

Online shopping system

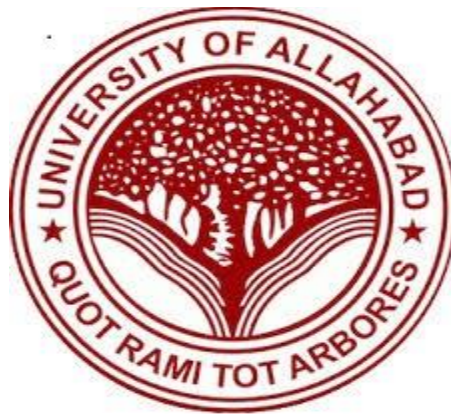
Online Shopping System

Submitted in

Partial fulfillment of the requirement for the award of

The degree

Bachelor of Computer Application



By

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Institute of Professional Studies

University Of Allahabad

Allahabad

2016

CERTIFICATE

This is to certify that the Major Project report entitled “**ONLINE SHOPPING SYSTEM**” submitted by **SANDEEP KUMAR GUPTA, AMARPAL KUMAR JAISAWAL and AMAR KANT MAURYA** has been carried out under my guidance & supervision. The project report is approved for submission towards partial fulfillment of the requirement for the award of degree of **BACHELOR OF COMPUTER APPLICATION** i from **Institute of Professional Studies, UNIVERSITY OF ALLAHABAD.**

Mr. Pulak Chatteraj

Guide

Global Talent Track,Pune
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CCE ,Institute of Professional Studies
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CERTIFICATE

This is to certify that the Major Project report entitled “**ONLINE SHOPPING SYSTEM**” is submitted by **SANDEEP KUMAR GUPTA, AMARPAL KUMAR SHARMA and AMAR KANT MAURYA** for the partial fulfillment of the requirement for the award of degree of **BACHELOR OF COMPUTE R APPLICATION** from **INSTITUTE OF PROFESSIONAL STUDIES,UNIVERSITY OF ALLAHABAD.**

Internal Examiner

External Examiner

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Date :

Date :

DECLARATION

We hereby declare that the project entitled “**ONLINE SHOPPING SYSTEM**” which is being submitted in partial fulfillment of the requirement for award of the Degree of Bachelor of COMPUTER APPLICATION is an authentic record of our own work done under the guidance of **Mr. Mukesh Srivastava** and **Mr. Pulak Chattaraj**.

The matter reported in this Project has not been submitted earlier for the award of any other degree.

Online shopping system

Dated:18/05/2016

Sandeep Kumar Gupta

Place : Allahabad

13AU/85

ACKNOWLEDGEMENT

We sincerely express indebtedness to esteemed and revered guide “ Mr. Pulak Chatteraj ”Global Talent Track Pune,Maharashtra, for his invaluable guidance, supervision and encouragement throughout the work. Without his kind patronage and guidance the project would not have taken shape.

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like to express our sincere regards to him for advice and counseling from time to time.

Dated: 18-05-16

Place:Allahabad

Sandeep Kumar Gupta

13AU/85

Work Detail

Member	Module	Start date	End Date	Remark
Sandeep Kumar Gupta	Home, Add to Cart, Admin Panel, Help ,Contacts , Cancel Order.	07/04/2016	20/04/2016	
Amarpal Kumar Jaisawal	Login, Logout ,Delete Product, Update Users Profile, Add Product.	10/04/2016	19/04/2016	

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Amar Kant Maurya	Sign in, Faqs , Payment , Track order , Validate Users, Answers to query.	12/04/2016	21/04/2016	
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1. INTRODUCTION

This Project is web based shopping system for an existing shop.

This project objective is to deliver the online shopping application into android platform.

This project is an attempt to provide the advantage of online shopping to customers of a real shop. It helps the products in the shop anywhere through internet by using an android device. Thus the customers will get the service of online shopping and home delivery from his favourite shop. The system can be implemented to any shop in the locality or to multinational branded shops having retail chains.

It shops are providing an online portal where their customers can enjoy easy shopping from anywhere , the shops would not be losing any more customers to the trending online shops such as flipkart or e-bay. Since the application is available in the Smartphone it is easily accessible and always available.

2. About the PROJECT

Project Title: - Online Shopping System

The project is web based shopping system for an existing shop. The project objectives is to deliver the online shopping application into android platform.

Online shopping is the process whereby customers directly buy goods or services from seller in real time, without an intermediary service, over the internet. It is a form electric commerce . This project is attempt to provide the advantages of online shopping to customers.

2.1 PROJECT OBJECTIVE:

The users are divided into the following classes:

The objective of the project is to make an application in android platform to purchase items in an existing shop. In order to build such an application complete web support need to be provided. A complete and efficient web application which can provide the online shopping experience is the basic objective of the project. The web application can be implemented in the form of an android application with web view.

2.2 PROJECT OVER VIEW:

The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store. The information pertaining to the products are stores on an RDBMS at the server side (store). The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles. Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database. The application which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction. Data entry into the application can be done through various screens designed for various levels of users. Once the authorized personnel feed the relevant data into the system, several reports could be generated as per the security.

2.3 PROJECT SCOPE:

This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains. The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy. If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't be losing any more customers to the trending online shops such as flipcart or ebay. Since the application is available in the Smartphone it is easily accessible and always available.

2.4 STUDY OF THE SYSTEM

2.4.1 MODULES: The system after careful analysis has been identified to be presented with the following modules and roles. The modules involved are:

- Administrator
- Moderators
- Users

ADMINISTRATOR:

The administrator is the super user of this application. Only admin have access into this admin page. Admin may be the owner of the shop. The administrator has all the information about all the users and about all products. This module is divided into different sub-modules. 1. Manage Moderators 2. Manage Products 3. Manage Users 4. Manage Orders

2.4.2 MODELATORS:

Add Moderator:

Only admin is having the privilege to add a moderator. A moderator can be considered as a staff who manages the orders or owner of a group of products.

Block Moderator:

Admin can restrict a moderator from managing the orders by blocking them. Admin can unblock a blocked user if needed.

Remove Moderator:

Admin has privilege to delete a moderator who was added.

Search moderator:

All existing moderators can be viewed by the administrator as a list. If there is number of moderators and admin need to find one of them, the admin can search for a moderator by name.

MANAGE PRODUCTS:

Add Products:

The shopping cart project contains different kind of products. The products can be classified into different categories by name. Admin can add new products into the existing system with all its details including an image.

Delete Products Administrator can delete the products based on the stock of that particular product.

Search products:

Admin will have a list view of all the existing products. He can also search for a particular product by name.

MANAGE USER:

View Users:

The admin will have a list view of all the users registered in the system. Admin can view all the details of each user in the list except password.

Add Users Admin has privileges to add a user directly by providing the details.

Delete and Block Users:

Administrator has a right to delete or block a user. The default status of a new user registered is set as blocked. The admin must accept the new user by unblocking him.

MANAGE ORDERS:

View Order:

Administrator can view the Orders which is generated by the users. He can verify the details of the purchase.

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Delete order Admin can delete order from the orders list when the product is taken for delivery.

Registration:

A new user will have to register in the system by providing essential details in order to view the products in the system. The admin must accept a new user by unblocking him.

Login:

A user must login with his user name and password to the system after registration.

View Products:

User can view the list of products based on their names after successful login. A detailed description of a particular product with product name, products details, product image, price can be viewed by users.

Search Product:

Users can search for a particular product in the list by name.

Add to cart:

The user can add the desired product into his cart by clicking add to cart option on the product. He can view his cart by clicking on the cart button. All products added by cart can be viewed in the cart. User can remove an item from the cart by clicking remove.

Submit Cart:

After confirming the items in the cart the user can submit the cart by providing a delivery address. On successful submitting the cart will become empty.

History:

In the history the user will have a view of pending orders.

Edit Profile:

The user can view and edit the profile.

3. EVALUATION OF EXISTING SYSTEM

3.1 Existing System: -

The current system for shopping is to visit the shop manually and from the available product choose the item customer want and buying the item by payment of the price of the item .

1. It is less user-friendly.
2. User must go to shop and select products.
3. It is difficult to identify the required product.
4. Description of the product limited.
5. It is a time consuming process
6. Not in reach of distant users.

3.2. Limitations of the Existing System: -

The maintenance of various records and procedure of reporting are being done manually by the counseling department. This leads to many drawbacks some of which are:

- It is a time consuming process.
- Proper arrangements should be made before and after the examination -which is both money spending and time consuming.
- As the number of student's increases counseling process becomes more and more difficult.
- Not globally maintain the information
- Evaluating of answer sheets also consumes heavy amount of time.
- Difficult to management the all types of information of college or university
- Further more, manual evaluation is prone to errors.

4.PROPOSED SYSTEM

In the proposed system customer need not go to the shop for buying the products. He can order the product he wish to buy through the application in his Smartphone. The shop owner will be admin of the system. Shop owner can appoint moderators who will help owner in managing the customers and product orders. The system also recommends a home delivery system for the purchased products.

5. SCOPE OF THE PROJECT

This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains. The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy. If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't be losing any more customers to the trending online shops such as flipcart or ebay. Since the application is available in the Smartphone it is easily accessible and always available.

6. SYSTEM REQUIREMENT SPECIFICATION

6.1 GENERAL DESCRIPTION:

Product Description:

The system consists of two parts .A web application which can provide the online shopping service and an android application for the customer to access the web service from his Smartphone. Web application should be able to help the customer for selecting his item and to help the owner in managing the orders from the customers.

