio 2010

- Create a new web form.

This screen shows you how to create a new web form in VS.2010

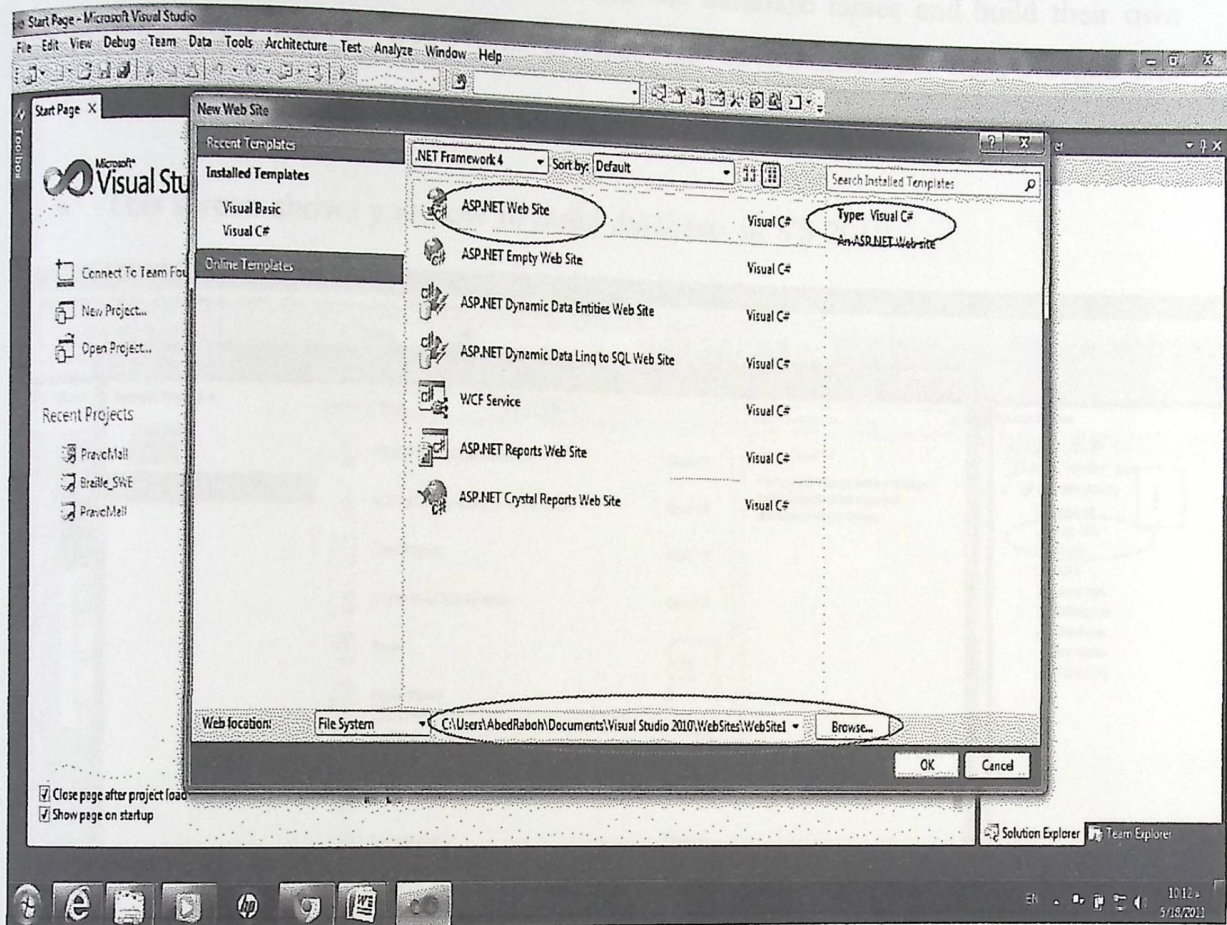


Figure (5.3): create new web form in Visual Studio 2010

5.4 Building of database

These include the process and create the database tables and build their own through the **SQL Server 2008** that provides an environment for data storage and analysis as is shown below:

- This screen shows you how to build database in VS.2010

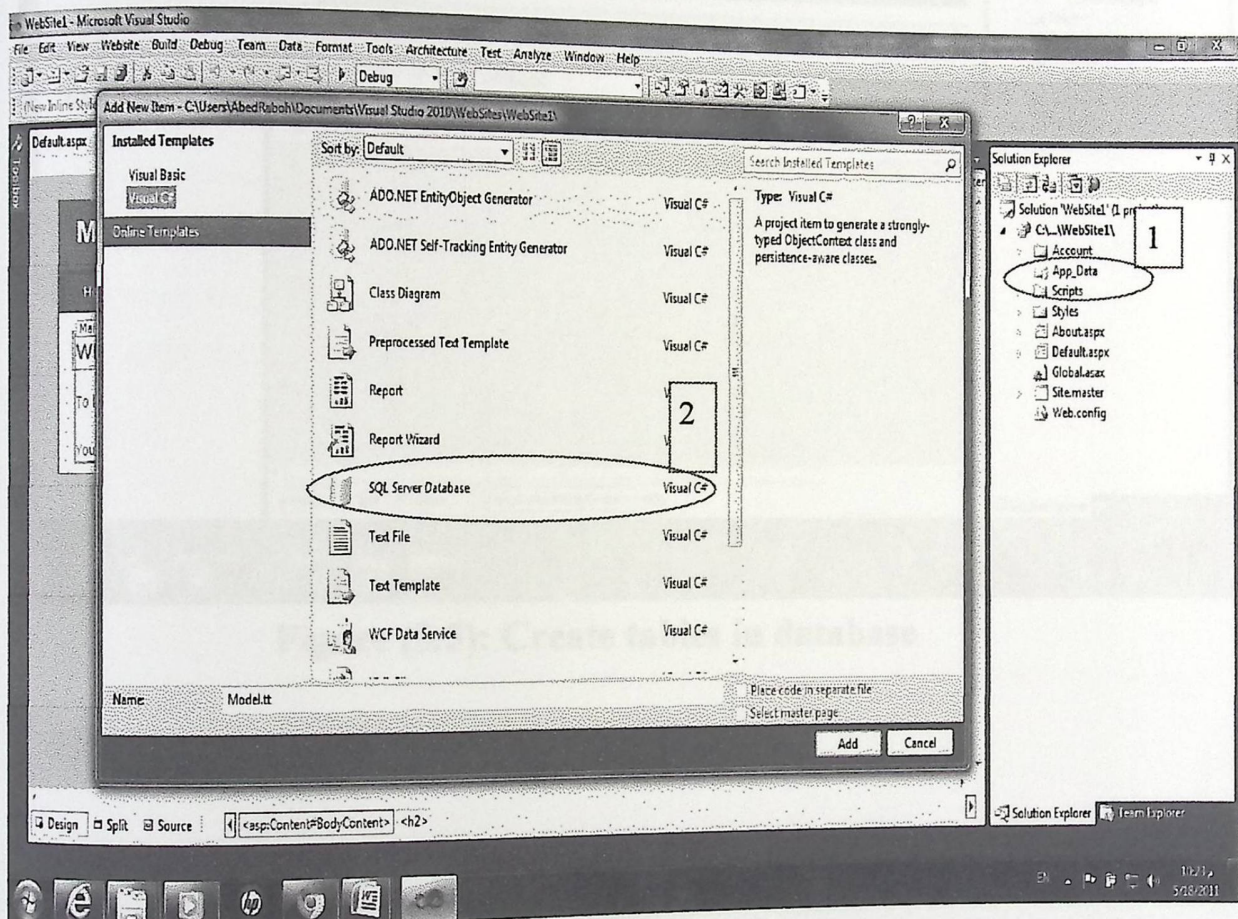


Figure (5.4): building database in Visual Studio 2010

- This screen shows you how to create tables in the database.

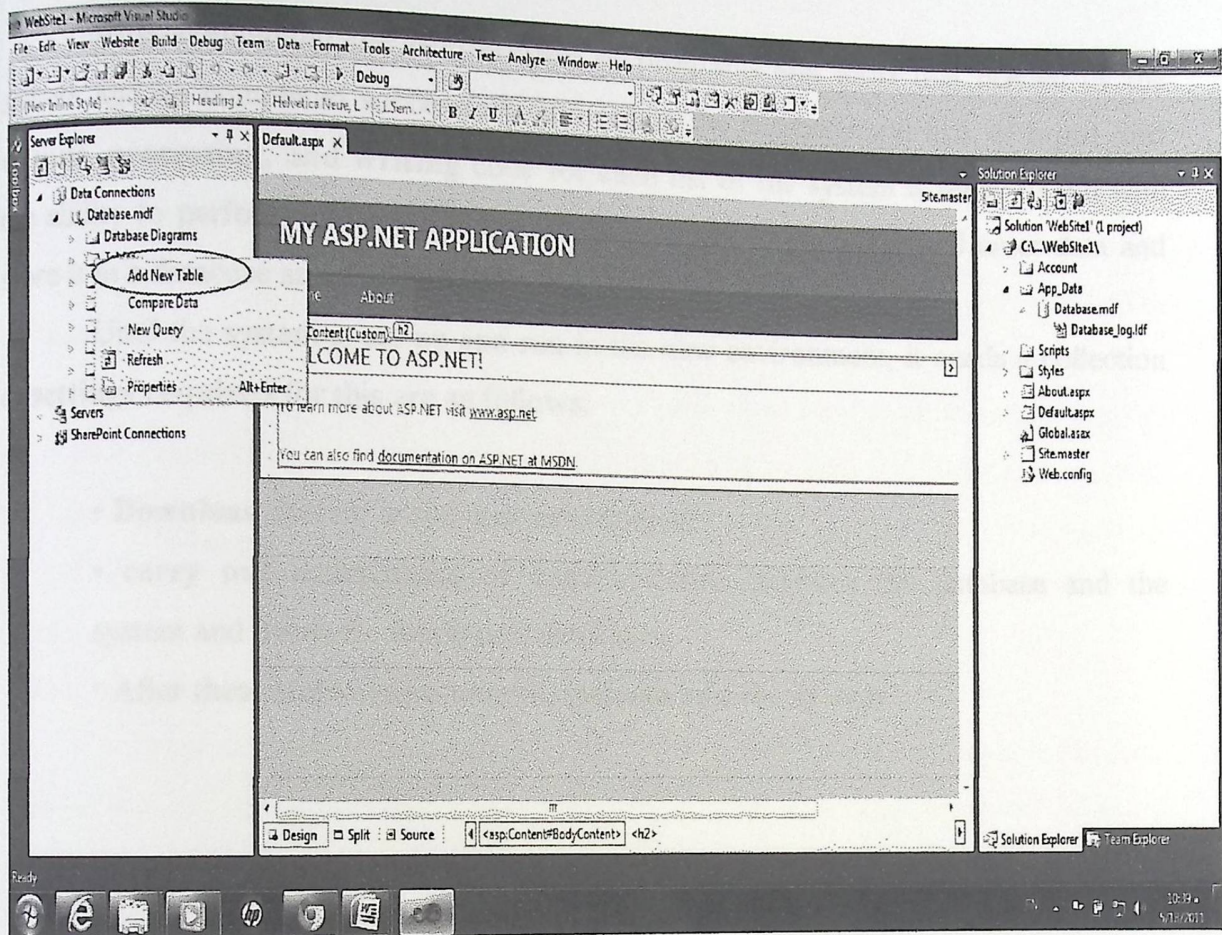


Figure (5.5): Create tables in database

5.5 Running of System

After completing the **preparation** of programs and tools that needed by the system and be completed successfully and create the database and lists of **input and output, processing, and writing** code for each list of the system is ready to run with the ability to perform his duties and show the **results to the user**, and enter data and store it in a database and perform the operations required.

