Title of the Project

ONLINE SHOPPING

Introduction & objective

INTRODUCTION :

Online shopping (http://ektacartshop.com) is the process whereby consumers directly buy goods, services etc from a seller interactively in real-time without an intermediary service over the Internet. If an intermediary service is present the process is called electronic commerce. An online shop, e-shop, e-store, internet shop, web shop, web store, online store, or virtual store evokes the physical analogy of buying products or services at a bricks-and-mortar retailer or in a shopping mall. The metaphor of an online catalog is also used, by analogy with mail order catalogs. All types of stores have retail web sites, including those that do and do not also have physical storefronts and paper catalogs. Online shopping is a form of electronic commerce used for business-to-business (B2B) and business-to-consumer (B2C) transactions.

In general, shopping has always catered to middle class and upper class people. Shopping is fragmented and pyramid-shaped. At the pinnacle are elegant boutiques for the affluent; a huge belt of inelegant but ruthlessly efficient "discounters" flog plenty at the pyramid's precarious middle. According to the analysis of Susan D. Davis, at its base are the world's workers and poor, on whose cheapened labor the rest of the pyramid depends for its incredible abundance. Shopping has evolved from single stores to large malls containing many stores that most often offer attentive service, store credit, delivery, and acceptance of returns. These new additions to shopping have encouraged and targeted middle class women.

Consumers find a product of interest by visiting the website of the retailer directly, or do a search across many different vendors using a shopping search engine. Once a particular product has been found on the web site of the seller, most online retailers use shopping cart software to allow the consumer to accumulate multiple items and to adjust quantities, by analogy with filling a physical shopping cart or basket in a conventional store. A "checkout" process follows (continuing the physical-store analogy) in which payment and delivery information is collected, if necessary. Some stores allow consumers to sign up for a permanent online account so that some or all of this information only needs to be entered once. The consumer often receives an e-mail confirmation once the transaction is complete. Less sophisticated stores may rely on consumers to phone or e-mail their orders (though credit card numbers are not accepted by e-mail, for security reasons).

OBJECTIVE :

The main objective of the project is to create an online shopping that allows users to search and purchase item online based on size, color and brand etc. The selected items are displayed in a tabular format and the user can order their item online through credit card payment. Using this Website the user can purchase a product online instead of going out to a store and wasting time. There are many online shopping sites like Powell's, Amazon, Flipkat which were designed using Html. I want to develop a similar website using PHP, MYSQL Server.

Online shopping is an online web application where the customer can purchase product online. Through a web browser the customers can search for item by its color or brand, later can add to the shopping cart and finally purchase using credit card transaction. The user can login using his account details or new customers can set up an account very quickly. They should give the details of their name, contact number and shipping address. The user can also give feedback to a product by giving ratings on a score of five. The products are divided into many categories.

Project Category:

RDBMS (Relational Database Management System)

Relational Database Management System is a type of Database Management System that stores data in the form of related tables. Relational databases are powerful because they require few assumptions about how data is related or how it will be extracted from the database. An important feature of relational systems is that a single database can be spread across several tables.

SYSTEM ANALYSIS

Overview :

System analysis is the process of gathering and interpreting facts, diagnosing problem and using the information to recommend improvement to the system. In brief, we can say that analysis specifies what the system should do. In terms of any software development life cycle, the analysis phase is the first phase covered. It is the phase that is based on the following principles:

- The information domain of a problem must be represented and understood.
- The functions that the software is to perform must be defined.
- The behavior of the software (as a consequence of external events) must be represented.
- The models that depict information function and behavior must be portioned in a manner that uncovers detail in layered (or hierarchical) fashion.
- The analysis process should move from essential information toward implementation detail.

Proposed System :

The proposed system Online Shopping, provides facilities to access the product or item from anywhere in the community. The customer can visit the site and purchase the product according to their requirements. The main advantage of the system is that all transactions can be done through a common network. Many features of e-commerce have been implemented here. Thus making it more economical. The existing system has certain limitations than a web based system. In order to wipe out those limitations in the computerized system, we introduced a web based system. This will be able to meet all the requirements of the user. The proposed system will be able to implement easily. In this system there is no need of keeping files or records by the administrator. He can keep the records in the computer system itself and can be shared among networks. The user is able to access all the information at any point of time.

Preliminary Investigation:

Once the request for the information system development is received, the first system activity *"preliminary investigation"* begins. This activity is independent of the software-engineering paradigm. That means whether a system will be developed by means of the system development life cycle (SDLC), a prototyping strategy, or the structured analysis method, or a combination of these methods, preliminary investigation must be performed first.

1. Information Content:

Information content represents the individual data and control objects that constitute some larger collection of information transformed by the software. In our case the object, which is composite of a number of important pieces of data as *project, package* and item with its category? So the content is defined by the necessary attributes required to create it. During the analysis of the information domain the inter relationship between objects is also defined.

2. Information Flow:

Information flow represents the manner in which data and control changes as each move through a system. Input objects are transformed into intermediate information, which is further transformed to output. Here, additional information is also supplied and transformations are some engineering functions/formulae.