Problem Statement: As online shopping became a trend nowadays the regular shops are losing their customers to online brands. Customers have effortless shopping experience and saving time through shopping online. For competing with those online brands , If shops are providing an online portal where their customers can shop through internet and get the products at their doors it will increase the number of customers.

6.2 SYSTEM OBJECTIVES:

- To provide an android application for online shopping of products in an existing shop.
- To provide a online shopping web site for the same shop.

6.3 SYSTEM REQUIREMENTS

6.3.1 NON FUNCTIONAL REQUIREMENTS:

- **EFFICIENCY REQUIREMENT:**
When an online shopping cart android application implemented customer can purchase product in an efficient manner.
- **RELIABILITY REQUIREMENT:**
The system should provide a reliable environment to both customers and owner. All orders should be reaching at the admin without any errors.
- **USABILITY REQUIREMENT:**
The android application is designed for user friendly environment and ease of use.
- **IMPLEMENTATION REQUIREMENT:**
Implementation of the system using css and html in front end with jsp as back end and it will be used for database connectivity. And the database part is developed by mysql. Responsive web designing is used for making the website compatible for any type of screen.

6.3.2 FUNCTIONAL REQUIREMENTS

USER:

- MANAGE USER
- MANAGE MODERATOR
- MANAGE PRODUCTS
- MANAGE ORDERS

6.4 S/W and H/W Requirement Specification: -

Hardware Requirements: -

- Pentium IV 1.8 GHz and Above
- 128 MB DDRAM or More
- 40 GB HDD
- Printer
- Power Backup
- Internet Connection

Software Requirements:

- Windows 7 and upgraded versions
- J2EE (jsp, servlet)
- Oracle
- Java Script
- HTML
- IDE -My Eclipse 3.1.1

Introduction To Java: -

Java is a high level, third-generation programming language, like C, FORTRAN, Perl and many others. It is a platform for distributed computing – a development and run-time environment that contains built-in support for the World Wide Web.

History Of Java: -

Java development began at Sun Microsystems in 1991, the same year the World Wide Web was conceived. Java's creator, James Gosling did not design java for the Internet. His Objective was to create a common development environment for consumer electronic devices which was easily portable from one device to another. This effort evolved into a language, code named Oak and later renamed Java that retains much of the syntax and power of c++, but is simpler and more platforms independent.

Java Features: -

Some of the important features of Java are as follows: -

- Simplicity
- Object oriented
- Platform Independence
- Security
- Robust
- High Performance
- Multi Threading
- Dynamic linking.
- Garbage Collection.

One of the most important features of Java is Platform Independence which makes it famous and suitable language for World Wide Web.

Why Java Is Platform Independent?

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Java is Platform Independent because of Java Virtual Machine (JVM).

Java Virtual Machine (JVM):-

The client application or operating system must have a java byte-code interpreter to execute byte-code instructions. The interpreter is a part of a larger program called the JVM. The JVM interprets the byte code into native code and is available on platforms that support java.

When the user runs a Java program, it is unto the JVM to load, possibly verify, and then execute it. The JVM can perform this function from within a browser or any other container program or directly on top of the operating system.

When a browser invokes the JVM to run a Java program, the JVM does a number of things: -

1. It validates the requested byte-codes, verifying that they pass various formatting and security checks.

It allocates memory for the incoming java class files and guarantees that the security of JVM is not violated. This is known as the class loader.

2. It interprets the byte code instructions found in the class files to execute the program.

Servlets / JSP are middleware technologies which are used in web based projects because they use:-

1. HTTP Protocol to handle Request and Response.
2. They are invoked through Browser.
3. They give output in HTML format.
4. They need Browser Support.

We have designed web based forms using Servlets and JSP in which we have defined business logic.

About HTML: -

Hypertext Markup Language (HTML) is a language for describing how pages of text, graphics, and other information are organized. Hypertext means text stored in electronic form with cross-reference links between pages. An HTML page contains HTML tags, which are embedded commands that supply information about the page's structure, appearance, and contents. Web browsers use this information to determine how to display the page.

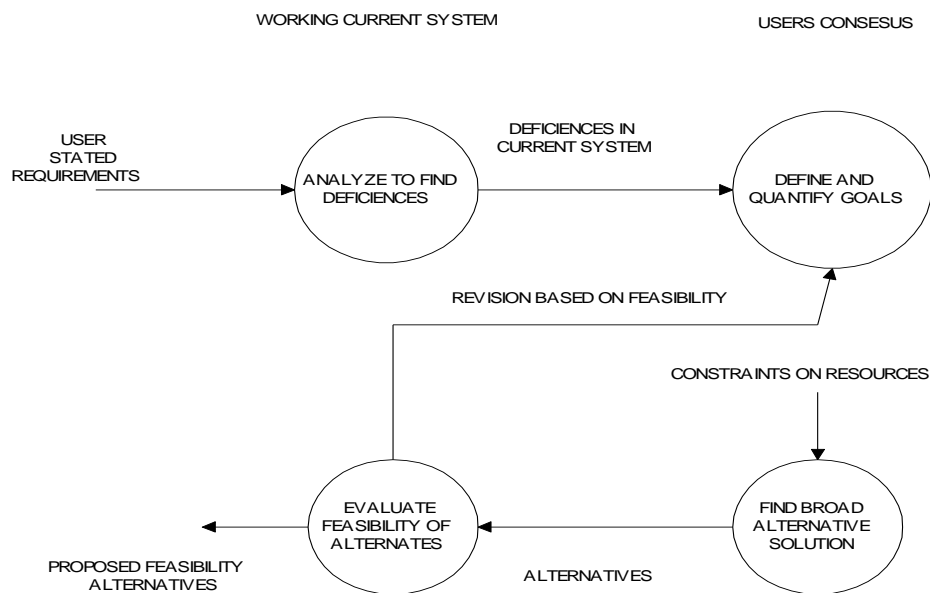
6.5 FEASIBILITY STUDY: -

Feasibility study is the process of determination of whether or not a project is worth doing. Feasibility studies are undertaken within tight time constraints and normally culminate in a written and oral feasibility report. I have taken two weeks in feasibility study with my co-developer. The contents and recommendations of this feasibility study helped us as a sound basis for deciding how to precede the project. It helped in taking decisions such as which software to use, hardware combinations, etc.

The following is the process diagram for feasibility analysis. In the diagram, the feasibility analysis starts with the user set of requirements. With this, the existing system is also observed. The next step is to check for the deficiencies in the existing system. By evaluating the above points a fresh idea is conceived to define and quantify the required goals. The user consent is very important for the new plan. Along with, for implementing the new system, the ability of the organization is also checked. Besides that, a set of alternatives and their feasibility is also

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considered in case of any failure in the proposed system. Thus, feasibility study is an important part in software development.



In the SDLC (Systems Development Life Cycle) of our project we maintained a number of feasibility checkpoints between the two phases of the SDLC.

These checkpoints indicate that the management decision to be made after a phase is complete. The feasibility checkpoints in our project were as follows:

- (i) Survey phase checkpoint
- (ii) Study phase checkpoint
- (iii) Selection phase checkpoint
- (iv) Acquisition phase checkpoint
- (v) Design phase checkpoint

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We together started measuring project feasibility, which lasted two week. During this period we have had consultation with our guide Mr. Ajay Kumar (project leader of Gnix Infosoft) and the management of the organization. In this course we conducted three tests for Project feasibility namely, **Technical, Economical, and Operational feasibilities**.

6.6 Technical Feasibility: -

Technical feasibility determines whether the work for the project can be done with the existing equipment, software technology and available personnel. Technical feasibility is concerned with specifying equipment and software that will satisfy the user requirement.

This project is feasible on technical remarks also, as the proposed system is more beneficiary in terms of having a sound proof system with new technical components installed on the system. The proposed system can run on any machines supporting **Windows** and **Internet** services and works on the best software and hardware that had been used while designing the system so it would be feasible in all technical terms of feasibility.

Technical Feasibility Addresses Three Major Issues: -

(a) Is the proposed Technology or Solution Practical?

The technologies used are matured enough so that they can be applied to our problems. The practicality of the solution we have developed is proved with the use of the technologies we have chosen. The technologies such as JAVA (JSP, Servlet), JavaScript and the compatible H/Ws are so familiar with the today's knowledge based industry that anyone can easily be compatible to the proposed environment.

(b) Do we currently posses the necessary technology?

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We first make sure that whether the required technologies are available to us or not. If they are available then we must ask if we have the capacity. For instance, “Will our current Printer be able to handle the new reports and forms required of a new system?”

(c) Do we possess the necessary Technical Expertise and is the Schedule reasonable?

This consideration of technical feasibility is often forgotten during feasibility analysis. We may have the technology, but that doesn't mean we have the skills required to properly apply that technology.

As far as our project is concerned we have the necessary expertise so that the proposed solution can be made feasible.

6.7.1 Economical Feasibility: -

Economical feasibility determines whether there are sufficient benefits in creating to make the cost acceptable, or is the cost of the system too high. As this signifies cost benefit analysis and savings. On the behalf of the cost-benefit analysis, the proposed system is feasible and is economical regarding its pre-assumed cost for making a system.

During the economical feasibility test we maintained the balance between the Operational and Economical feasibilities, as the two were conflicting. For example the solution that provides the best operational impact for the end-users may also be the most expensive and, therefore, the least economically feasible.