Until the system is set up and run in the new environment, it needs a collection of **settings required** for this are as follows:

- **Download** system in the new environment.
- **carry out** maintenance of communication between the database and the system and between distributed databases.
- After these steps are successful, you **can run the system**

5.6 SQL server 2008

We have been building **tables and relationships** for the database by SQL Server **2008**, for ease of storage, which is characterized by the following:

1. Program that **manages** databases.
2. Has the ability to **control** who uses the data and how to deal with it.
3. **High-speed**, which helps to perform tasks at any time or situation.
4. **Storage space** required to store the data provided.
5. **Ease of dealing** with ASP.Net.

5.7 System Web Hosting

What is web hosting?

A **website** is essentially a collection of files that is shared with others on the Internet. Just about anyone can create a website and establish an online presence. Building your own website means not only selecting the files you want to post and designing how your site will look; it also means you will need to find a way to make your site accessible to other people. A web host provides space on its server to store your pages and allow other computers around the world to access your site by means of a network or modem. It gives you disk space for your files, bandwidth for other users to access your content, and possibly other technology tools to help you build and maintain your site. No matter what kind of website you create and whether it's for business or personal use, you will need this service. Choosing a host is a critical part of creating any website.

How does free web hosting work?

Free web hosting is, a service that stores and delivers your pages for free. With all the critical services that a web host provides, how can a company do it without charging the user? Generally, free web hosts support free sites with advertisements. That means that when visitors access your website, they will see sponsor ads, in the form of banners or pop-ups, in addition to your content.

Finally, we applied our system hosting from **ITLabs-Web** site, because it have the following **features**:

Free Web Hosting	
Duration	1 Year
Disk Space	1 GB
Bandwidth	1 GB
Free Account PC/Server	Yes
ASP.NET	Yes
PHP	Yes
SQL Server Database	Yes
MySQL Database	Yes
Web Access Tool/Toolbox	Yes
FTP Access Account	Yes
Unlimited Data Transfer	Yes (on demand)
E-Logging (Module)	Yes (on demand)
Content Management Sys (Joomla)	Yes
SSL Access	Yes
Activation of	24
Price	0.00

Table (5.1): create new web form in Visual Studio 2010^[6]

5.8 Configuration of distributed databases

We applied distributed database in several areas which are the followings:

- **DataAccess:**

From this Class we control distributed database, such that if user didn't log in to any branches, by default the user connect to the main branch (Ras-AlJorah), but if he select the city then the system choose the nearest branch for his city.

The following code explains this class DataAccess:

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Data.SqlClient;
using System.Data;
using System.IO;
using Tools;

namespace Tools
{
    public class DataAccess
    {
        private SqlConnection _Connection;

        public DataAccess()
        {
            if (_Connection == null)
            {
                _Connection = new
                SqlConnection(ApplicationSettings.branconstr("1"));
            }
        }
    }
}
```



```
public DataAccess(string branch)
{
    if (_Connection == null)
    {
        _Connection = new
SqlConnection(ApplicationSettings.branconstr(branch));
    }
}

public string ExecuteNonQuery(string strSQL)
{
    try
    {
        if (_Connection.State != ConnectionState.Open)
        {
            _Connection.Open();
        }
        SqlCommand myCommand = new SqlCommand(strSQL, _Connection);
        myCommand.ExecuteNonQuery();
        return "1";
    }
    catch (Exception ex)
    {
        return ex.ToString();
    }
    finally
    {
        if (_Connection.State == ConnectionState.Open)
        {
            _Connection.Close();
        }
    }
}

public DataSet ExecuteDataset(string strSQL)
{
    try
    {
        if (_Connection.State != ConnectionState.Open)
        {
            _Connection.Open();
        }
    }
}
```



```

_Connection);
        SqlDataAdapter objAdapter = new SqlDataAdapter(strSQL,
        DataSet objDataSet = new DataSet();
        objAdapter.Fill(objDataSet);
        return objDataSet;
    }
    catch (Exception ex)
    {
        //return ex.ToString();
        return null;
    }
    finally
    {
        if (_Connection.State == ConnectionState.Open)
        {
            _Connection.Close();
        }
    }
}

public object ExecuteScalar(string strSQL)
{
    try
    {
        if (_Connection.State != ConnectionState.Open)
        {
            _Connection.Open();
        }
        SqlCommand myCommand = new SqlCommand(strSQL, _Connection);
        return myCommand.ExecuteScalar();
    }
    catch (Exception ex)
    {
        //return ex.ToString();
        return "0";
    }
    finally
    {
        if (_Connection.State == ConnectionState.Open)
        {
            _Connection.Close(); } } }

```