3. Information Structure:

Information structure represents the internal organization of various data and control items. Some queries are answered like "how does information in one information structure relate to information in another structure?", "is all information contained within a single structure or are distinct structure to be used?".

➢ Feasibility Study:

Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

- ❖ Technical Feasibility
- ❖ Operation Feasibility
- ❖ Economical Feasibility

1. Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Does the necessary technology exist to do what is suggested?
- Do the proposed equipments have the technical capacity to hold the data required to use the new system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?

2. Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

3. Economic Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economical feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

Used software & hardware tools

Tools / Platform, Hardware and Software Technologies

- Hardware Configuration

  Processor - Pentium IV 2.7 GHz
  Mother Board - Intel 815E Chipset
  RAM-1 GB DDR
  Hard Disk-160 GB
  Monitor- 17inches TFT
  DVD Writer-52X

- Software Configuration

Operating System: Microsoft Windows 7. To provide GUI (Graphical User Interface) support needed by the application. Also provide multitasking support for simultaneous execution of multiple processes.

Front End Tools: PHP is very powerful front end Web Application. It provides a great support for designing interface with networking facilities. It allows application by using mouse click, mouse up etc.
HTML is used as the scripting language to provide hyperlink benefits across the web pages.
Web Server: Internet Information Server (IIS): The Internet Information Server is the local internet server. The IIS will be used for testing the overall application execution.

Web Browser: Google Chrome: The web browser will be used for viewing the generated web pages and determine the correctness of the execution of the overall application.

Back End RDBMS: MYSQL Server provides several benefit such as High Storage Database, Good compatibility with PHP , Data Security is high, Easy to install and configure and Easy to learn. A database is a structured collection of data. Data refers to the characteristics of people, things and events. MYSQL Server stores each data item in its own fields. In MYSQL Server, the fields relating to a particular person, thing or event are bundled together to form a single complete unit of data, called a record (it can also be referred to as raw or an occurrence). Each record is made up of a number of fields. No two fields in a record can have the same field name.
MYSQL SERVER TABLES: MYSQL Server stores records relating to each other in a table. Different tables are created for the various groups of information. Related tables are grouped together to form a database.

PRIMARY KEY: Every table in MYSQL Server has a field or a combination of fields that uniquely identifies each record in the table. The Unique identifier is called the Primary Key, or simply the Key. The primary key provides the means to distinguish one record from all other in a table. It

allows the user and the database system to identify, locate and refer to one particular record in the database.

RELATIONAL DATABASE: Sometimes all the information of interest to a business operation can be stored in one table. MYSQL Server makes it very easy to link the data in multiple tables. Matching an employee to the department in which they work is one example. This is what makes MYSQL Server a relational database management system, or RDBMS. It stores data in two or more tables and enables you to define relationships between the tables and enables you to define relationships between the tables.

FOREIGN KEY: When a field is one table matches the primary key of another field is referred to as a foreign key. A foreign key is a field or a group of fields in one table whose values match those of the primary key of another table.

HARDWARE

Content	Description
HDD	20 GB Min 40 GB Recommended
RAM	512 GB Min 1 GB Recommended
Monitor	Any type of display screen

SOFTWARE

Content	Description
OS	Windows XP with SP2 or Windows Vista or Windows 7,8,10
Database	MY-SQL
Technologies	PHP
IDE	Dreamweaver CS3
Browser	Google Chrome

Waterfall Model :

The waterfall model is a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of Conception,Initiation, Analysis, Design,Construction, Testing,Production and Maintenance.Water fall approach was first Process Model to be introduced and followed widely in Software Engineering to ensure success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate process phases.

The phases in Waterfall model are: Requirement Specifications phase, Software Design, Implementation and Testing & Maintenance. All these phases are cascaded to each other so that second phase is started as and when defined set of goals are achieved for first phase and it is signed off, so the name "Waterfall Model". All the methods and processes undertaken in Waterfall Model are more visible.

Software Requirement & Specification

Software Requirement Specification :

The *software requirement specification (SRS)* is very important part of the software building process, which describes the actual user level requirement from technical point of view. i.e. what the user exactly wants ?or for what purpose we are making everything The objective of preparing the software requirement specification is to represent the requirements of the software in such a manner that ultimately leads to successful software implementation.

It is the result of the analysis process of the software development. It should contain all the data the software is going to process, the function it will provide, and the behavior it will exhibit. This Software Requirements Specifications (SRS) is defined in IEEE Std. 830-1993, IEEE Recommended Practice for Software Requirements Specifications.

The SRS document itself states in precise and explicit language those functions and capabilities a software system (i.e., a software application, an ecommerce Web site, and so on) must provide, as well as states any required constraints by which the system must abide. The SRS also functions as a blueprint for completing a project with as little cost growth as possible. The SRS is often referred to as the "parent" document because all subsequent project management documents, such as design specifications, statements of work, software architecture specifications, testing and validation plans, and documentation plans, are related to it.

Requirements analysis in systems engineering and software engineering, encompasses those tasks that determines the needs or conditions to meet for a new or altered product, taking account of the possibly conflicting requirements of the various stakeholders, such as beneficiaries or users. Requirements analysis is critical to the success of a development project. Requirements must be documented, actionable, measurable, testable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design. Requirements can be architectural, structural, behavioral, functional, and non-functional.