We classified the costs of Online Counseling according to the phase in which they occur. As we know that the system development costs are usually one-time costs that will not recur after the project has been completed. For calculating the Development costs we evaluated certain cost categories viz.

- (i) Personnel costs
- (ii) Computer usage
- (iii) Training
- (iv) Supply and equipments costs
- (v) Cost of any new computer equipments and software.

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In order to test whether the Proposed System is cost-effective or not we evaluated it through three techniques viz.

- **Payback analysis**
- **Return on Investment:**
- **Net Present value**

6.7.2 Operational Feasibility: -

Operational feasibility criteria measure the urgency of the problem (survey and study phases) or the acceptability of a solution (selection, acquisition and design phases). How do you measure operational feasibility? There are two aspects of operational feasibility to be considered:

(a) Is the problem worth solving or will the solution to the problem work?

There are certain measures, which decide, the effectiveness of the system. These measures can be collectively called as **PIECES**.

P (Performance): -

The online Counseling System provides adequate throughput and response time.

I (Information): -

The online Counseling System provides Student and Staff with timely, pertinent, accurate, and usefully formatted information.

E (Economy): -

The online Counseling System of reduce the cost of the Counseling or Student reporting (selection).

C (Control): -

The online Counseling System offer globally controls to protect against fraud and to guarantee the accuracy and security of the data and information.

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E (Efficiency): -

The online Counseling System makes maximum use of available resources and minimum processing delays.

S (Services): -

The online Counseling System provides desirable and reliable service to those who need it. The online Counseling System is flexible and expandable.

(b) How do the students and staff feel about the problem (Solution)?

It is not only important to evaluate whether a system can work. We must also evaluate whether a system will work. A workable solution might fail because of Students, Staff resistance.

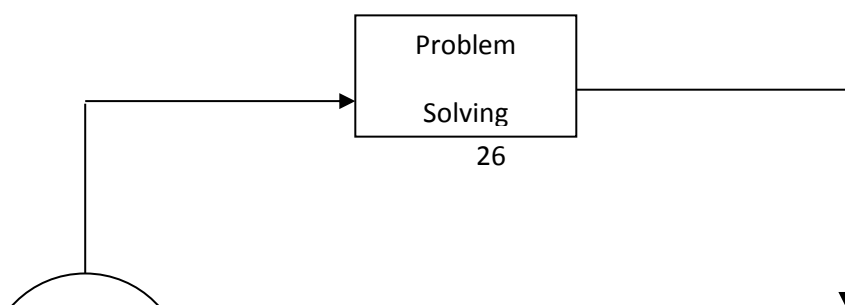
In case of our project Online Counseling System we have examined all the concerns that can further affect its operational feasibility. The following points will explore those concerns.

The Online Counseling System has complete support of the Student/Staff as an online reporting and access the information.

The Online Counseling System has made the role of Student easiest one. The Student /Staff feel comfortable and upgraded with this system.

6.8 Software Engineering Paradigm Applied: -

The development strategy that encompasses the process, methods, and tools and the generic phases is called Software Engineering Paradigm. The s/w paradigm for software is chosen based on the nature of the project and application, the method and tools to be used, and the controls and deliverables that are required. All software development can be characterized as a problem-solving loops (fig. 2) in which four distinct stages are encountered: - status quo, problem definition, technical development, and solution integration.

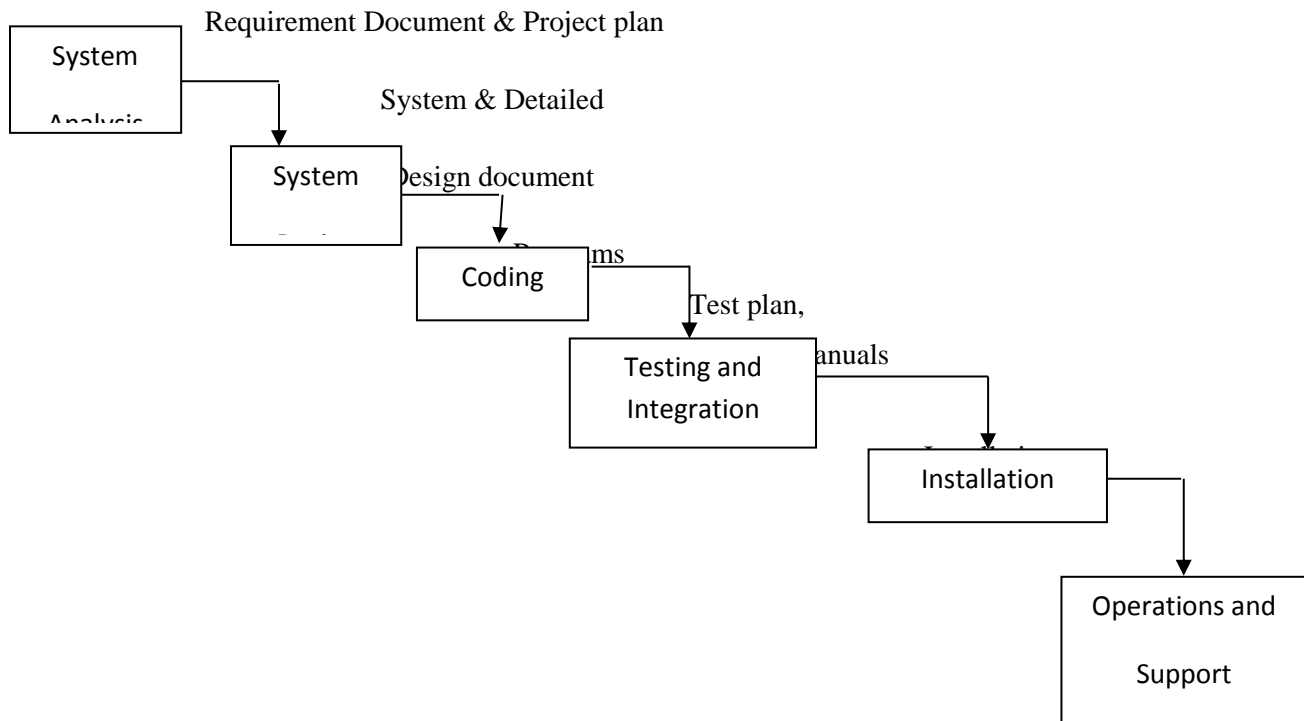


(Figure - 2) Problem Solving Loop

Status quo represents the current state of affairs, Problem definition identifies the specific problem to be solved, technical development solves the problem through the application of some technology, and solution integration delivers the results to those who requested the solution in the first place.

There are various software paradigms, but we used **Waterfall model** (the linear sequential model), which states that the phases are organized in a linear order. The Waterfall model suggests a systematic, sequential approach to s/w development that begins at the system level and progresses through analysis, design, coding, testing, and maintenance and support as shown in below fig.3.

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(Figure- 3) Waterfall model

The sequence of activities performed in a software development project with the Waterfall model is: system analysis, system design, coding, testing & integration, installation, and maintenance. For a successful project resulting in a successful product, all phases listed in the waterfall model must be performed. Any different ordering of the phases will result in a less successful software product.

There are a number of project outputs in waterfall model that is produced to produce a successful product:

- Requirement documents and project plan
- System and detailed design
- Programs (code)
- Test plan, test reports and manuals
- Installation reports

6.8.1 Limitations Of Waterfall Model: -

1. The waterfall model assumes that the requirements of a system can be baseline before the design begins. This is possible for system designed to automate an existing manual system. For our system, (Online Counseling System) this is a new system, determining the requirement is difficult, as the user does not even know the requirements.
2. Freezing the requirements usually requires choosing the hardware.
3. The waterfall model stipulates that the requirements be completely specified before the rest of the development can proceed.
4. It is a document driven process that requires formal documents at the end of each phase. This approach tends to make the process documentation-heavy and is not suitable for many applications (interactive applications).

The waterfall model is the most widely used process model.

7. SYSTEM DESIGN

7.1. Introduction: -

The objective of the system design is to deliver the requirements as specified in the feasibility report. System design involves first logical design (logical design) and then physical construction (detailed design) of the system. The logical design describes the structure and

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characteristics of features, such as the outputs, inputs, files, databases, and procedures. The physical construction produces actual program software, files, and a working system.

System design goes through two phases of development: -

1. Logical Design
2. Physical Design

Logical Design:-

We know that a data flow diagram shows the logical flow of a system and defines the boundaries of the system. Logical design specifies the user need at a level of details that virtually determine the information flow into and out of the system and the required data resources. Logical design describes the inputs, outputs, database and procedures .All in a format that meets the user's requirements.

Physical Design:-

It provides the working system by defining the design specification that tells programmers exactly what that candidate system must do. In short it can state that physical design is the implementation of the logical design.