```

public object ExecuteCommandNonQuery(SqlCommand comm)
{
    try
    {
        if (_Connection.State != ConnectionState.Open)
        {
            _Connection.Open();
        }
        comm.Connection = _Connection;
        return comm.ExecuteNonQuery();
    }
    catch (Exception ex)
    {
        //return ex.ToString();
        return null;
    }
    finally
    {
        if (_Connection.State == ConnectionState.Open)
        {
            _Connection.Close();
        }
    }
}
}

```

- **Search Page:**

If customer log in to the system then search for any item, the system make search in his branch then if it didn't find item system go to other branches, but if he didn't log in, the system make search by default in the main branch (Ras Al-Joreh), then if it didn't find item system go to other branches.

CHAPTER SIX

System Testing

6.1 Introduction

6.2 Unit and Form Testing

6.3 Integration Testing

6.4 System Testing

6.5 Acceptance Testing

6.1 Introduction

After ending the stage of application and programming the system, it will put under **testing** to ensure that it meets the **design** and **functional requirements**.

The importance of the testing is in the showing the dependence of unit and forms in **addition** of the **integration** and **acceptance testing**.

In this chapter we will go through the four stages of testing:

- Unit and form testing.
- Integration testing.
- System testing.
- Acceptance testing.

6.1 Unit and Form Testing

In this test we will test every unit in the system units in a part of the other units to **prove** that it works in a correct way.

- Login correctly screen

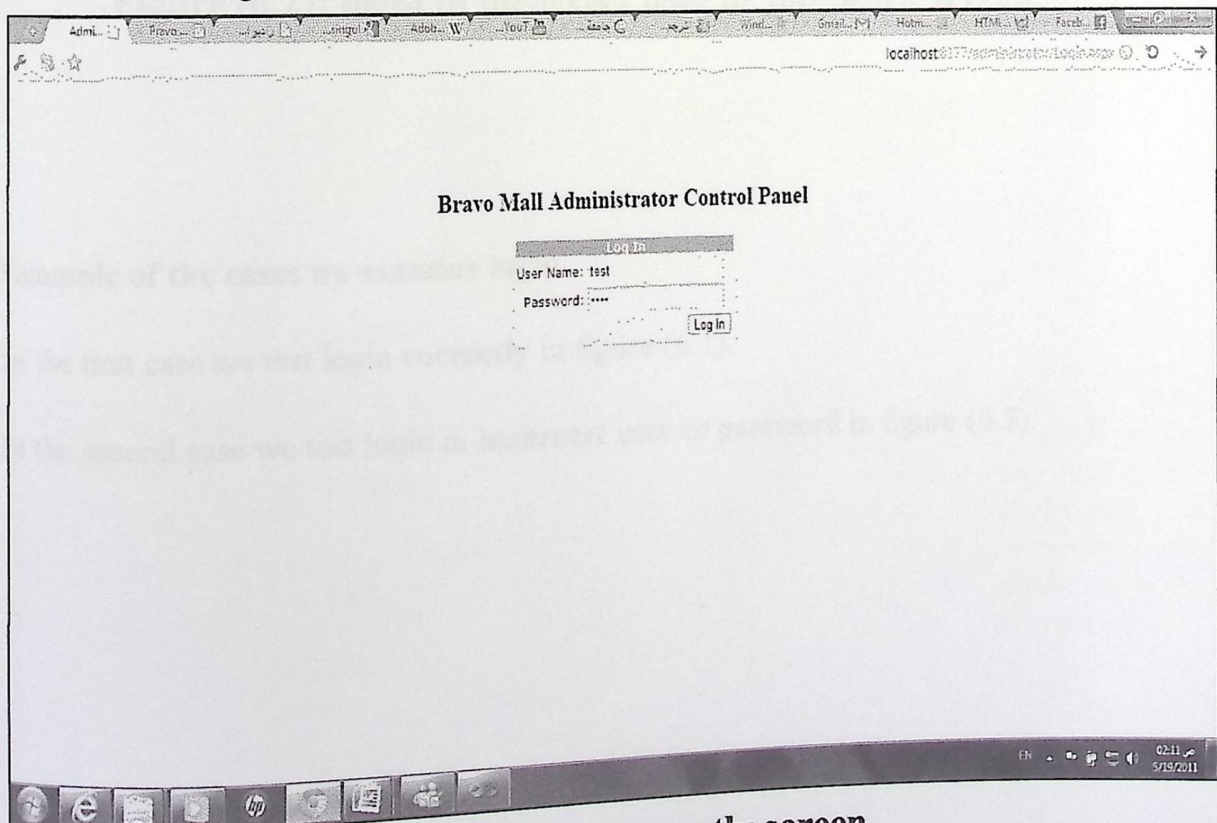


Figure (6.1): login correctly screen.

- Login in **incorrect** user or password screen

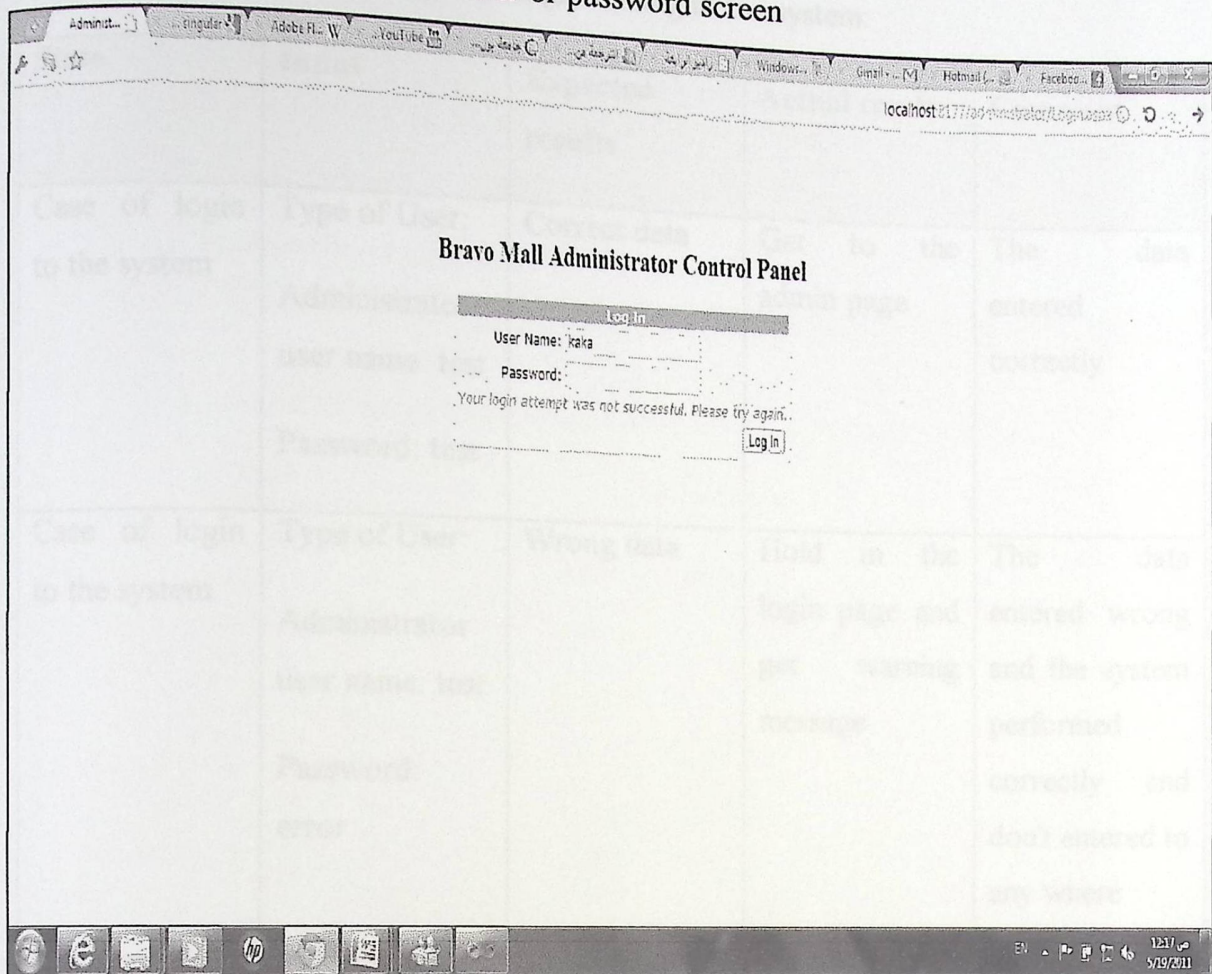


Figure (6.2): login in incorrect user or password screen.

Example of the cases we examine login

In the first case we test login **correctly** in figure (6.1).

In the second case we test login in **incorrect** user or password in figure (6.2).

The following tables clarify result of login testing to the system:

State	Input	Expected results	Actual result	Comment
Case of login to the system	Type of User: Administrator user name: test Password: test	Correct data	Get to the admin page	The data entered correctly
Case of login to the system	Type of User: Administrator user name: test Password: error	Wrong data	Hold in the login page and get warning message	The data entered wrong and the system performed correctly and don't entered to any where