A major element is building system is selecting compatible software. The system analyst has to determine which software package is best for the candidate system. The basic idea behind software requirement specification is to bridge the communication gap between the user and the developer. SRS forms the basis of software development.

PURPOSE

The purpose is to develop user friendly and effective Product store website using PHP & MYSQL. The website should support advanced features and ability to link with the database and object-oriented program. Proposed system should be more useful and hardware compatible when compared to existing systems. The new system is almost error free and guides the user to avoid mistake.

HARDWARE REQUIREMENTS

Processor	: Any new generation processor
RAM	: Reasonable for the processor
Hard Disk Drive	: More than 512 MB recommended
Key Board	: Standard Keyboard recommended
Monitor	: Any color monitor recommended
Display adapters	: Super VGA
Floppy Drive	: Not necessary
CD Drive	: Not necessary
Printer	: DeskJet 640 or above
NIC	: Required

SOFTWARE REQUIREMENTS

Operating System	: Any operating System supporting Internet Browsing
Front End	: PHP
Back End	: MYSQL Server

MODULE DESCRIPTION

1) Register

• **Purpose**: If the user doesn't have an account then he will be asked to register.
• **Actor:** User
• **Input:** The user will enter details in the registration form according to the required fields. The fields include Username, Password, name, email, Address, contact no, card details.
• **Output:** After registration the user will be directed to the main home page.

2) Login

• **Purpose**: If the user wants to get access to all the functionalities of Online Shopping he should login using his username and password.
• **Actor:** User
• **Input:** The user will enter his username and password.
• **Output:** If it is a successful login the user will be directed to the main home page. Else if the user enters invalid information he will be asked to check the entered information.

3) Update Profile

• **Purpose**: If the user wants to change his personal account information then he can update his selected fields and the entire data will be updated in the data base through an update query.
• **Actor:** User
• **Input:** The user will update his account information.
• **Output:** The system will update the entered information in the database using an update query.

4) Logout

• **Purpose**: If the user wants to end his session and sign out of the website then he can use the logout option.
• **Actor:** User
• **Input:** The user will click the logout button.
• **Output:** The user's account session comes to an end and he should login again if he wants to enter into the website.

Manage Shopping Cart

1) Place an order

• **Purpose**: If the user wants to purchase a product then he can place an order by selecting to add to shopping cart button and entering the quantity required under the product description.
• **Actor:** User
• **Input:** The user will enter the quantity required and click to add to shopping cart button.
• **Output:** The order will be added to the user's shopping cart.

Database Table

Table 1: Admin_login

Field Name	Data Type	Key	Description
Login_id	Varchar (50)	Primary key	Login ID
password	Varchar (50)		Password

Table 2: Item_Category

Field Name	Data Type	Key	Description
category_id	Numeric(4)	Primary key	Category ID
cat_name	Varchar (50)		Category Name

Table 3: Product_list

Field Name	Data Type	Key	Description
p_id	Numeric(4)	Primary key	Product ID
category_id	Numeric(4)	Foreign Key	Category ID
P_name	Varchar (50)		Product Name
price	Numeric(4)		Product Price
P_image_url	Varchar (50)		Product Image
P_serial	Varchar (50)		Serial No
P_size	Varchar (50)		Product Size
brand_name	Varchar (50)		Brand Name
P_description	Varchar (50)		Description
rating	Varchar (50)		Rating
Status	Varchar (50)		In Stock/Out of Stock

- **Table 4: Registration**

Field Name	Data Type	Key	Description
cust_id	Numeric(4)	Primary key	Customer ID
cust _login	Varchar (50)		Login ID
cust _password	Varchar (50)		Password
cust _name	Varchar (50)		Customer Name
email	Varchar (50)		Email ID
phone	Numeric(4)		Phone No.
address	Varchar (50)		Address
City	Varchar (50)		City Name
country	Varchar (50)		Country Name
Pin_code	Numeric(4)		Postal Code
Reg_date	Date		Registration Date

- **Table 5: Order_Details**

Field Name	Data Type	Key	Description
order_id	Numeric(4)	Primary key	Order ID
cust _id	Numeric(4)	Foreign Key	Customer ID
cust _name	Varchar (50)		Customer Name
order_id	Numeric(4)	Primary key	Order ID
p_id	Numeric(4)	Foreign Key	Product ID
p_name	Varchar (50)		Product Name
price	Numeric(4)		Product Price
quantity	Numeric(4)		Quantity
Total_price	Numeric(4)		Total Price
Order_date	Date		Order Date

- **Table 6: Payment**

Field Name	Data Type	Key	Description
pay_id	Numeric(4)	Primary key	Payment ID
order_id	Numeric(4)	Foreign Key	Order ID
cust_id	Numeric(4)	Foreign Key	Customer ID
cust _name	Varchar (50)		Customer Name
Net_amt	Numeric(4)		Net Amount
Card_type	Varchar (50)		Debit/Credit Card
Card_no	Numeric(4)		Card Number
Card_hold_name	Varchar (50)		Card Holder Name
Bank_name	Varchar (50)		Bank Name
Ex_date	date		Expire Date
Ccv_no	Numeric(4)		CCV No
Pay_date	date		Payment Date
status	Varchar (50)		Status