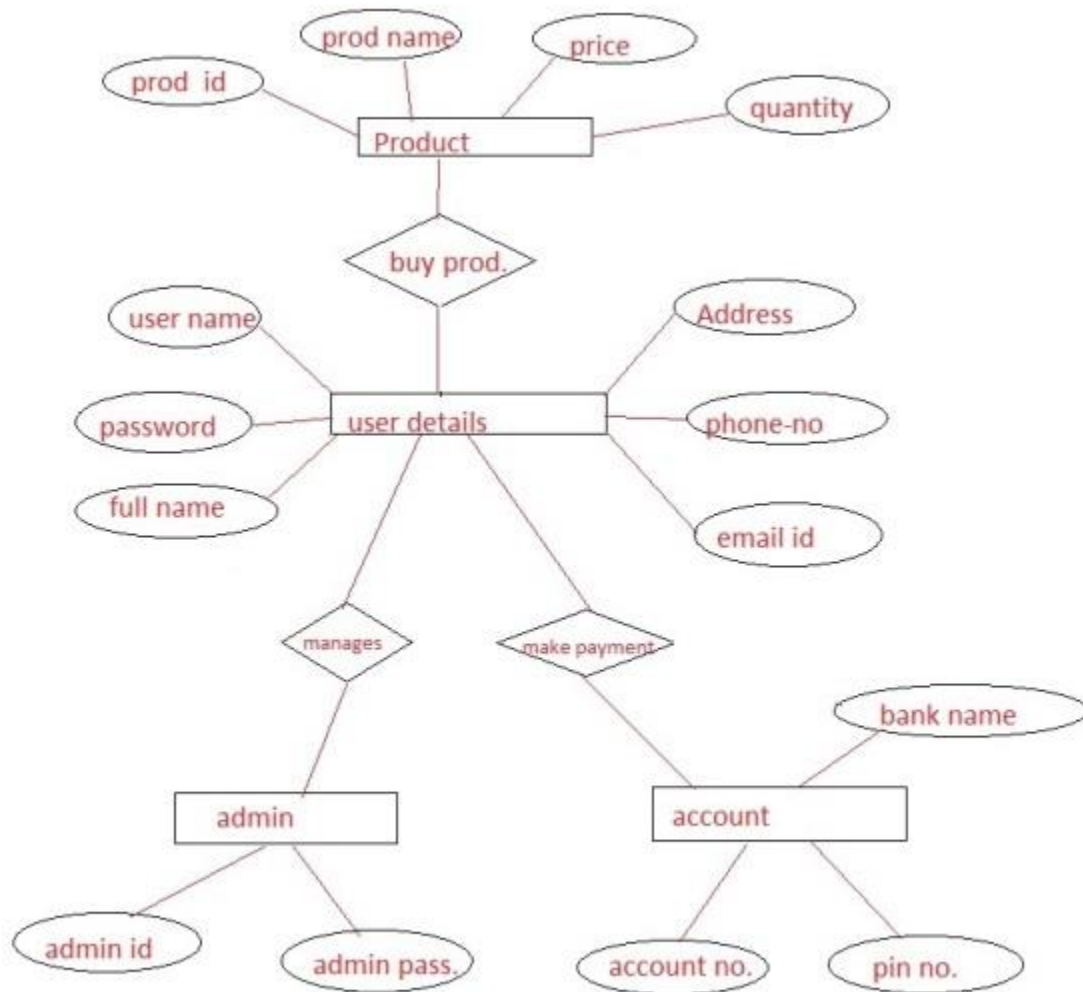
Physical system design consists of the following-

- 1) Design the physical system
 - i. Specify input, output media
 - ii. Design the database and specify backup procedures.
 - iii. Design physical information flow through the system and a physical design walkthrough.
- 2) Plan system implementation

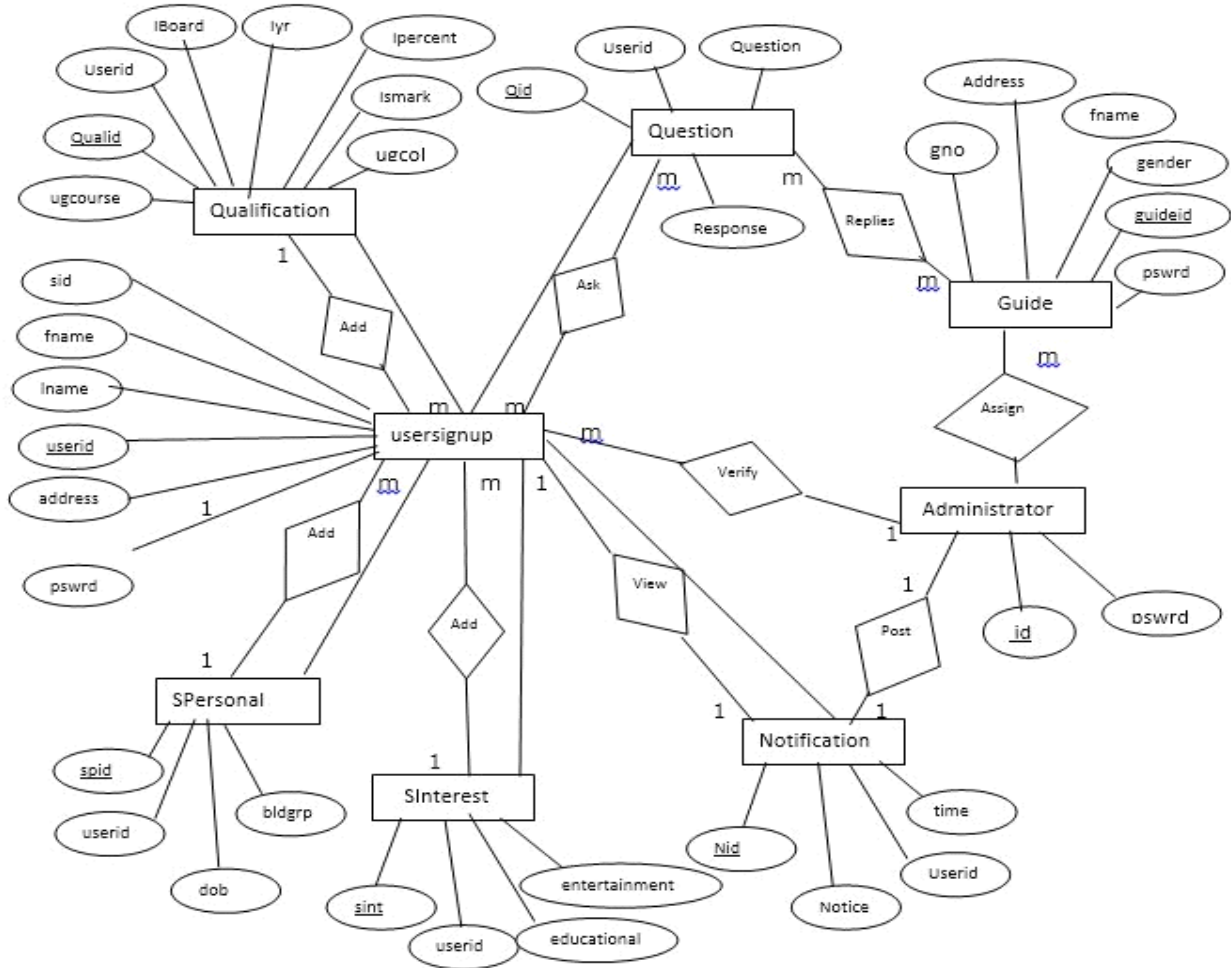
7.2 Entity-Relationship Diagram:-

E - R Diagram of Shopping System: -

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7.3 Database Design: -

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Usually, a collection of interrelated data is referring to as database. The database contains information about one particular enterprise. Database system is designed to shear and manage large volume of information .The management of data involves both the manipulation of information .In addition ,the database system must provide for safety information storage in the database ,despite system crashes or unauthorized access.

7.3.1 *usersignup*

Table Name	Sign		
Description	This table will contain the information of the users who will access the system.		
Primary Keys	Userid		
Foreign Keys			
Field Name	Data type	Constraints	Comments
sId	Int	PK	
Userid	varchar(50)	NN, UC	This id will be used to login into the system.
FirstName	varchar(50)	NN	
LastName	varchar(50)	NN	
Gender	Varchar(10)		User gender
Phone	varchar(15)		
Address	varchar(50)		
Password	Varchar(20)		

7.3.2 *Product:*

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Table Name	Product		
Description	This table will contain the information of the users who will access the system.		
Primary Keys			
Foreign Keys			
Field Name	Data type	Constraints	Comments
P_name	Int	PK	Guide number
P_Id	varchar(20)	NN	
P_price	Varchar(20)	NN	

7.3.3 Administrator

Table Name	Admin		
Description	This table contains the information about the administrator		
Primary Keys	Id		
Foreign Keys			
Field Name	Data type	Constraints	Comments
Id	Varchar(20)	PK	This id is used by administrator to use higher privileges
Password	Varchar(20)	NN	

7.3.4 Faqs

Table Name	Faqs
-------------------	-------------

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Description	This table contains information of the question raised and who raised it		
Primary Keys	Qid		
Foreign Keys	Userid		
Field Name	Data type	Constraints	Comments
U_id	Int	PK	Refers to the question number
E_mail	Varchar(50)	Fk	
Query	Varchar(100)		

7.3.5 mess

Table Name	Message		
Description	This table contains the information related to answer of the question		
Primary Keys	Rid		
Foreign Keys	Uid		
Field Name	Data type	Constraints	Comments
Dtae	Date	PK	
Q_id	Varchar	FK1	
U_id	Varchar	FK2	
message	Varchar(100)		