Case of login to the system	Type of User: Customer user name: waleed Password: waleedsafi	Correct data	Get to the customer page	The data entered correctly
Case of login to the system	Type of User: Customer user name: waleed Password: error	Wrong data	Hold in the login page and get warning message	The data entered wrong and the system performed correctly and don't entered to any where

Table (6.1): unit and form testing

6.3 Integration Testing

In this testing stage the integration of the different part of the system will be show be testing the interaction of these parts, for example of the parts tested for integration are:

- Test adding a new item:

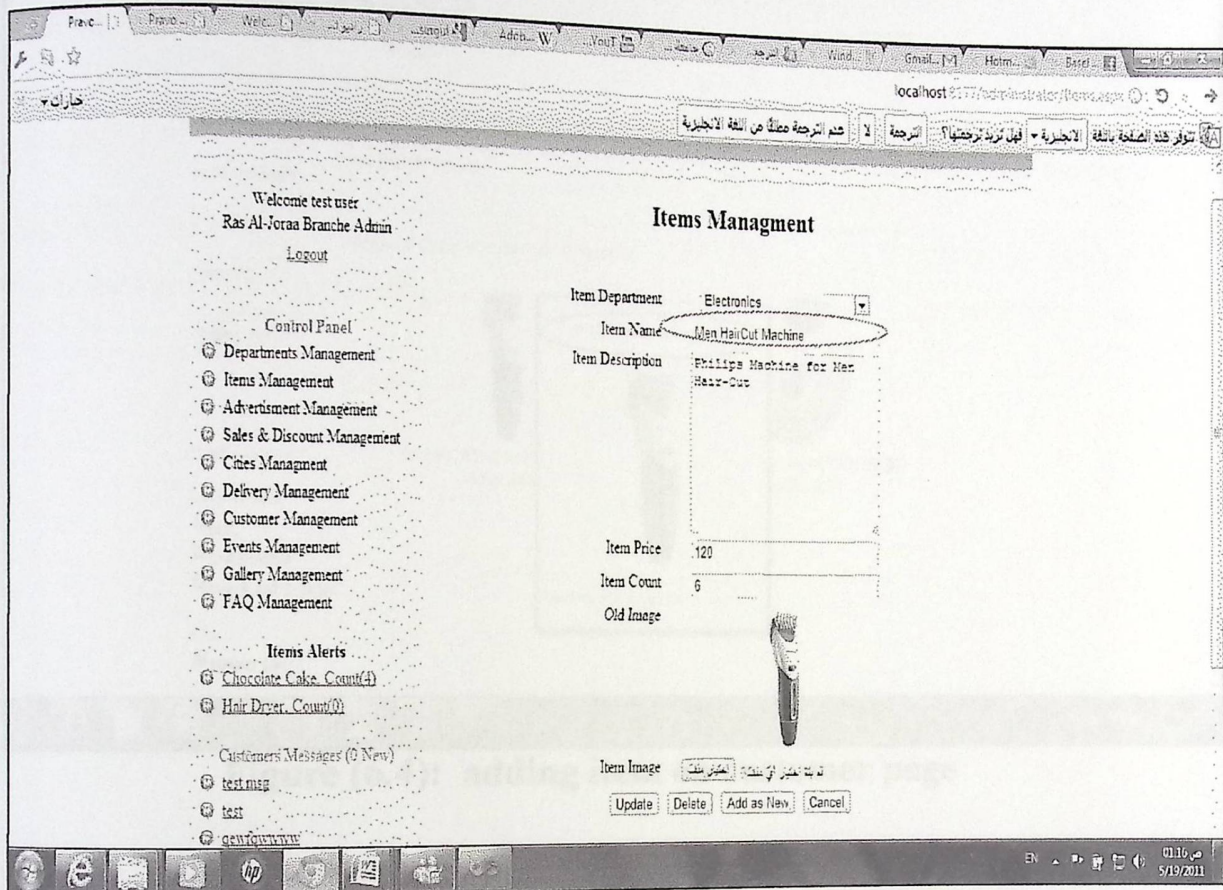


Figure (6.3): test adding new item

The following figure shows that the product has been added to customer page:

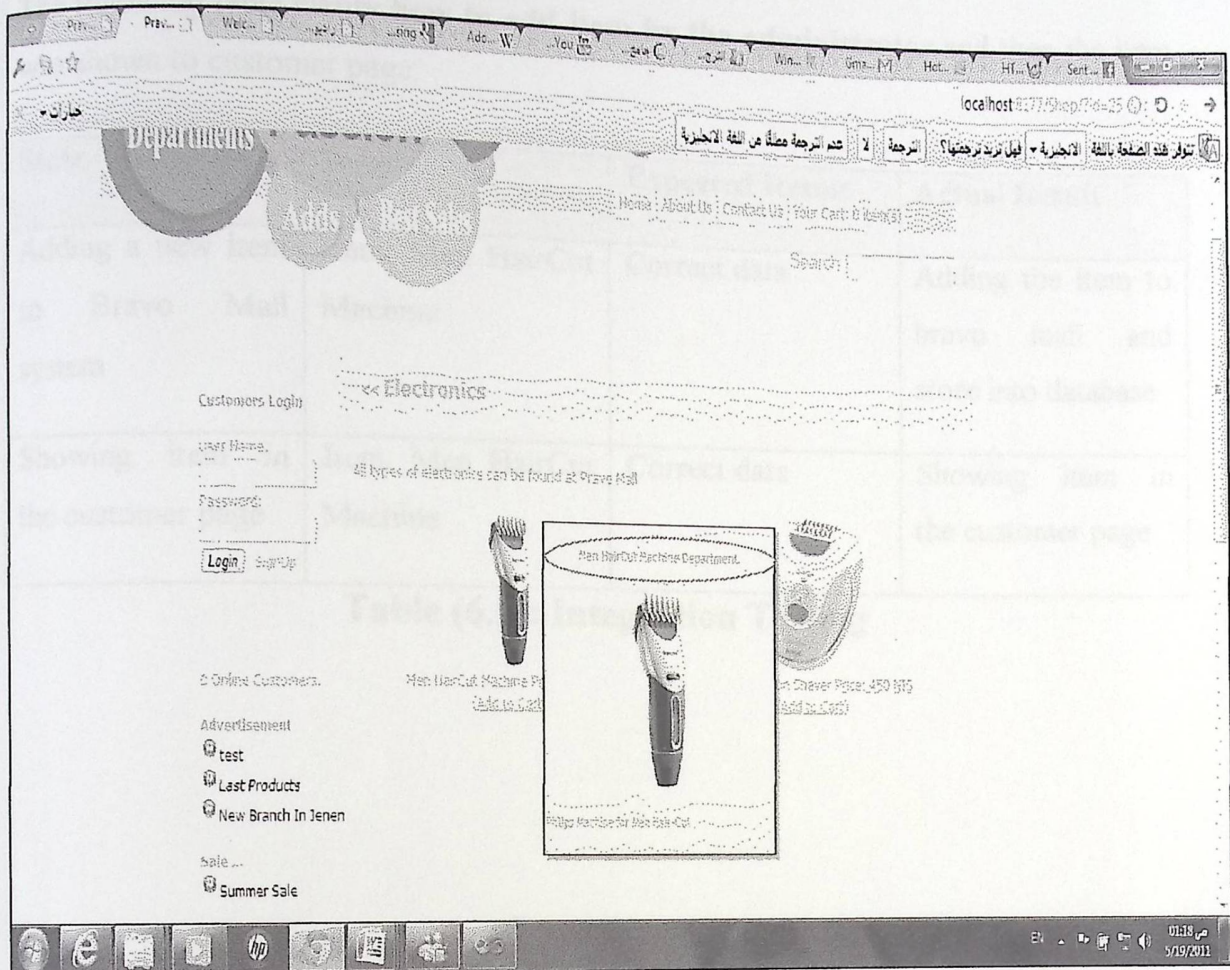


Figure (6.4): adding item on customer page

The following table clarify how to add item by the administrator and then the item was shown to customer page:

State	Input	Expected Result	Actual Result
Adding a new item to Bravo Mall system	Item: Men HairCut Machine	Correct data	Adding the item to bravo mall and store into database
Showing item in the customer page	Item: Men HairCut Machine	Correct data	Showing item in the customer page

Table (6.2): Integration Testing

6.4 System Testing

In this stage of testing the system tested as one in dependent unit to ensure that it works **correctly and error free**. Testing the process the system do and see the effect of it in the other part of the system, **for example** we tested adding new customer and test its effect in the database after adding process.

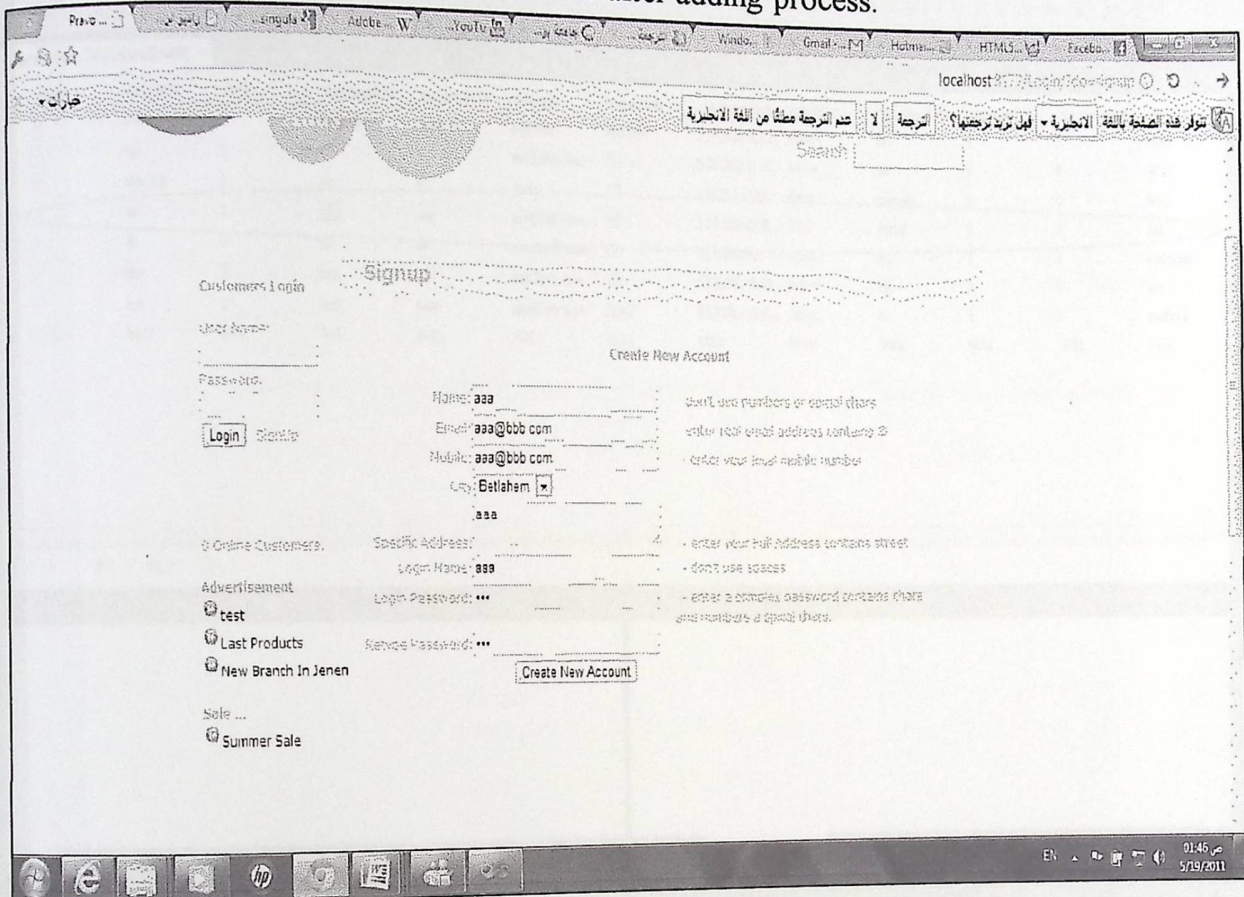


Figure (6.5): test of registration of a new customer

We note in this form it has added to the database

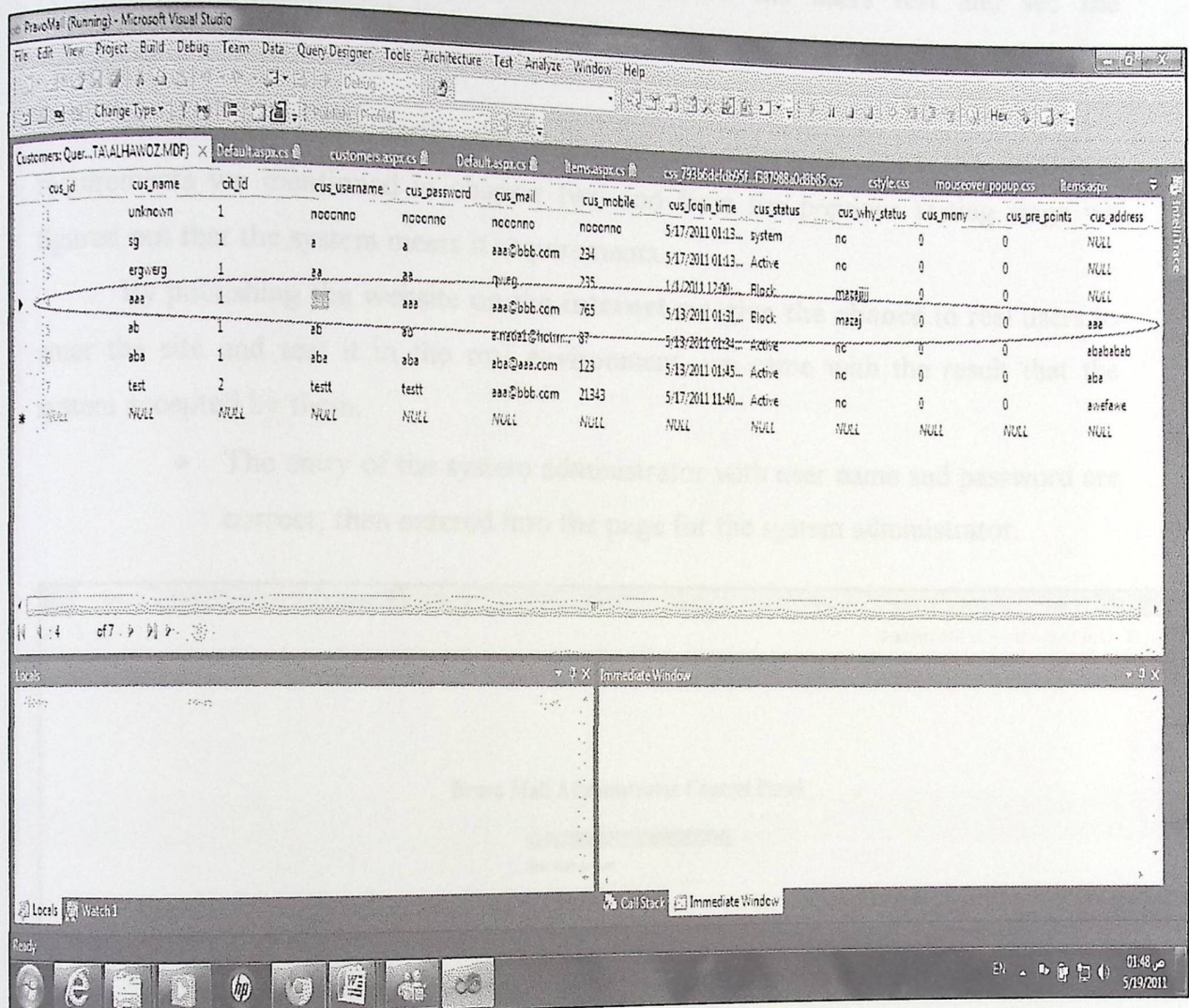


Figure (6.6): adding to the database

6.5 Acceptance Testing

Acceptance testing is the process where the users test and see the information system in its **final complete form**, the result of this test is that the users accept it.

In this stage we verify the ability of the system to meet the functional requirements we mentioned in chapter two and from the previous testing stage we figured out that the system meets its requirements.

By publishing the website on the **internet we give the chance** to real users to enter the site and test it in the real environment, we came with the result that the system accepted by them.

- The entry of the system administrator with user name and password are correct, then entered into the page for the system administrator.