- **Table 7: Delivery**

Field Name	Data Type	Key	Description
de_id	Numeric(4)	Primary key	Delivery ID
order_id	Numeric(4)	Foreign Key	Order ID
cust_id	Numeric(4)	Foreign Key	Customer ID
Pay_id	Numeric(4)	Foreign Key	Payment ID
De_date	Varchar (50)		Delivery Date
De_by	Varchar (50)		Details of Delivery
status	Varchar (50)		Status

- **Table 8: Feedback**

Field Name	Data Type	Key	Description
f_id	Numeric(4)	Primary key	Feedback ID
order_id	Numeric(4)	Foreign Key	Order ID
cust_id	Numeric(4)	Foreign Key	Customer ID
P_id	Numeric(4)	Foreign Key	Product ID
feedback	Varchar (50)		Details of feedback
Rating	Varchar (50)		Rating Product

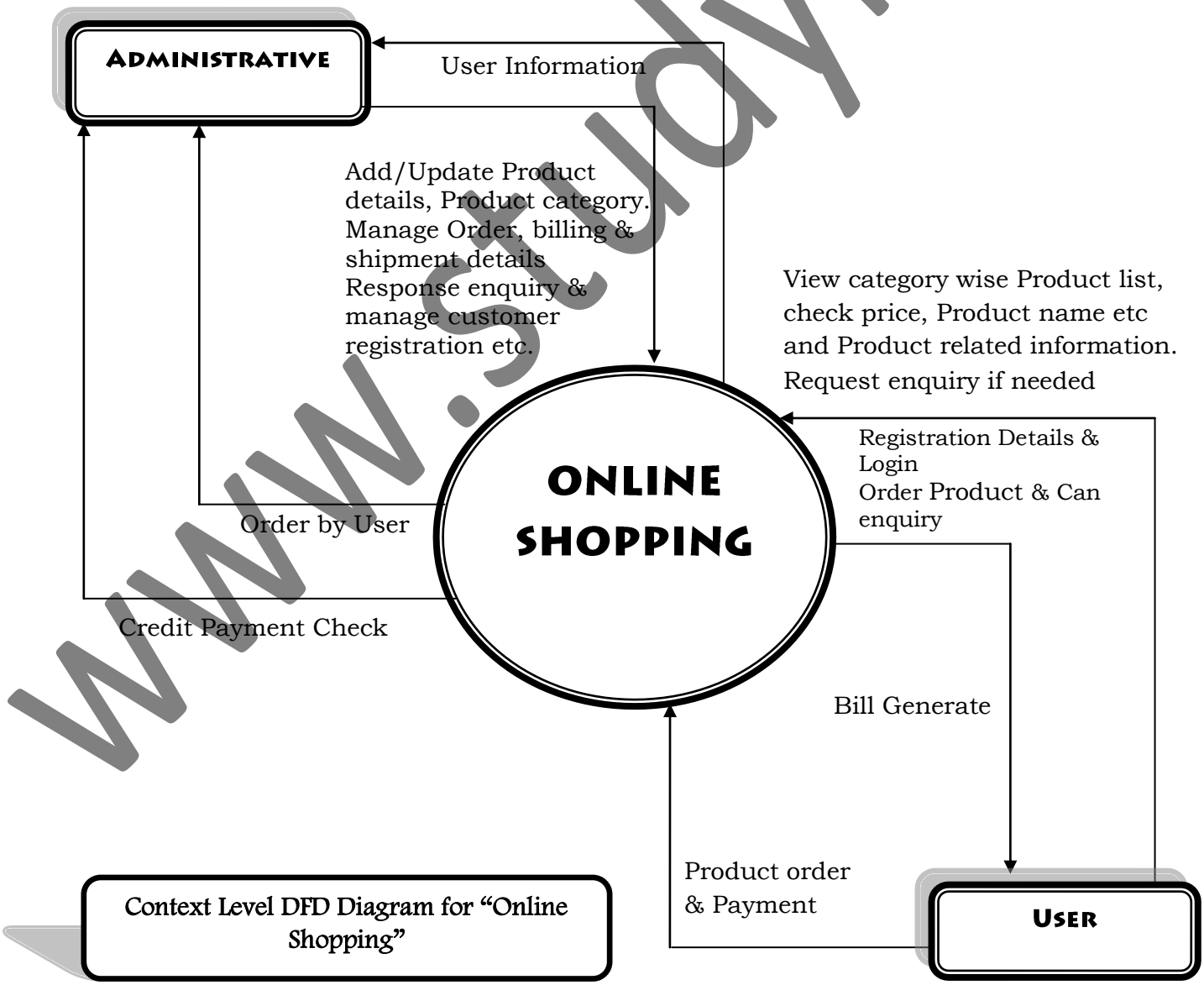
- **Table 9: Cancel_Order**

Field Name	Data Type	Key	Description
cancel_id	Numeric(4)	Primary key	Cancel ID
order_id	Numeric(4)	Foreign Key	Product Order ID
Pay_id	Numeric(4)	Foreign Key	Payment ID
cust_id	Numeric(4)	Foreign Key	Customer ID
cust_name	Varchar (50)		Customer Name
Net_amt	Numeric(4)		Net Amount
C_charge	Numeric(4)		Cancelation Charges
Re_amt	Numeric(4)		Return Amount
a/c_details	Varchar (50)		Account Details
C_date	Date		Cancel Date
Status	Varchar (50)		Status