8. Input-Output Design: -

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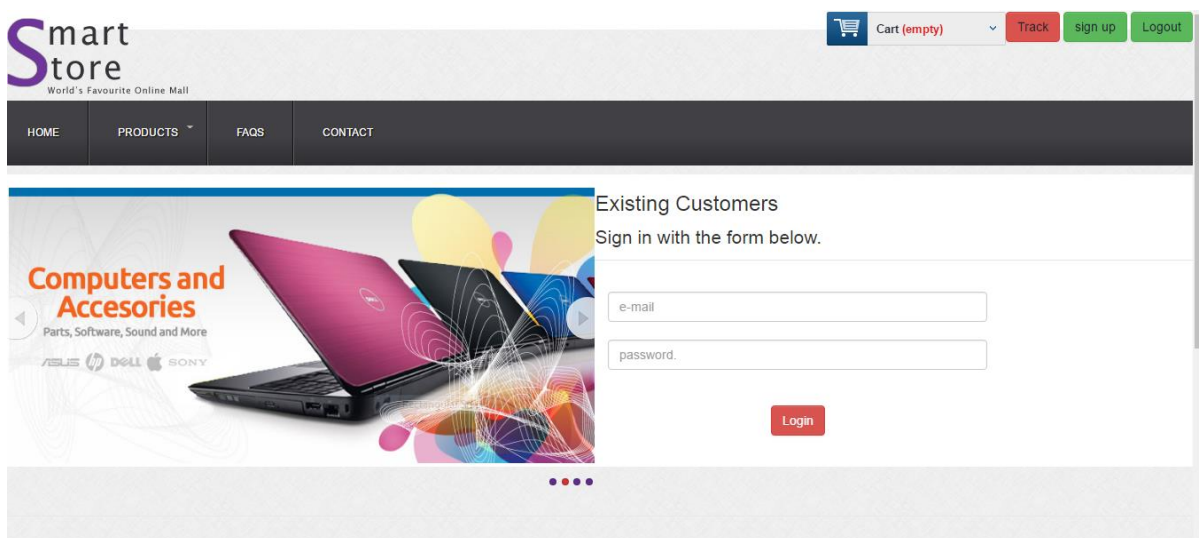
- **Input Design:** -

The input design is a crucial part of any system errors. Inaccurate input data are the most common cause of the errors in the processing. Data entry errors can be controlled by input design. Input design is the process of converting user-oriented inputs to computer –based formats .the goal of designing input data is to make data entry as easy, logical and free from errors as possible.

- **Output Design:** -

Computer output is the most important and direct source of information to the users. Efficient intelligible output design should improve the system’s relationship with the user and help in decision making. A major form of output is a hard copy from the printer. In the system under consideration, the output is in two forms, hard copy from the printer and output to the CRT screen in predefined format.


Home:




The screenshot shows the home page of 'Smart Store', described as 'World's Favourite Online Mall'. The top navigation bar includes links for HOME, PRODUCTS, FAQs, and CONTACT. On the right, there are links for Cart (empty), Track, sign up, and Logout. The main content area features a large banner for 'Computers and Accesories' (sic) with subtext 'Parts, Software, Sound and More' and logos for ASUS, DELL, and SONY. To the right of the banner, there is a section for 'Existing Customers' with the instruction 'Sign in with the form below.' and a login form with fields for 'e-mail' and 'password', and a 'Login' button.

Sign up:

Online shopping system



World's Favourite Online Mall

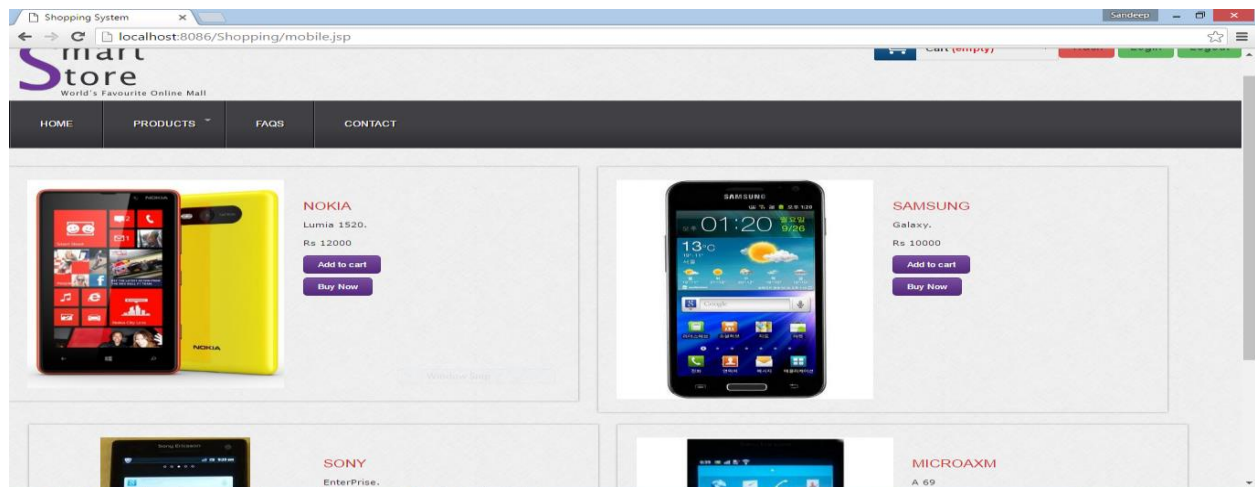
Cart (empty)

HOMEPRODUCTSSERVICESFAQSCONTACT

Register New Account


Select a Country

Products:



Cart:


Online shopping system



World's Favourite Online Mall

Cart (empty)TrackLoginLogout

HOMEPRODUCTSFAQSCONTACT

WELCOME PRADEEP KUMAR GUPTA

Items add to cart


Name	Number of Item	Price	Select
Micromax	1	8000	Delete
NokiaLumia	1	12000	Delete
Apple	1	80000	Delete
SamsungGalaxy	1	10000	Delete



Rectangular Snip

CONTINUE

Payment:

HOMEPRODUCTSFAQSCONTACT

WELCOME PRADEEP KUMAR GUPTA



Login Id

guptapradeep@gmail.com

Payment through Debit card

Rectangular Snip

Name on Card

Card Number

Card Expiry MM / YY

CCV

PAY AMOUNT

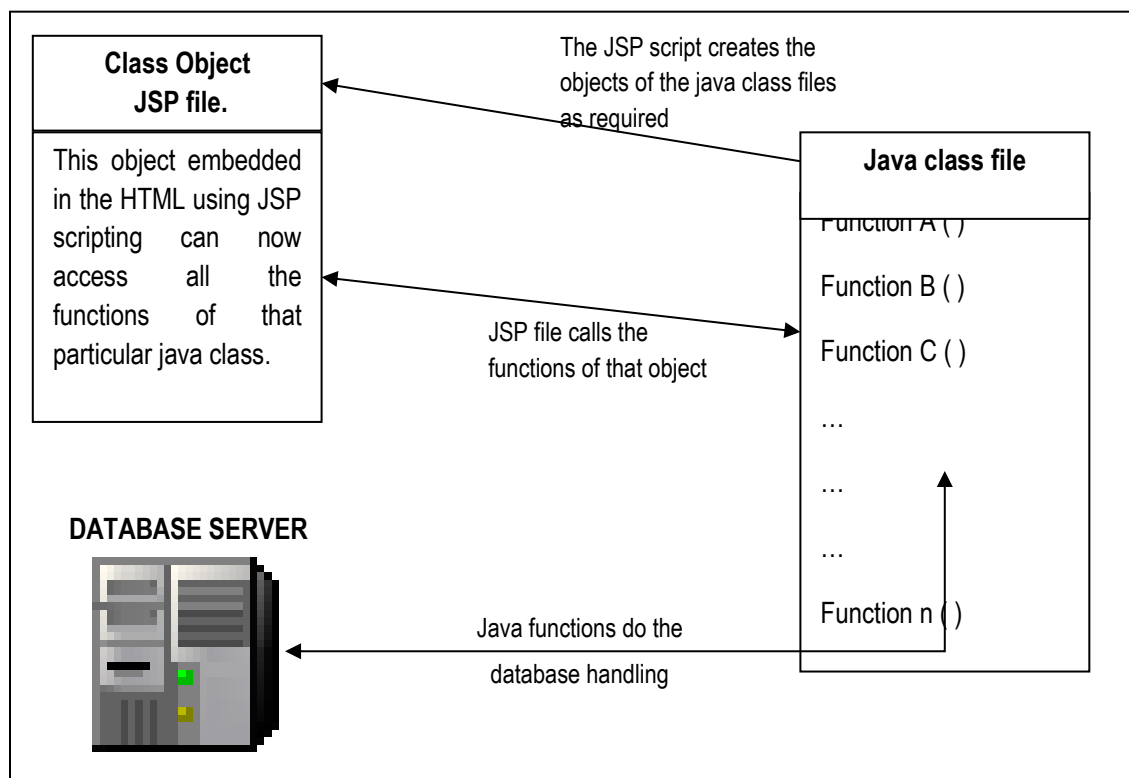
Make Payment

9. Code Design

Online shopping system

Code design for the system follows the following pattern. The java programs for the accessing the database server consists of functions that retrieve data and return that data in the required format. These java functions are put into classes. These classes are identified by the module which they service. The classes are all part of a package. This package is used in the JSP scripting to declare objects of a particular class. Once the objects have been declared, the functions of that object can be easily accessed by a normal “*objectName.functionName*” kind of call to it. The function performs the necessary tasks and then returns the data to the JSP script. The web server then processes these data and prepares an HTML file to be displayed to the user. This process is depicted in the figure.