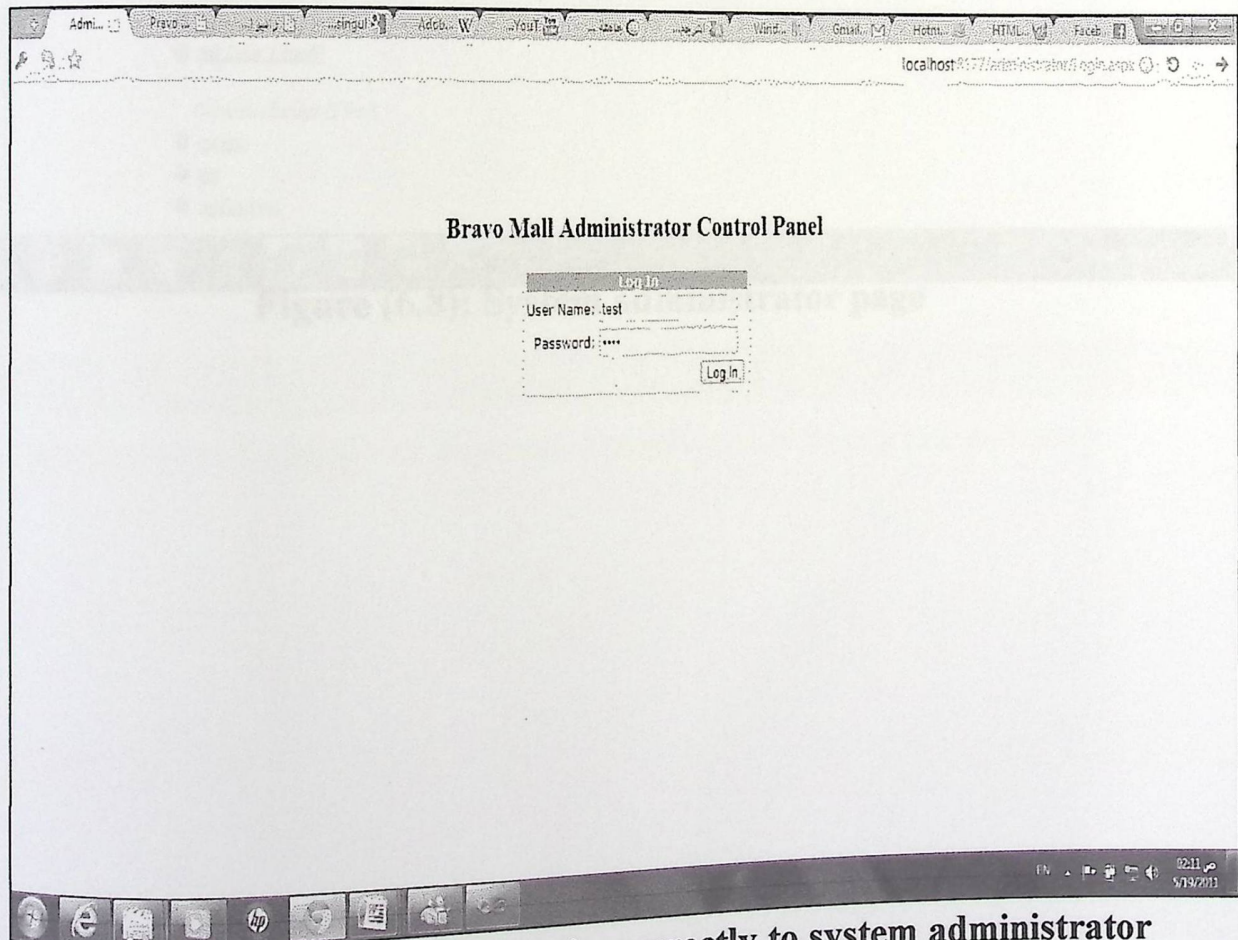


Figure (6.7): Testing the login correctly to system administrator

The following figure shows the system administrator page, which include all categories which are managed by system administrator:

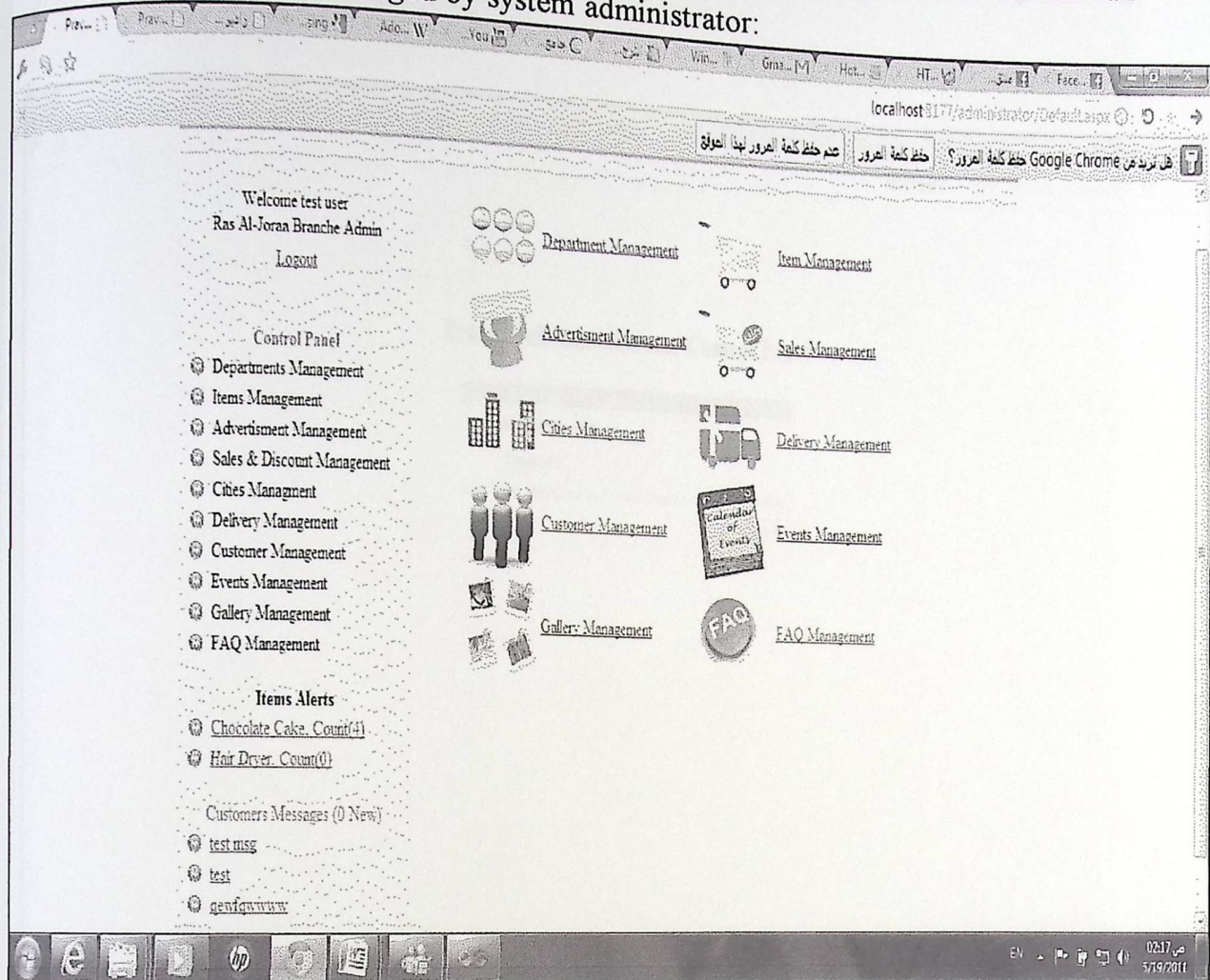


Figure (6.8): System administrator page

- The entry of the system administrator with user name and password are incorrect.

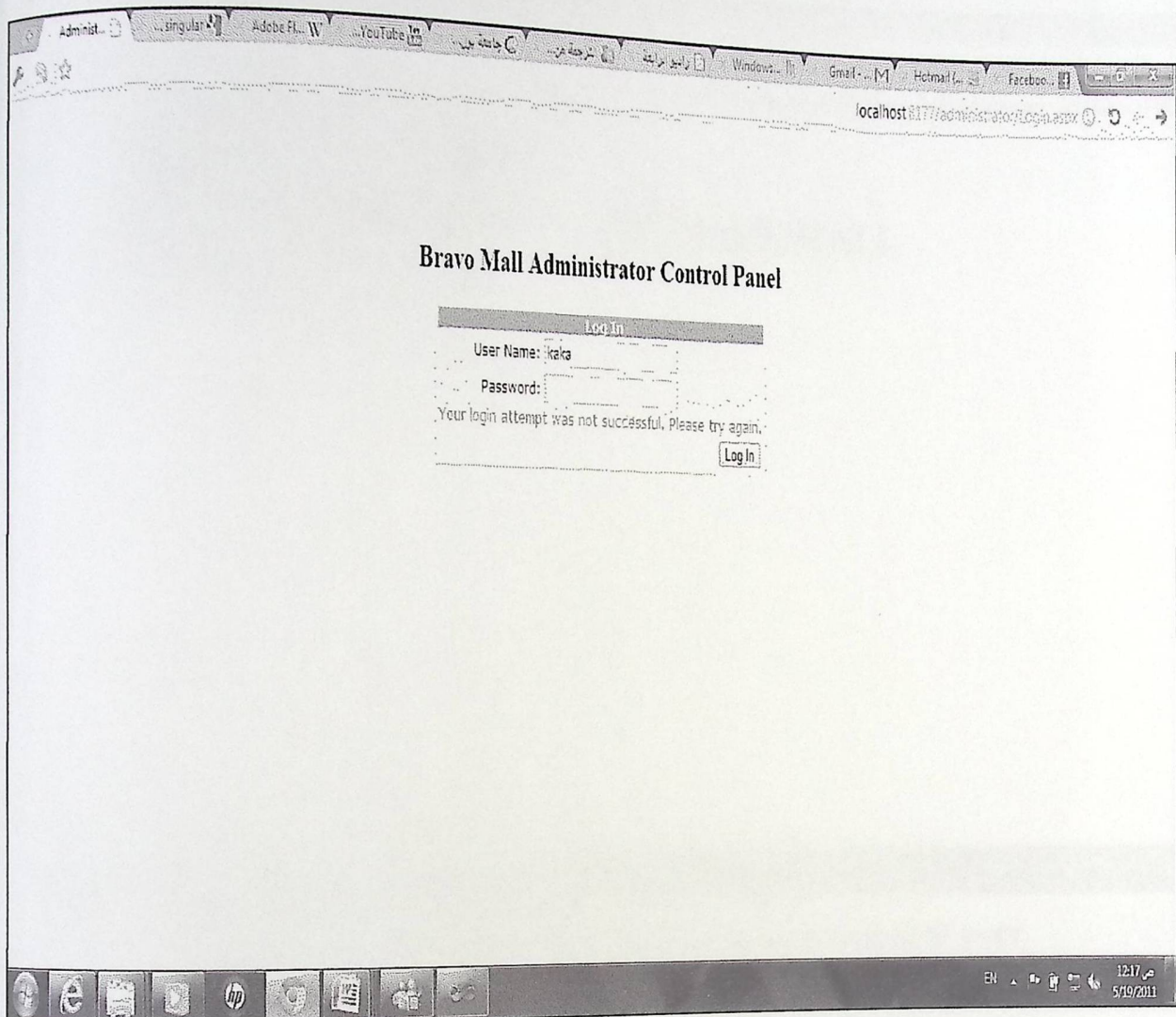


Figure (6.9): Testing the login incorrectly to system administrator

- The entry of the system user with **user name** and **password** are correct, then entered into the user page .

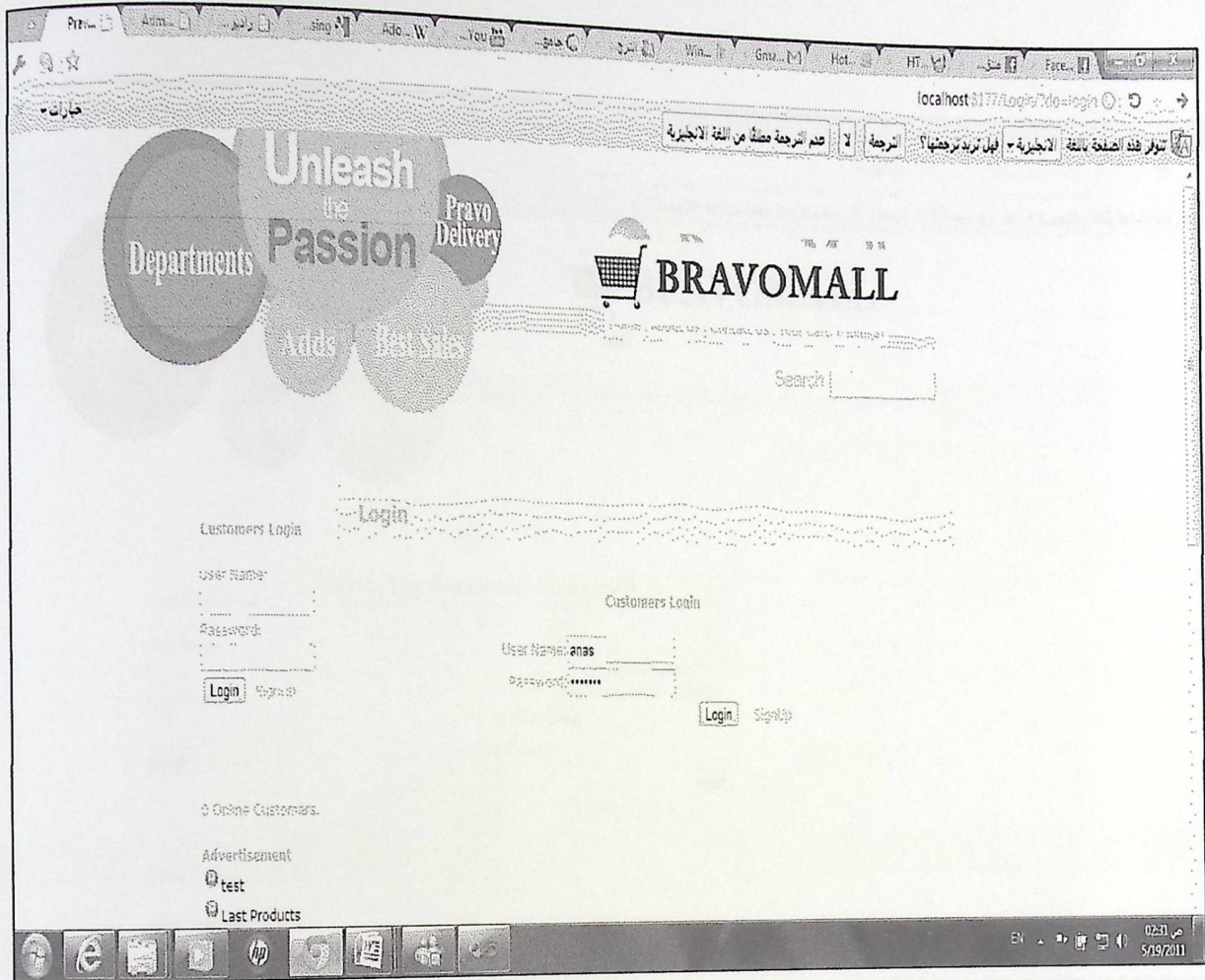


Figure (6.10): Testing the login correctly to system user

- The entry of the system user with **user name** and **password** are correct, then entered into the user page .

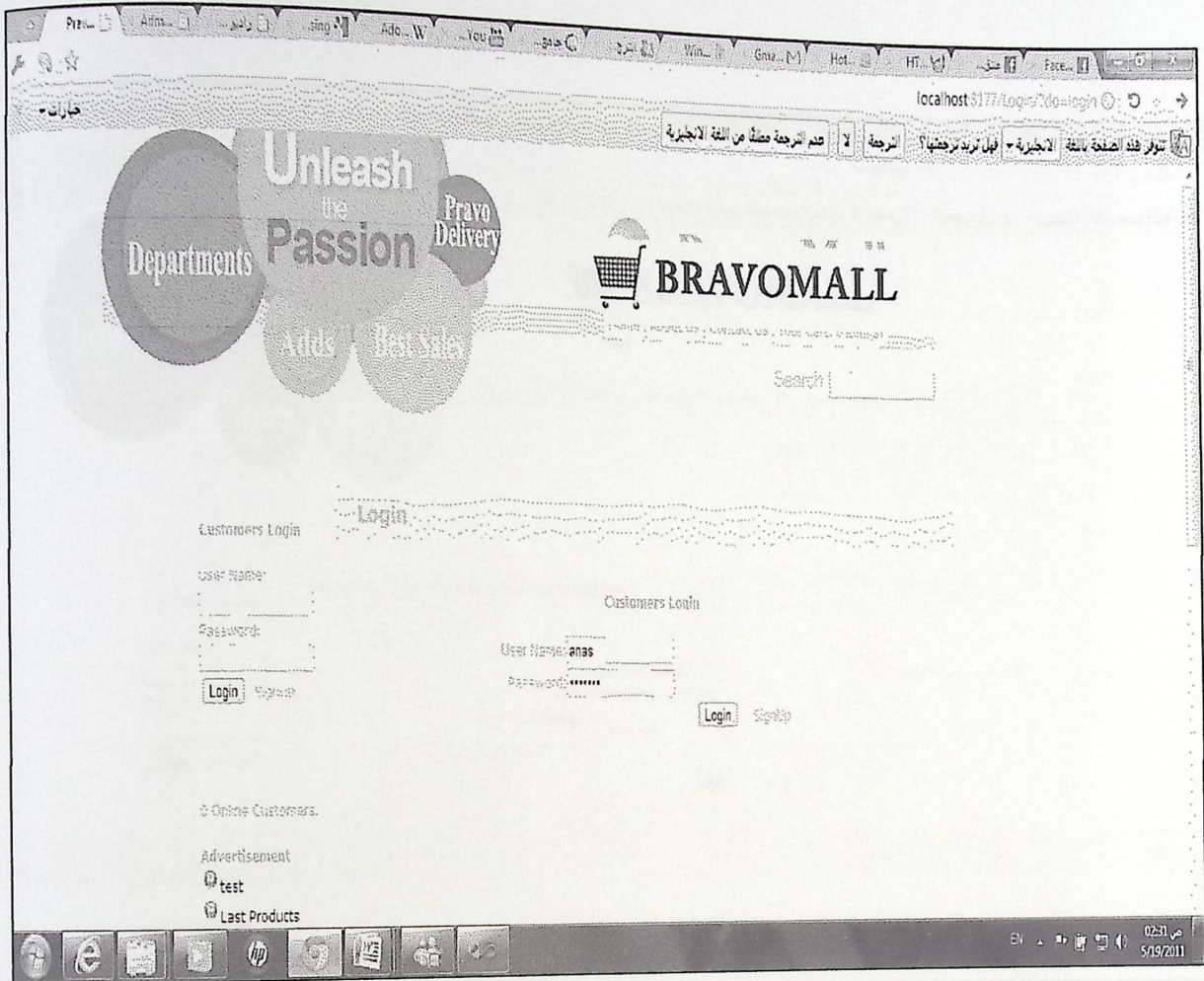


Figure (6.10): Testing the login correctly to system user

- The entry of the system user with user name and password are incorrect.

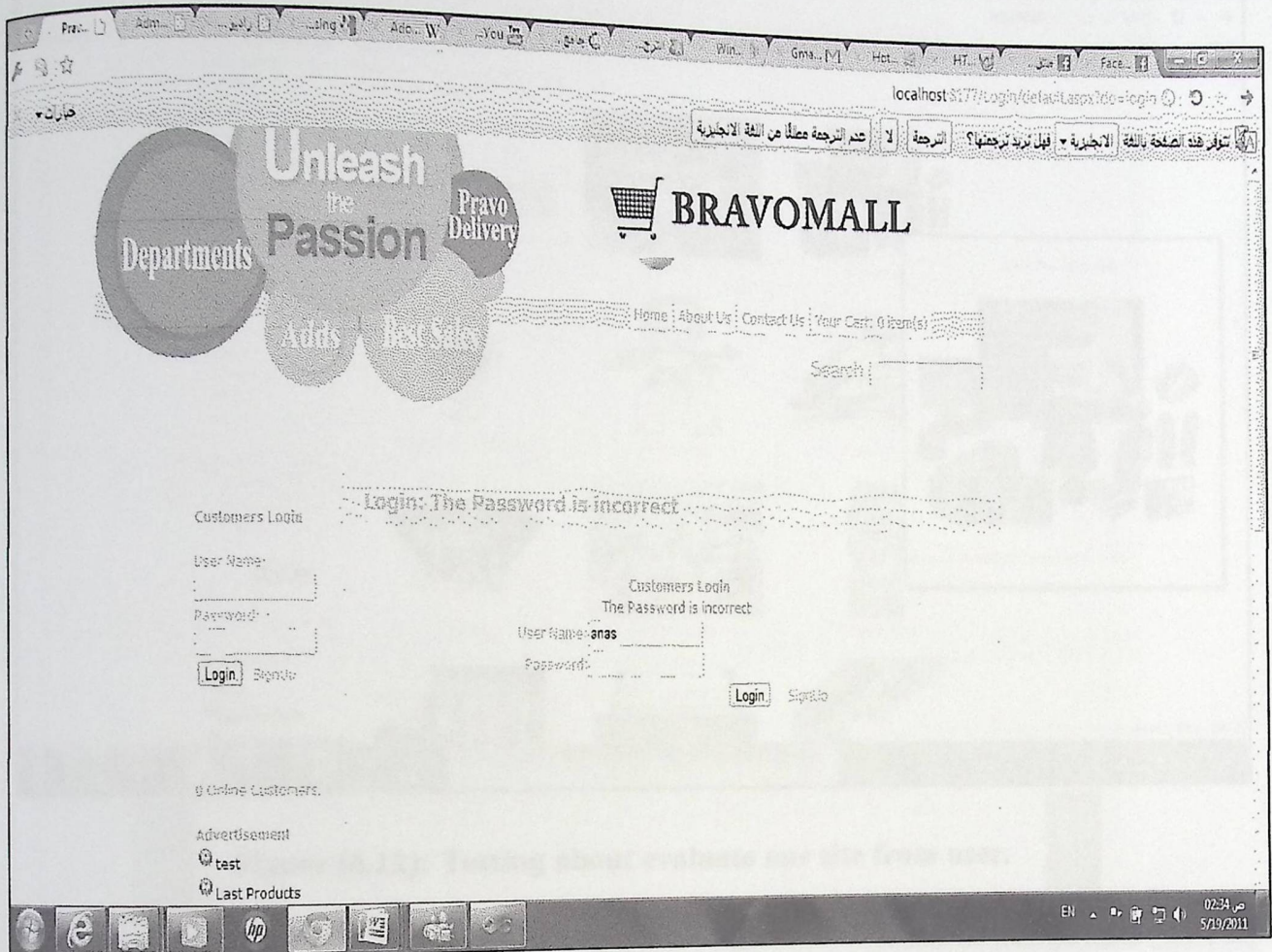


Figure (6.11): Testing the login incorrectly to system user

- The entry of the system user with user name and password are incorrect.

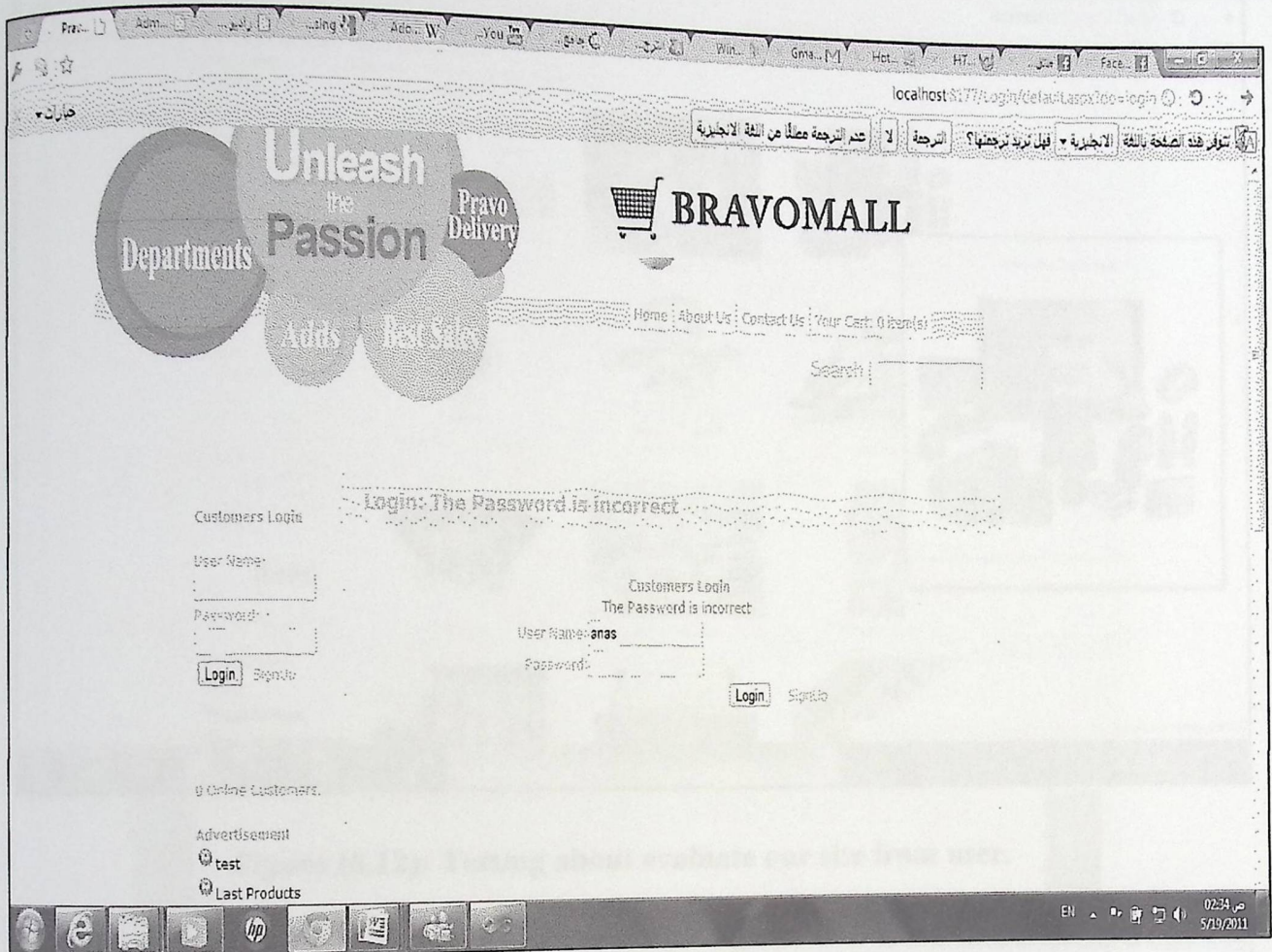


Figure (6.11): Testing the login incorrectly to system user

- The following figure shows possibility of the user to evaluate the system as customer services, prices, and products. In addition to that he can see the percentage of the vote.

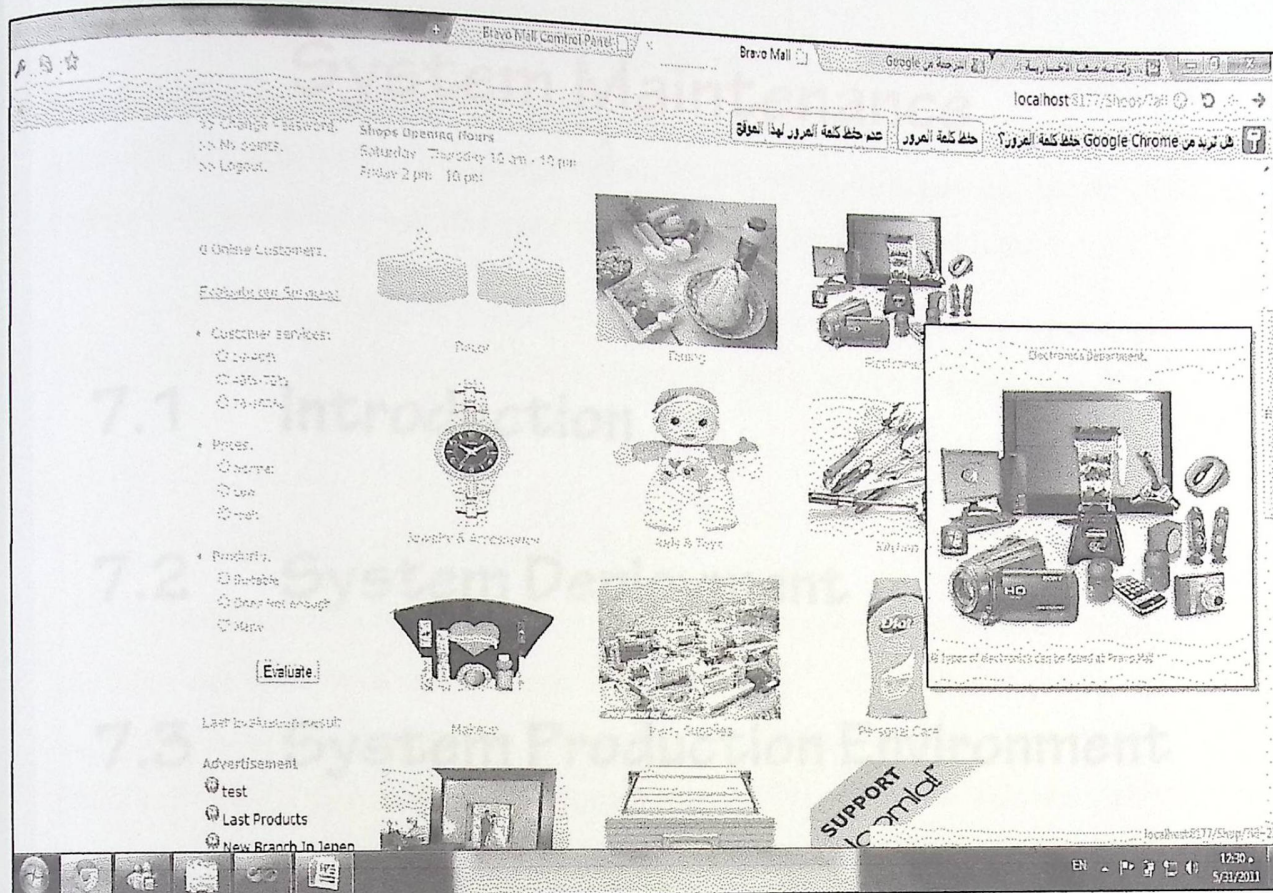


Figure (6.12): Testing about evaluate our site from user.

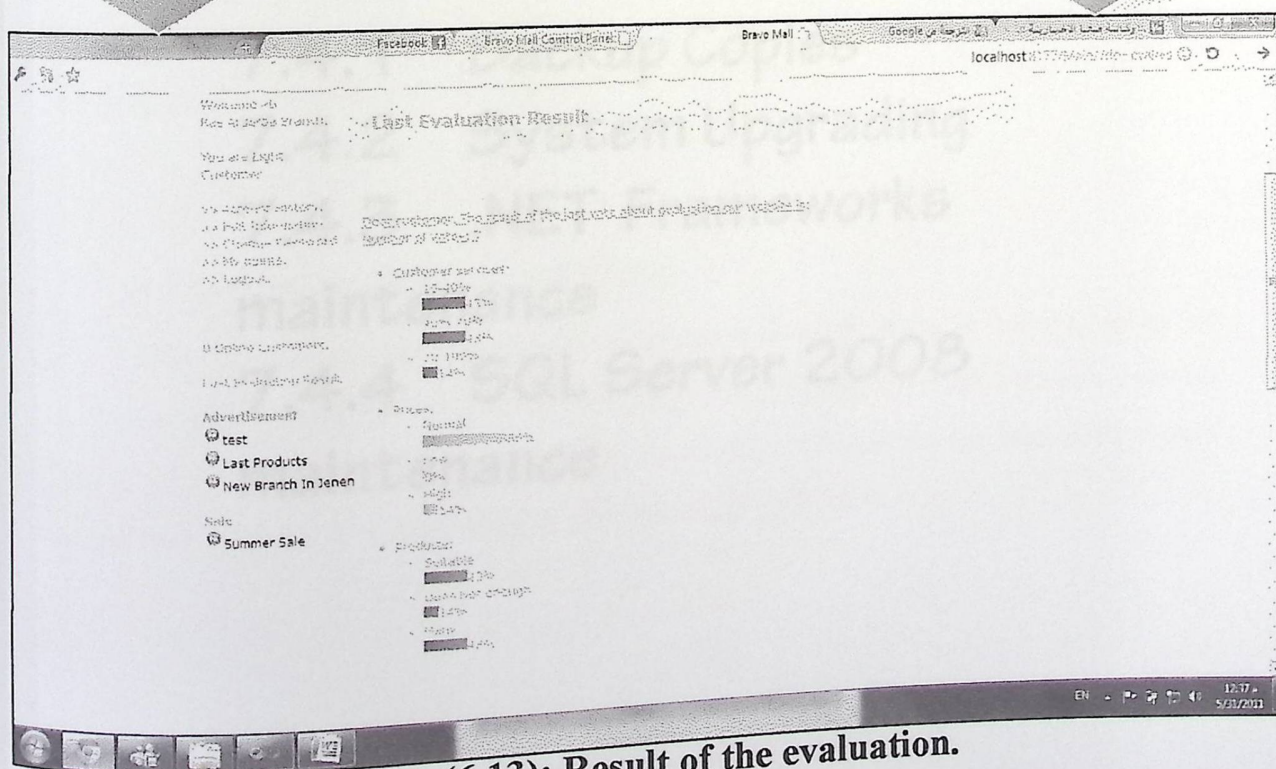


Figure (6.13): Result of the evaluation.

- The following figure shows possibility of the user to evaluate the system as customer services, prices, and products. In addition to that he can see the percentage of the vote.

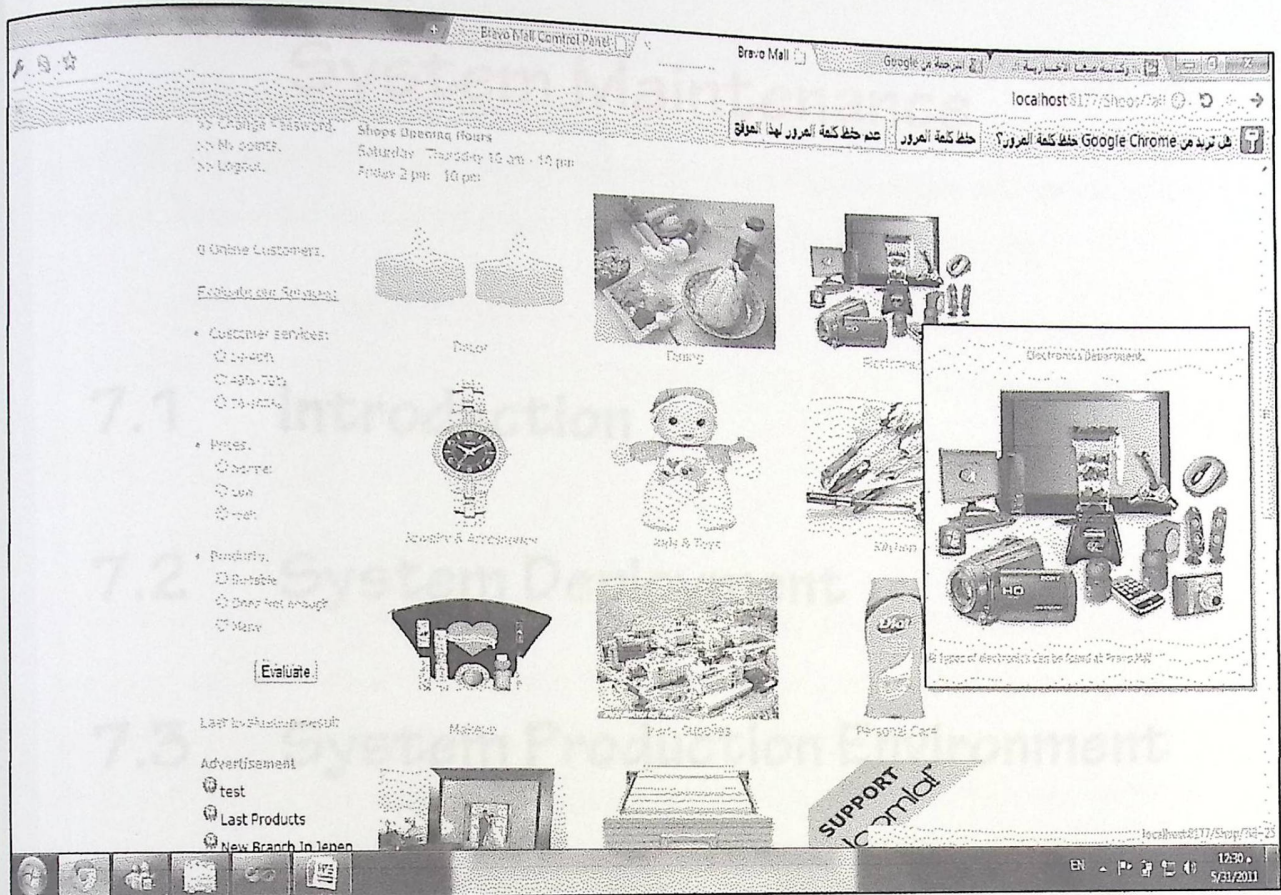


Figure (6.12): Testing about evaluate our site from user.

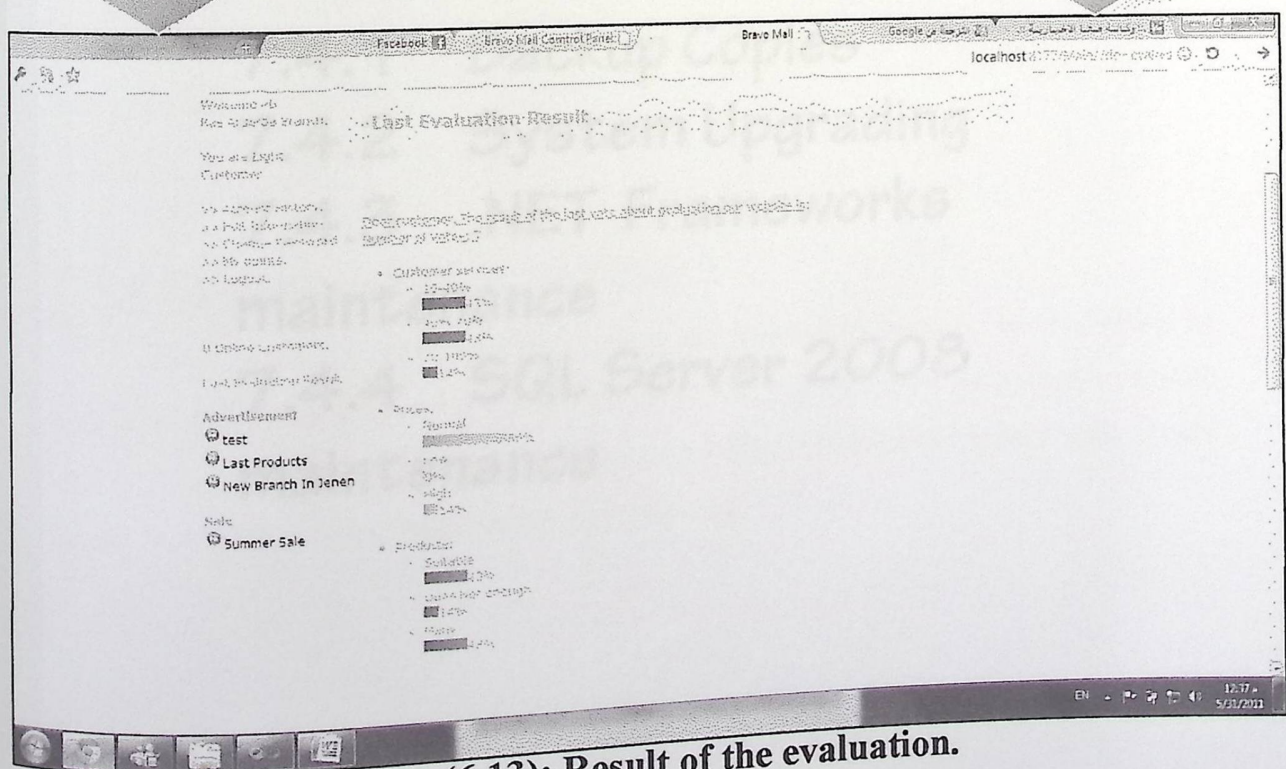


Figure (6.13): Result of the evaluation.

CHAPTER SEVEN

System Maintenance

- 7.1 Introduction
- 7.2 System Deployment
- 7.3 System Production Environment
- 7.4 System maintenance Plan
 - 7.4.1 Backup Copies
 - 7.4.2 System Upgrading
 - 7.4.3 .NET Frameworks
maintenance
 - 7.4.4 SQL Server 2008
maintenance

7.1 Introduction

Maintenance stage of the system is the most important stages throughout the system, which helps keeping the system running for a long time, and from which to work full maintenance of the system so that it is working to adjust and reform of the system **commensurate** with the new requirements of the system working.