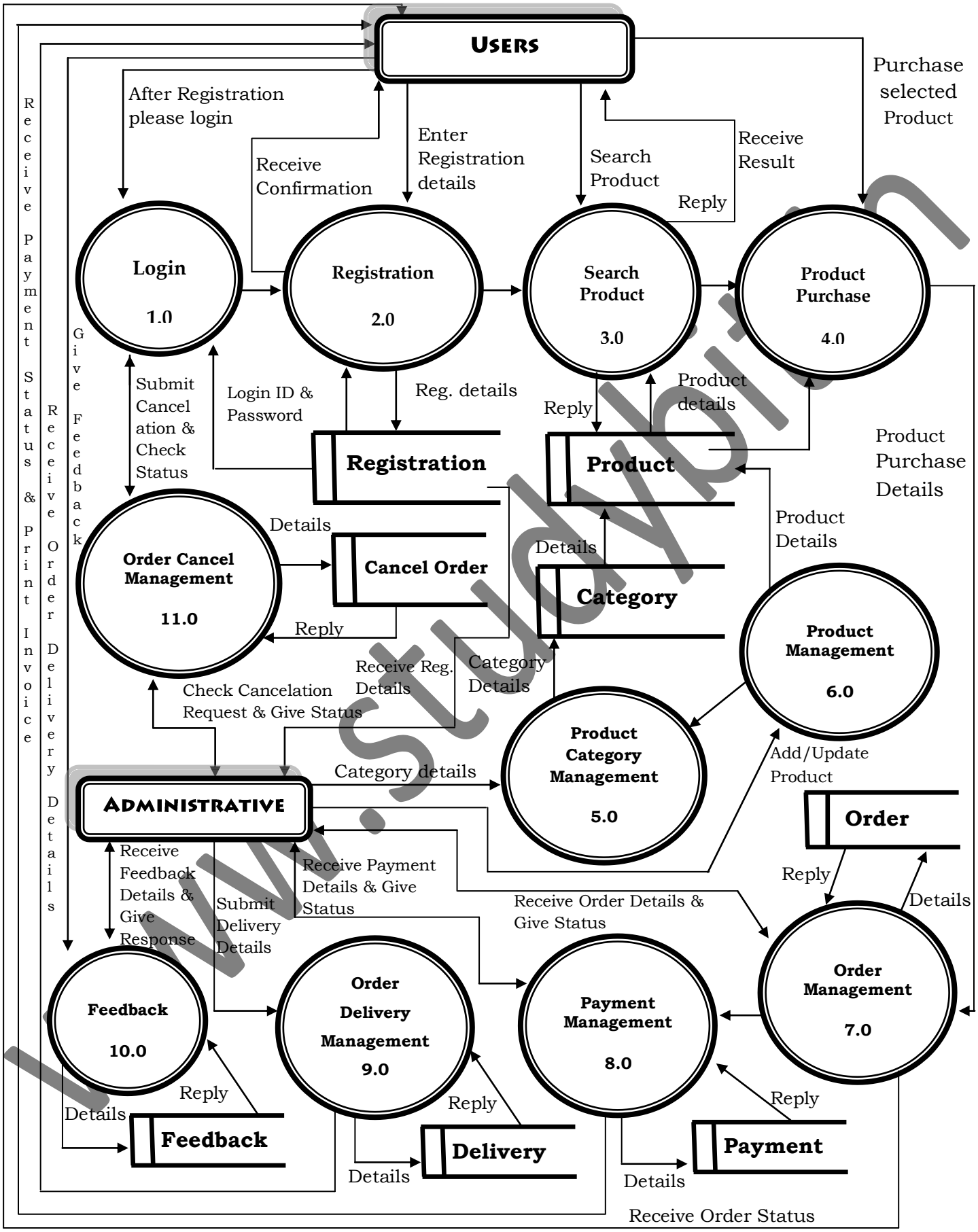
System Design

Overview:

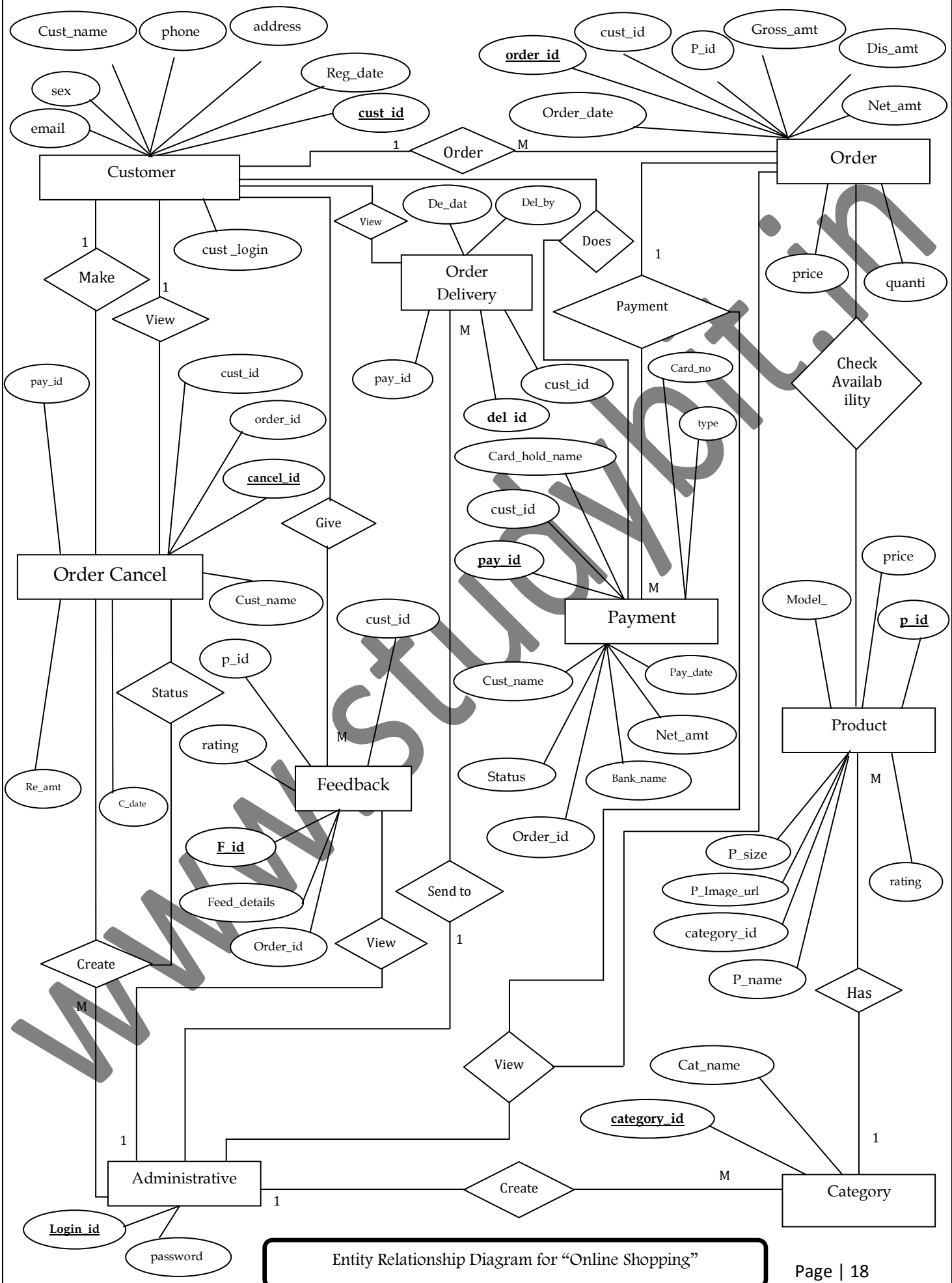
A Data Flow Diagram (DFD) is a graphical representation of the "flow" of data through an Information System. A data flow diagram can also be used for the visualization of Data Processing. It is common practice for a designer to draw a context-level DFD first which shows the interaction between the system and outside entities. This context-level DFD is then "exploded" to show more detail of the system being modeled. A DFD represents flow of data through a system. Data flow diagrams are commonly used during problem analysis. It views a system as a function that transforms the input into desired output. A DFD shows movement of data through the different transformations or processes in the system. Dataflow diagrams can be used to provide the end user with a physical idea of where the data they input ultimately has an effect upon the structure of the whole system from order to dispatch to restock how any system is developed can be determined through a dataflow diagram. The appropriate register saved in database and maintained by appropriate authorities.



Context Level DFD Diagram for "Online Shopping"