Figure: - Code Design



SOURCE CODE:

Index.jsp:

```
<!DOCTYPE HTML>
<head>
<title>Shopping System</title>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">
```

Online shopping system

```
<link href="css/style.css" rel="stylesheet" type="text/css" media="all"/>
<link href="css/bootstrap-theme.min.css" rel="stylesheet" type="text/css"
media="all"/>
<link href="css/style.css" rel="stylesheet" type="text/css" media="all" />
<meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1">
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<link href="css/default.css" rel="stylesheet" type="text/css" media="all" />
<link href="css/nivo-slider.css" rel="stylesheet" type="text/css" media="all" />
<link href='http://fonts.googleapis.com/css?family=Open+Sans' rel='stylesheet'
type='text/css'>
<link href="css/bootstrap.min.css" rel="stylesheet" type="text/css" media="all" />

<link href="css/bootstrap.css" rel="stylesheet" type="text/css" media="all" />

<link href="css/menu.css" rel="stylesheet" type="text/css" media="all"/>
<script
src="http://ajax.googleapis.com/ajax/libs/jquery/1.4.2/jquery.min.js"></script>
<script src="js/script.js" type="text/javascript"></script>
<script type="text/javascript" src="js/jquery-1.7.2.min.js"></script>
<script type="text/javascript" src="js/nav.js"></script>
<script type="text/javascript" src="js/move-top.js"></script>
<script type="text/javascript" src="js/easing.js"></script>
<script type="text/javascript" src="js/nav-hover.js"></script>
<link href='http://fonts.googleapis.com/css?family=Monda' rel='stylesheet'
type='text/css'>
<link href='http://fonts.googleapis.com/css?family=Doppio+One' rel='stylesheet'
type='text/css'>
<script type="text/javascript">
    $(document).ready(function($){
        $('#dc_mega-menu-orange').dcMegaMenu({rowItems: '4', speed: 'fast', effect: 'fade'});
    });
</script>
</head>
<body>
<div>
    <center>
        <table border=0 color=black width=100% height=1% >
        <tr>
            <td>
                <center><font face="Time New Roman" color="green" size=10><u><i>ONLINE
SHOPPING SYSTEM</i></u></center></font>
            </td>
        </tr>
        </table>
    </center>
</div>
    <div class="header">
        <div class="header_top">
            <div class="Logo">
                <a href="#"></a>
            </div>
```


Online shopping system

```

                                <div style="float:right;">
    <form>
      <button type="submit" class="btn btn-danger "><a
href="track.jsp">Track</a></button>
      <button type="submit" class="btn btn-success "><a href="sign.jsp">sign
up</a></button>

      <button type="submit" class="btn btn-success "><a
href="Logout.jsp">Logout</a></button>
      <div class="shopping_cart">
        <div class="cart">

                                <strong class="opencart"> </strong>
                                <span class="cart_title"><a
href="cart.jsp">Cart</a></span>
                                <span
class="no_product">(empty)</span>
                                </a>
        </div>
      </div>
    </form>
  </div>

  <script type="text/javascript">
    function DropDown(e1) {
      this.dd = e1;
      this.initEvents();
    }
    DropDown.prototype = {
      initEvents : function() {
        var obj = this;

        obj.dd.on('click', function(event){
          $(this).toggleClass('active');
          event.stopPropagation();
        });
      }
    }

    $(function() {

      var dd = new DropDown( $('#language') );

      $(document).click(function() {
        // all dropdowns
        $('.wrapper-dropdown').removeClass('active');
      });

    });
  </script>
</div>
```

Online shopping system

```

        <script type="text/javascript">
function DropDown(e1) {
    this.dd = e1;
    this.initEvents();
}
DropDown.prototype = {
    initEvents : function() {
        var obj = this;

        obj.dd.on('click', function(event){
            $(this).toggleClass('active');
            event.stopPropagation();
        });
    }
}

$(function() {

    var dd = new DropDown( $('#currency') );

    $(document).click(function() {
        // all dropdowns
        $('.wrapper-dropdown').removeClass('active');
    });

});

</script>

</div>

        <div class="clear"></div>
    </div>
    <div class="clear"></div>
</div>
<div class="menu">
    <ul id="dc_mega-menu-orange" class="dc_mm-orange">
        <li><a href="#"><h6>Home</h6></a></li>
    <li><a href="#"><h6>Products</h6></a>
    <ul>
        <li><a href="mobile.jsp">Mobile Phones</a>

        </li>
        <li><a href="desktop.jsp">Laptop</a>

        </li>
        <li><a href="products.html">Desktop</a>

        </li>
        <li><a href="#">Accessories</a>

        </li>
        <li><a href="#">Software</a>

        </li>
    </ul>
    </li>
    </ul>
    </div>

```

Online shopping system

```
<li><a href="#">Sports & Fitness</a>

</li>
<li><a href="#">Footwear</a>

</li>
<li><a href="#">Jewellery</a>

</li>
<li><a href="#">Clothing</a>

</li>
<li><a href="#">Home Decor & Kitchen</a>

</li>
<li><a href="#">Beauty & Healthcare</a>

</li>
<li><a href="#">Toys, Kids & Babies</a>

</li>
</ul>
</li>

<li><a href="faqs.jsp"><h6>FAQS</h6></a></li>

<li><a href="contact.jsp"><h6>Contact</h6></a></li>

<%

if(session.getAttribute("name")!=null)
{
    %>

    <div style="float:right;"><li><a href="#"><h6>Welcome
<%=session.getAttribute("name")%></h6></a> </li></div>
    <div style="float:right;"><li><a href="profile.jsp"></a></li></div>

<%
}

%>
<div class="clear"></div>
</ul>
</div>

<div class="header_bottom_right_images">
<!-- FlexSlider -->
<section class="slider">
    <div class="flexslider">
        <ul class="slides">
            <li></li>
```

Online shopping system

```
alt=""/></li>
<li></li>
<li></li>
</ul>
</div>
</section>

</div>

<div class="content">

  <form action="welcome.jsp">
    <fieldset><legend><h3>Existing Customers</h3>
    <p>Sign in with the form below.</p></legend>
    <div class="col-md-9">
      <div class="form-group">
        <table border=4 color=black width=90% height=90% >
          <tr><td>
            <input type="text" name="t1" required="required"
class="form-control" placeholder="e-mail">

          </tr></td>
        </div>
        <div class="form-group">
          <tr><td>

            <br>
            <input type="password" name="t2" required="required"
class="form-control" placeholder="password.">

            <br>

            <br>
          </tr></td>

        </div>

        <div class="form-group">
          <tr><td>

            <center><button type="submit" name="Login" class="btn
btn-danger btn-md">Login</button></center>
          </tr></td>
        </table>
      </div>
    </div>
  </fieldset>
```

Online shopping system

```
</form>

</div>

<br>

</div>

        <div class="content_bottom">
<div class="heading">
<h3>New Products</h3>
</div>

        <div class="clear"></div>
</div>

        <div class="section_group">
            <div class="grid_1_of_4 images_1_of_4">
                <a href="preview-3.html"></a>

                <div class="discount">
                    <span class="percentage">40%</span>
                </div>
                <h2>Lorem Ipsum is simply </h2>
                <p><span class="strike">$438.99</span><span
class="price">$403.66</span></p>
                <div class="button"><span><a href="preview-3.html" class="cart-button">Add to Cart</a></span> </div>
                <div class="button"><span><a href="#"
class="details">Details</a></span></div>
            </div>
            <div class="grid_1_of_4 images_1_of_4">
                <a href="preview-4.html"></a>

                <div class="discount">
                    <span class="percentage">22%</span>
                </div>
                <h2>Lorem Ipsum is simply </h2>
                <p><span class="strike">$667.22</span><span
class="price">$621.75</span></p>
                <div class="button"><span><a href="preview-4.html" class="cart-button">Add to Cart</a></span></div>
                <div class="button"><span><a href="#"
class="details">Details</a></span></div>
            </div>
            <div class="grid_1_of_4 images_1_of_4">
                <a href="preview-2.html"></a>

                <div class="discount">
                    <span class="percentage">55%</span>
                </div>
```

Online shopping system

```
<h2>Lorem Ipsum is simply </h2>
<p><span class="strike">$457.22</span><span
class="price">$428.02</span></p>
<div class="button"><span><a href="preview-2.html" class="cart-button">Add to Cart</a></span> </div>
<div class="button"><span><a href="#"
class="details">Details</a></span></div>
</div>
<div class="grid_1_of_4 images_1_of_4">

<div class="discount">
<span class="percentage">66%</span>
</div>
<h2>Lorem Ipsum is simply </h2>

<p><span class="strike">$643.22</span><span
class="price">$457.88</span></p>
<div class="button"><span><a href="#" class="cart-button">Add to Cart</a></span> </div>
<div class="button"><span><a href="#"
class="details">Details</a></span></div>
</div>
</div>
</div>
</div>

<script type="text/javascript">
    $(document).ready(function() {
        /*
        var defaults = {
            containerID: 'toTop', // fading element id
            containerHoverID: 'toTopHover', // fading element hover id
            scrollSpeed: 1200,
            easingType: 'linear'
        };
        */

        $().UItoTop({ easingType: 'easeOutQuart' });

    });
</script>
<a href="#" id="toTop" style="display: block;"><span id="toTopHover"
style="opacity: 1;"></span></a>
<link href="css/flexslider.css" rel="stylesheet" type="text/css" />
<script defer
src="js/jquery.flexslider.js"></script>

<script type="text/javascript">
    $(function(){
        SyntaxHighlighter.all();
    });
    $(window).load(function(){
        $('flexslider').flexslider({
            animation: "slide",
            start: function(slider){
```

Online shopping system

```
$('#body').removeClass('loading');

    });
  });
</script>

</body>
</html>
```