At this stage, the system becomes ready to work in the real environment and to realize that there are several procedures that must be taken into account, **namely:**

7.2 System Deployment

For the system to perform its functions efficiently and **effectively required**, you must set up system environment with the support and to provide the system on the implementation of **minimum operational requirements**, so make sure it works effectively and properly and then adopt the new system which was built and operated.

7.3 System Production Environment

The system was building using **Visual Studio.Net2010** which provides a design for screens and **system database**, and easily add, delete, and the amendments to any part of the system.

7.4 System maintenance Plan

When you **run the system in real environment** there is the possibility of errors or failure to achieve some system requirements that must be avoided, because the user of the system does not have the knowledge and **ability to deal with errors** when they occur so you must follow the following procedure.

7.4.1 Backup Copies

We must make backup copies of the **full system** and its database, and stored it on the storage media outside the device that you are developing a system on it and we must store any adjustments that are made on the system for fear of the occurrence of any disorder causing loss. And the database can make backup copies of them and that means you provide the manufacturer of the **SQL Server 2010** used in our system which provides many options to work back up to the foreign media, and we must work these backups on a regular basis to ensure that no loss.

7.4.2 System Upgrading

It's possible that the user **encounters some problems** during the making of **amendments** to the system to increase efficiency and effectiveness, and as a result of lack of experience and knowledge in how to do it. So we can avoid these problems by using Visual Studio.Net to do the necessary amendments to the system at any time, where you can modify the format of the screens through screen **Solution Explorer** in Visual Studio.Net, where you can see the model you want to modify it, as it should work procedures and precautions when building Including the use of the system (**Validation Control**) in order to prevent the user from entering the wrong values, and use (**Data Set**) to prevent direct contact with the database.

7.4.3 .NET Frameworks maintenance