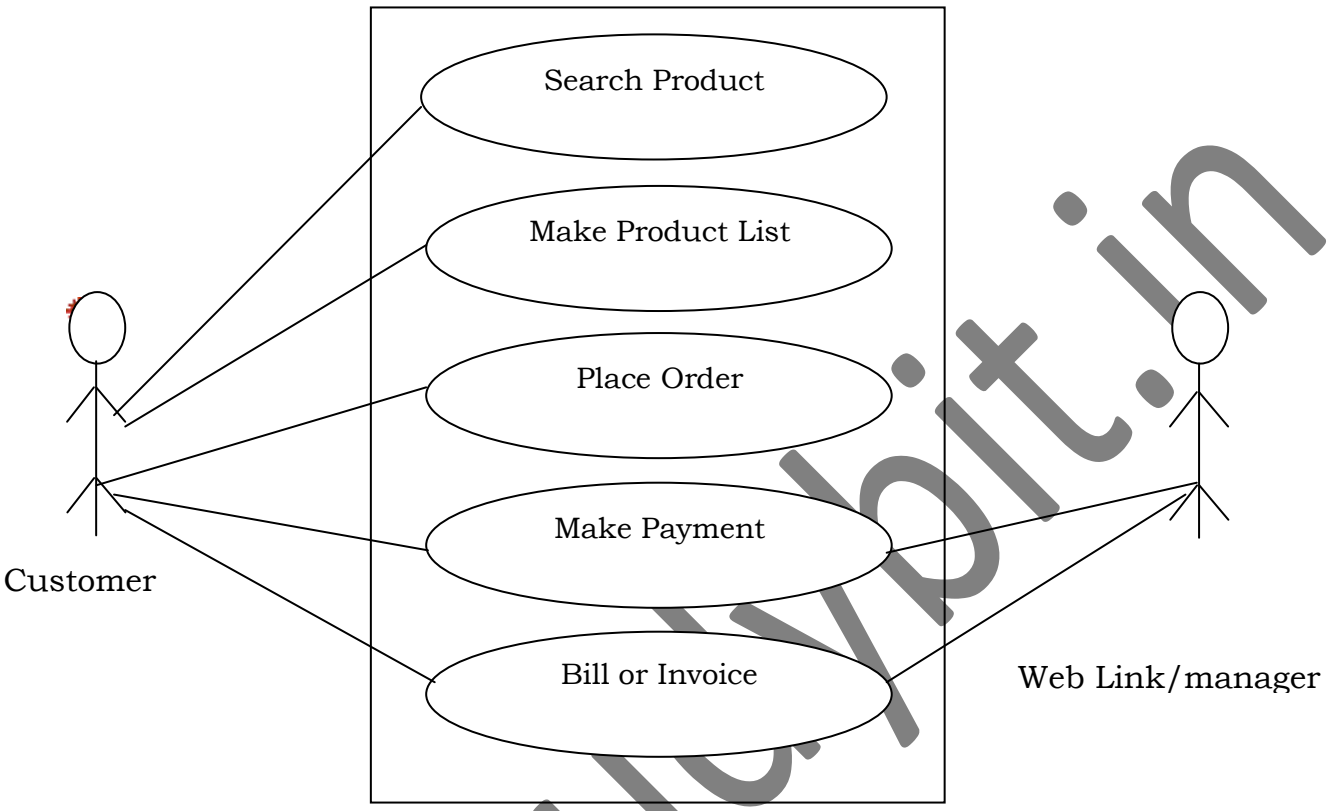


1st Level DFD Diagram for "Online Shopping"

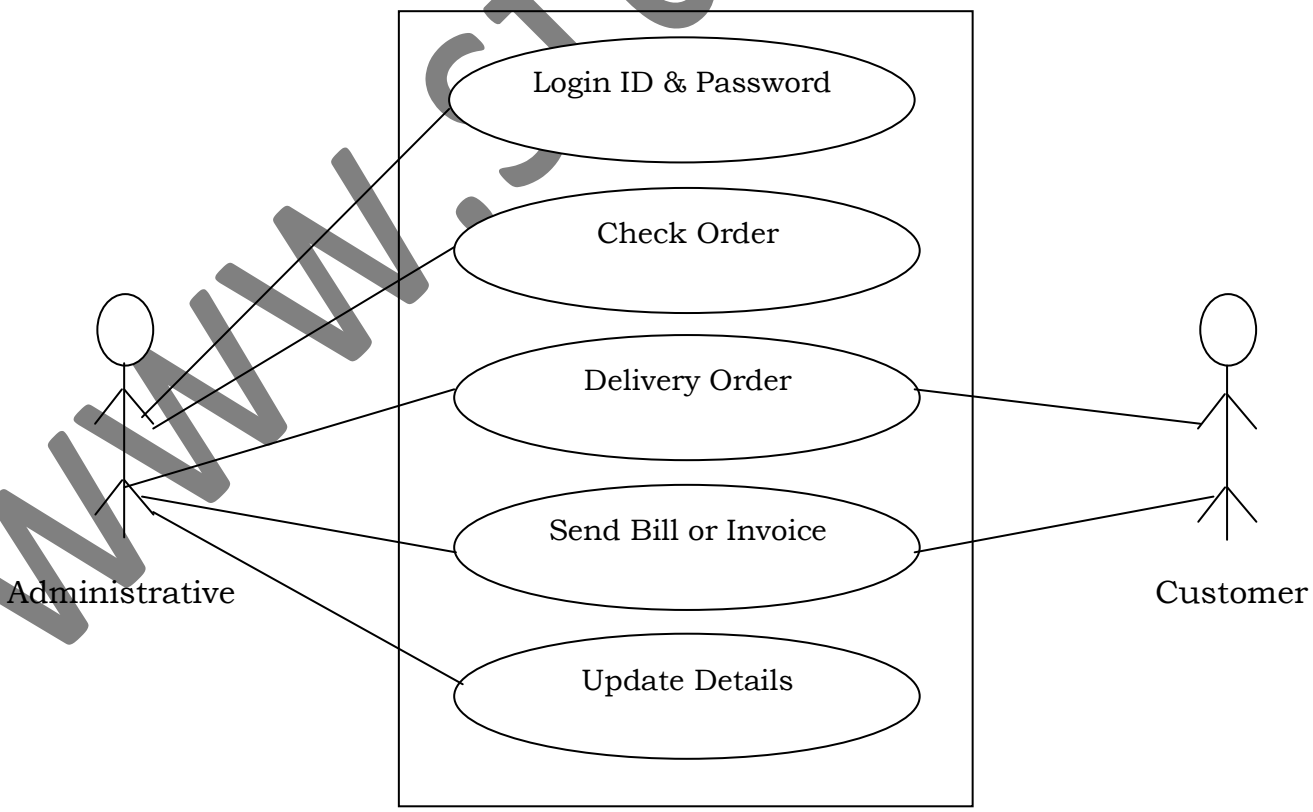


Entity Relationship Diagram for "Online Shopping"