Product.jsp:

```
<%@include file="Logo.jsp" %>
</div>
<div class="header_bottom">
  <div class="header_bottom">
    <div class="section_group">
      <div class="listview_1_of_2 images_1_of_2">
        <div class="listimg listimg_2_of_1">
          <a href="preview.html"> </a>
        </div>
        <%
String pid[]={"201","202","203","204"};
int price[]={12000,10000,6000,80000};
String name[]={"Dell","hp","Lenovo","Apple"};
%>
        <div class="text list_2_of_1">
          <h2>Dell</h2>
          <p>InterPrise</p>
          <p>Rs 12000</p>
          <div class="button"><span><a
href="preview.html">Buy Now</a></span></div>
          <div class="button"><span><a
href="ItemServlet?pid=<%=pid[0]%>&price=<%=price[0]%>&name=<%=name[0]%>">Add to
cart</a></span></div>
        </div>
      </div>
      <div class="listview_1_of_2 images_1_of_2">
        <div class="listimg listimg_2_of_1">
          <a href="preview-5.html"></a>
        </div>
        <div class="text list_2_of_1">
          <h2>hp</h2>
          <p>Pavalian</p>
          <p>Rs 10000</p>
          <div class="button"><span><a href="preview-
5.html">Buy Now</a></span></div>
          <div class="button"><span><a
href="ItemServlet?pid=<%=pid[1]%>&price=<%=price[1]%>&name=<%=name[1]%>">Add to
cart</a></span></div>
        </div>
```

Online shopping system

```

        </div>
    </div>
    <div class="section group">
        <div class="listview_1_of_2 images_1_of_2">
            <div class="listimg listimg_2_of_1">
                <a href="preview-3.html"> </a>
            </div>
            <div class="text list_2_of_1">
                <h2>Lenovo</h2>
                <p>K3 Note.</p>
                <p>Rs6000</p>
                <div class="button"><span><a href="preview-
3.html">Buy Now</a></span></div>
                <div class="button"><span><a
href="ItemServlet?pid=<%=pid[2]%>&price=<%=price[2]%>&name=<%=name[2]%>">Add to
cart</a></span></div>
            </div>
        </div>
        <div class="listview_1_of_2 images_1_of_2">
            <div class="listimg listimg_2_of_1">
                <a href="preview-6.html"></a>
            </div>
            <div class="text list_2_of_1">
                <h2>apple</h2>
                <p>A 654</p>
                <p>Rs 80000</p>
                <div class="button"><span><a href="preview-
6.html">Buy Now</a></span></div>
                <div class="button"><span><a
href="ItemServlet?pid=<%=pid[3]%>&price=<%=price[3]%>&name=<%=name[3]%>">Add to
cart</a></span></div>
            </div>
        </div>
    </div>
    <div class="clear"></div>
</div>

```

Login.jsp:

```

<div style="float:right;"><li><a href="#"><h6>Welcome
<%=session.getAttribute("name")%></h6></a> </li></div>
<%
response.sendRedirect("index.jsp");

```

%>

Logut.jsp:

<%

Online shopping system

```
session.invalidate();
```

```
response.sendRedirect("index.jsp");
%>
```

Track.jsp:

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
    "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%@include file="Logo.jsp"%>
<form>
<center><input type="text" name="t1" required placeholder="Enter The the Order_Id.">
<br><br>
<button type="submit" class="btn btn-success "><a href="check.jsp">Check</a></button>
</center>
</form>
</body>
</html>
```

Profile.jsp:

```
<%@include file="Logo.jsp"%>

<%@ page import="java.sql.*"%>

<%
try
{
    String email=(String)session.getAttribute("email");

    String password=(String)session.getAttribute("password");
    Class.forName("oracle.jdbc.driver.OracleDriver");
    Connection
    cn=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","system
    ");
    Statement st=cn.createStatement();
    String str="select *from login where EMAIL='"+session.getAttribute("email")+"'";
    ResultSet rst=st.executeQuery(str);
%>
<table class="table">
    <caption><center><h3>Details of Logged In User</h3></center></caption>

    <thead>
```

Online shopping system

```
<tr>
<th>Name</th>
<th>Company</th>
<th>Email</th>
<th>Password</th>
<th>Address</th>
<th>City</th>
<th>Country</th>
<th>code</th>
<th>Mob</th>
</tr>
</thead>
<tbody>

<%
while(rst.next())
{
    %>

        <tr>

            <td><%=rst.getString(1)%></td>
            <td><%=rst.getString(2)%></td>
            <td><%=rst.getString(3)%></td>
            <td><%=rst.getString(4)%></td>
            <td><%=rst.getString(5)%></td>
            <td><%=rst.getString(6)%></td>
            <td><%=rst.getString(7)%></td>
            <td><%=rst.getString(8)%></td>
            <td><%=rst.getString(9)%></td>
            </tr>

        <%

    }
    %>
</tbody>
</table>
```

```
<%  
}  
catch(Exception ex)  
{
```

Online shopping system

```
        out.println(ex);
    }
%>
```

Payment.jsp:

```
<%@include file="Logo.jsp" %>
<table class="table" height="50%" width="50%" border="4">
<tr>
<td>item</td>
<td>Name</td>
<td>Number of item</td>
<td>Price</td>
</tr>
<%
if(request.getParameter("t1").equals("101"))
{
    %>
<tr>
<td></td>
<td>Nokia Lumia 1520</td>
<td>1</td>
<td>12000</td>
</tr>

<%
String price;

}

else
{
    %>
<tr>
<td></td>
<td>samsung galaxy</td>
<td>1</td>
<td>12000</td>
</tr>
<%
}
%>
</table>

<h2>Select the mode of Payment</h2>
```

Online shopping system

```
<table class="table" height="50%" width="50%" border="4">
<tr><td><a href="pay.jsp">Debit Card</a></td></tr>
<tr><td>Credit Card</td></tr>
<tr><td>Wallet</td></tr>

</table>
```

Cart.jsp:

```
<%@include file="Logo.jsp"%>

<%@ page import="java.sql.*"%>

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

<%
try
{
Class.forName("oracle.jdbc.driver.OracleDriver");
Connection
cn=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","system
");
Statement st=cn.createStatement();
String str="select *from mobile where EMAIL='"+session.getAttribute("email")+"'";
ResultSet rst=st.executeQuery(str);
%>
<table class="table">
    <caption><center><h2>Items add to cart</h2></center></caption>

        <thead>

<tr>
<th>Name</th>
<th>Number of Item</th>
<th>Price</th>
<th>Select</th>
</tr>
</thead>
<tbody>

<%
```

Online shopping system

```
while(rst.next())
{
    String pid;
    %>

    <tr>
    <td><%=rst.getString(1)%></td>

    <td>1</td>
    <td><%=rst.getString(3)%></td>
    <td><div class="button"><span><a
href="delete?pid=<%=rst.getString(2)%>">Delete</a></span></div>
    </td>

    </tr>

    <%

}
%>
</tbody>
</table>
<%
}
catch(Exception ex)
{

    out.println(ex);
}
%>
<center>
    <form action="pay.jsp">

        <button type="submit" class="btn btn-
success">CONTINUE</button>

    </form>
</center>
```

ItemServlet.java

```
package controller;

import java.io.*;
import java.util.*;
import javax.servlet.*;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
```

Online shopping system

```
import java.sql.*;

@WebServlet("/ItemServlet")
public class ItemServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter out=response.getWriter();
        String pid=request.getParameter("pid");
        String price=request.getParameter("price");
        String name=request.getParameter("name");

        HttpSession session=request.getSession();

        try

        {

            Class.forName("oracle.jdbc.driver.OracleDriver");
            Connection
cn=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system",
"system");

            Statement st=cn.createStatement();
            String str="insert into mobile
values('"+request.getParameter("name")+"', '"+request.getParameter("pid")+"', '"+
+request.getParameter("price")+"', '"+session.getAttribute("email")+"')";
            st.executeUpdate(str);
        }
        catch(Exception ex)
        {

            out.println(ex);
        }
        if(pid.equals("201") || pid.equals("202") ||
pid.equals("203") || pid.equals("204") )

        response.sendRedirect("desktop.jsp");
        else
            response.sendRedirect("mobile.jsp");