This is done through **Visual Studio.Net2010** to modify any part of parts of the system, and the amendments on the screens for the system where they are entering on the page you want to modify them or taking the process of **deletion of pages**.

7.4.4 SQL Server 2008 maintenance

Database is an important part in the **Bravo mall** system that containing all the tables used in the system, and there is another important part of Security from which we can define the roles and give **permissions** to each user uses the database, **The (SQL Server)** providing possibility of control the type of authorization (**Authentication**) necessary to access the database.

CHAPTER EIGHT

Conclusions and recommendations

1. Facilitate the shopping process by allow customers to access web sites and interfaces to the shopping operations.
2. Convert Store from Brick and Mortar to Click and Mortar because Web-based businesses usually have lower costs and greater flexibility than brick-and-mortar operations.
3. Control the site through administration.

8.1 Conclusions

8.2 Recommendations

- We performed in our system the following business concepts:
 - **FAQ (Frequently Asked Questions) Concept:** are listed questions and answers, all supposed to be commonly asked in some context, and pertaining to a particular topic.
 - **Loyalty Programs:** are structured marketing efforts that reward and therefore encourage loyal buying behavior -- behavior which is potentially beneficial to the firm.
 - **Partnership:** the ability to enter a product service, web content or specific -- or products. So we applied it in our system when user sign into the system, welcome message is shown in user page.
 - **Cross selling:** defined as the action or practice of selling among or between established clients, markets, users, etc. or that of selling an additional product or service to an existing customer.
 - **Conversion:** how do we have a popular marketing tool, right from the days of e-mails and selling in many forms to online marketing, where people find thousands of high amounts to enter on any given day. But in an online manner right for your convenience life. Such as in our system every month account for each user.

8.1 Conclusions

After completion of the development of the system working team reach to achieve results and goals that had been planned. In addition, the Working team reaches to a set of recommendations that would improve the system and increase the efficiency of the future.