Use Case Diagram for Customer



Use Case Diagram for Administrative



Testing

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. In fact, testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

★ **Unit Testing:-**

- Unit Testing This focuses verification effort on the smallest unit of s/w design-the s/w component or module.
- Using the component level design description as a guide, important control paths are tested to uncover errors within the boundary of the module.
- First, the module interface is tested to ensure that information properly flows into and out of the program unit under test.
- Then local data structures are examined to ensure that data stored temporarily maintains its integrity during all steps in an algorithm's execution.
- All independent paths through the control structure are exercised to ensure that all statements in a module have been executed at least once.
- The design of unit test can performed before coding begins or after source code has been generated.
- A review of design information provides guidance for establishing test cases that are likely to uncover errors in each of the categories.
- Each test case should be coupled with a set of excepted results.

★ **System Testing:-**

- System testing is actually a series of different tests whose primary purpose is to fully exercise the cross-based system.
- Although each test has a different purpose, all works to verify that system elements have been properly integrated and perform allocated functions.
- It has mainly four type of testing Units.

a) Recovery Testing:-

- Recovery testing is a system test that forces the s/w to fail in a variety of ways and verifies that recovery is properly performed.
- If recovery is automatic, initialization, check pointing mechanism, data recovery, and restart are evaluated for correctness.

b) Security Testing:-

- Security testing verifies that protection mechanism built into a system will, in fact, protect it from improper penetration.
- During security testing, the tester plays role of the individuals who desires to penetrate the system.

c) Stress Testing:-

- Stress testing executes a system in a manner that demands resources in a abnormal quantity, frequency, or volume.
- A variation of stress testing is a technique called sensitivity testing.

d) Performance Testing:-

- Performance testing is design to test the run time performance of s/w within the context of an integrated system.
- Performance testing occurs throughout all steps in the testing process.
- Performance tests are often coupled with stress testing and usually required both h/w and s/w instrumentation.

★ **Integration Testing**

Integration testing takes individual software modules as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

CONCLUSION & LIMITATION & FUTURE SCOPE

The Internet has become a major resource in modern business, thus product shopping has gained significance not only from the entrepreneur's but also from the customer's point of view. For the entrepreneur, electronic shopping generates new business opportunities and for the customer, it makes comparative shopping possible. As per a survey, most consumers of online stores are impulsive and usually make a decision to stay on a site within the first few seconds. In this project, the user is provided with an e-commerce web site that can be used to buy Products online. To implement this as a web application we used PHP as the Technology. PHP has several advantages such as enhanced performance, scalability, built- in security and simplicity. To build any web application using PHP we need a programming language such as PHP, HTML # and so on. PHP was the language used to build this application. MYSQL was used as back-end database since it is one of the most popular open source databases, and it provides fast data access, easy installation and simplicity.

A good shopping cart design must be accompanied with user-friendly shopping cart application logic. It should be convenient for the customer to view the contents of their cart and to be able to remove or add items to their cart. The shopping cart application described in this project provides a number of features that are designed to make the customer more comfortable. This project helps in understanding the creation of an interactive web page and the technologies used to implement it. The design of the project which includes Data Model and Process Model illustrates how the database is built with different tables, how the data is accessed and processed from the tables. The building of the project has given me a precise knowledge about how PHP is used to develop a website, how it connects to the database to access the data and how the data and web pages are modified to provide the user with a shopping cart application.

All the suggestions forwarded in the software proposal have been completed and the final threshold or the application has been crossed. Viewing through the system development a brief figure can be seen as follows.

- Comprehending the problem
- Studying the existing scenario

- Building up the course of action to reach up the goal
- Designing the problem
- Visualizing the solution as reports
- Preparing the system with test data

Suggestions

As mentioned early this site is only the preliminary stage of the full expansion plan of the Product store system and it has also a wide variety of improving chances. As and when the technology and the business plans are improving additional facilities can be added to the system without disturbing the existing part much.

Limitations of the Project :

There are some limitations for the current system to which solutions can be provided as a future development:

- ✓ The system is not configured for multi- users at this time. The concept of transaction can be used to achieve this.
- ✓ The Website is not accessible to everyone. It can be deployed on a web server so that everybody who is connected to the Internet can use it.
- ✓ Credit Card validation is not done. Third party proprietary software can be used for validation check.

As for other future developments, the following can be done:

- ✓ The Administrator of the web site can be given more functionality, like looking at a specific customer's profile, the Products that have to be reordered, etc.
- ✓ Multiple Shopping carts can be allowed.

Bibliography

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