1. **Facilitate** the shopping processes by allow customers to access web sites and interfaces to do shopping operations.
2. **Convert Bravo Mall from Brick and Mortal to Click and Mortal** because Web-based businesses usually have lower costs and greater flexibility than brick-and-mortal operations.
3. **Control** the site through administrator.
4. Was to take **advantage of distributed databases** to facilitate and activate the existing data on the site and ensure the protection of the site.
5. Achieved the **main goal** in our system focus on **selling not buying**.
6. We performed in our system the following business concepts:
 - **FAQ (Frequently Asked Questions) Concept:** are listed questions and answers, all supposed to be commonly asked in some context, and pertaining to a particular topic.
 - **Loyalty Program:** are structured marketing efforts that reward, and therefore encourage, loyal buying behavior — behavior which is potentially beneficial to the firm .
 - **Personalization:** the ability to tailor a product service, web content to specific user preference. So we applied it in our system when user sign into the system, welcome message is shown in user page.
 - **Cross selling:** defined as the action or practice of selling among or between established clients, markets, traders, etc. or that of selling an additional product or service to an existing customer.
 - **Contest:** have always been a popular marketing tool, right from the days of clipping and mailing in entry forms to online contesting, where people find thousands of legit contests to enter on any given day. But is an online contest right for your ecommerce site. Such as in our system using **Points Account** for each user.

- **CRM (Customer Relationship Management):** is a widely-implemented strategy for managing a company's interactions with customers, clients and sales prospects. It involves using technology to organize, automate, and synchronize business processes—principally sales activities, but also those for marketing, customer service, and technical support. So we applied this concept in our system by dividing customers into four categories (light customer, Iron, Plutonium, and Gold).
- **System evaluation:** user can evaluate services, Prices, Products in the system, Then he can see the evaluation results.

8.2 Recommendations:

1. Develop our system to be **virtual mall** using virtual reality.

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We take the list of prices in our project from Al-Ofoq Center in yatta at 29, November 2010.

The End

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