    }
}
```

}

10. TESTING

10.1 System Testing: -

Prior to the actual implementation of the system it had to be tested comprehensively and every possible error uncovered. Since it is not possible to test the system exhaustively, the black box testing method was used for system testing. The black box testing usually demonstrates that software functions are operational; that the input is properly accepted and the output is correctly produced; and that integrity of external information (databases) is maintained.

Table 10.1 outlines the tests that were performed on the system to ensure correctness and unearth errors which were subsequently debugged.

Table 10.1:- Tests Conducted on the System: -

Testing Phase	Objectives
Unit Testing	The various functions within each program and the program blocks are tested for proper working.
Module Testing	A module is composed of various programs related to that module. Module testing is done to check the module functionality and interaction between units within a module
Integration Testing	Integration testing is done to test the functionality and interfacing between the modules.

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Acceptance Testing	Acceptance testing is done after implementation to check if the system runs successfully in the customer environment/site.
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10.2 Unit Testing: -

Unit Testing will be done to test field validations, navigation, functionality of the programs and its blocks. These tests are applied on various functions within each program and other critical program blocks. Table 10.2 and 10.3 outline two sample test cases for Unit Testing performed on the system

Table 10.2:- Unit Testing – Test Case 1: -

Test Case Description

This test case deals with the creation of Student information. The creation program takes many inputs. The test should check for proper inputs and verify whether the creation function is called properly with the correct input parameters.

Expected Inputs

Student personnel and educational details for the detailed query solution. It will take many inputs from the user storing it in database as record.

Expected Outputs

Alert window for erroneous inputs and redirect it to the input page.
Confirmation of storing Student details once get completed.

Actual Test Results

An alert window was shown whenever the user gave some erroneous data, such as entering numbers in the name field, entering characters in numeric fields.
Confirmation of Insertion of details was displayed on submission to the add function, implying that the function was called properly.

10.3 Module Testing: -

Module testing will be done to test the interaction between the various programs within one module. It checks the functionality of each program with relation to other programs within the same module. It then tests the overall functionality of each module. Table 10.4 and 10.5 outline two sample test case for Module Testing performed on the system.

Table 10.3:- Module Testing – Test Case 1: -

<u>Test Case Description</u>
This test case deals with the module creation in the Counseling module.
<u>Expected Inputs</u>
Student performs asking query to the guide and puts an education related query.
<u>Expected Outputs</u>
The guide looks for the question and details of the person who posted the query.
<u>Actual Test Results</u>
The guide will provide a suitable suggestion/solution to the query of person.

Table 10.5:- Module Testing – Test Case 2: -

<p><u>Test Case Description</u></p> <p>This test case deals with the verification performed by the administrator.</p> <p><u>Expected Inputs</u></p> <p>The student and the guide persons will enter required inputs and fill the form.</p> <p><u>Expected Outputs</u></p> <p>The administrator on looking the informations entered by the student or guide Verifies.</p> <p><u>Actual Test Results</u></p> <p>As the student or the guide gets approval or gets verified , he can log-in and proceed to perform their individual tasks.</p>

10.4 Integration Testing: -

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Integration testing is done to test the functionality and interfacing between the modules. The system is built up of various modules which work together to automate the activities. These modules should work together in a seamless way to achieve the desired results. Integration testing will test for this property of the modules. The modules display a cause and effect relationship, if data in one module is changed, then it affects the data to change in some other module also. Integration testing needs to check if the modifications do not adversely affect some other modules.

Table 10.6:- Integration Testing – Test Case 1: -

<u>Test Case Description</u>
This test case deals with the ask question module.
<u>Expected Inputs</u>
Student educational related query
<u>Expected Outputs</u>
The question is posted to the guide to give the appropriate solution.
<u>Actual Test Results</u>
Once the query is posted and the guide on seeing the details in the module, and the question provides the solution..

10.5 Acceptance Testing: -

Acceptance testing was done after the implementation of the system. The acceptance testing will check if the system works correctly in the user environment and if all the user specified functionalities are present. It also tests if the system adheres to the company policies and quality standard. The Global Counseling system was tested and accepted by Global talent track after the acceptance testing.

11. IMPLEMENTATION AND MAINTENANCE

11.1 Implementation:-

Implementation uses the design document to produce code. Demonstration that the program satisfies its specifications validates the code. Typically, sample runs of the program demonstrating the behavior for expected data values and boundary values are required. Small programs are written using the model: -

Write/Compile/ Test

It may take several iterations of the model to produce a working program. As programs get more complicated, testing and debugging alone may not be enough to produce reliable code. Instead, we have to write programs in a manner that will help insure that errors are caught or avoided.

Top-Down Implementation: -

Top down implementation begins with the user-invoked module and works toward the modules that do not call any other modules. The implementation may precede depth-first or breadth-first.

Bottom-Up Implementation: -

Implementation begins with modules that do not call any other modules and works toward the main program. Test harness (see below) is used to test individual modules. The main module constitutes the final test harness.

Stub Programming: -

Stub programming is the implementation analogue of top-down and stepwise refinement. It supports incremental program development by allowing for error and improvement. A stub program is a stripped-down, skeleton version of a final program. It doesn't implement details of the algorithm or fulfill all the job requirements. However, it does contain rough versions of all subprograms and their parameter lists. Furthermore, it can be compiled and run. Extensive use of procedures and parameter are the difference between stub programs and

prototypes. Quick and dirty prototypes should be improved--they should be rewritten. A stub program helps demonstrate that a program's structure is plausible. Its procedures and functions are unsophisticated versions of their final forms, but they allow limited use of the entire program. In particular, it may work for a limited data set. Often the high-level procedures are ready to call lower-level code, even if the more detailed subprograms haven't even been written. Such sections of code are commented out. The comment brackets can be moved, call-by-call, as the underlying procedures are actually written.

Incremental Program Development: -

As program become more complex, changes have a tendency to introduce unexpected effects. Incremental programming tries to isolate the effects of changes. We add new features in preference to adding new functions, and add new function rather than writing new programs. The program implementation model becomes:

- Define types/compile/fix;
- Add load and dump functions/compile/test;
- Add first processing function/compile/test/fix;
- Add features/compile/test/fix;
- Add second processing function/compile/test/fix;
- Keep adding features/and compiling/and testing/ and fixing.

11.2 Maintenance: -

Once the software is delivered and deployed, then maintenance phase starts. Software requires maintenance because there are some residual errors remaining in the system that must be removed as they discovered. Maintenance involves understanding the existing software (code and related documents), understanding the effect of change, making the changes, testing the new changes, and retesting the old parts that were not changed. The complexity of the maintenance task makes maintenance the most costly activity in the life of software product.

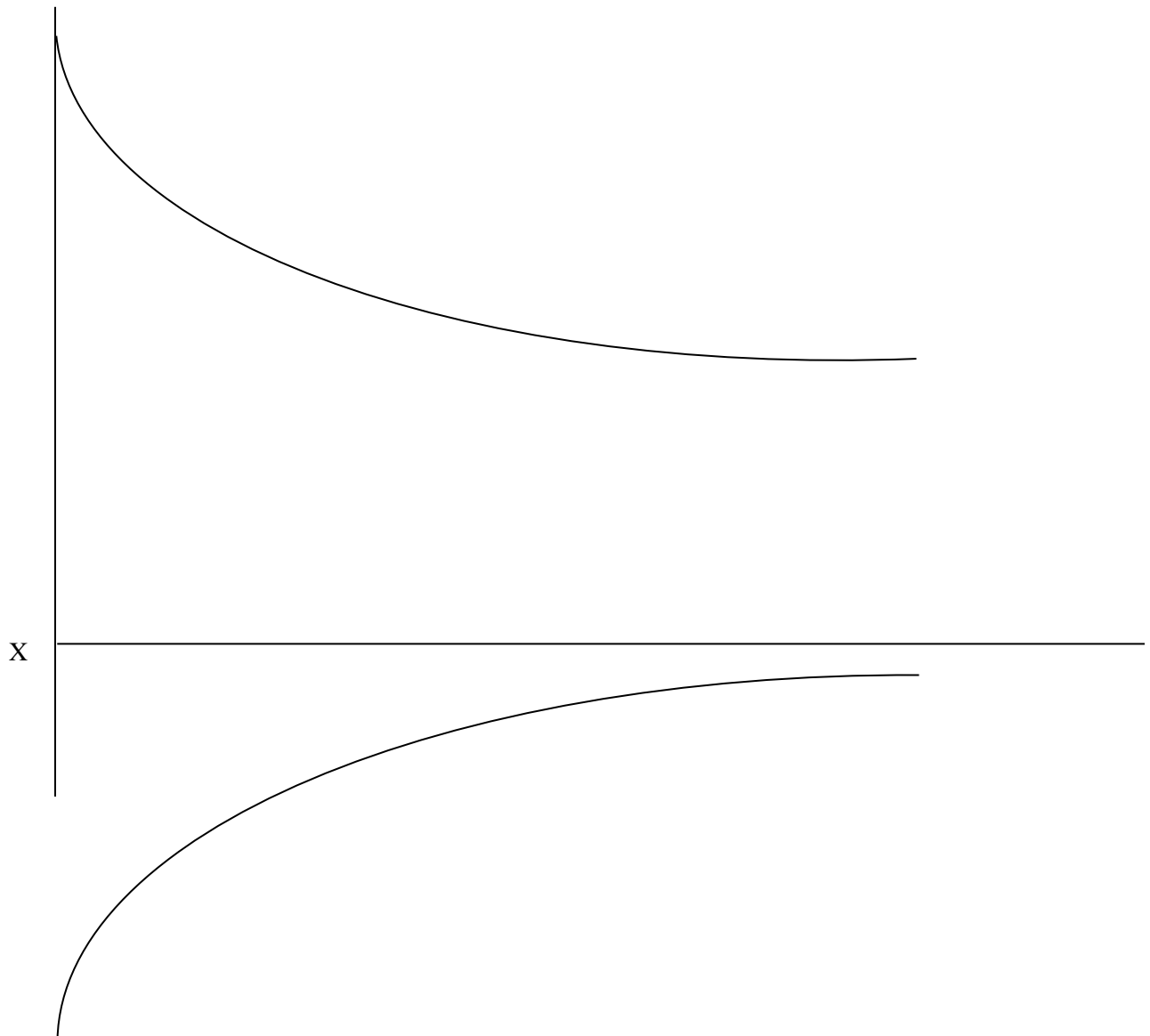
It is believed that almost all software that is developed has residual errors, or bugs, in them. These errors need to be removed when discovered that leads to the software change. This is called Corrective Maintenance. Corrective maintenance means repairing, processing or performance failures or making alterations because of previously ill-defined problems.

Software undergoes change frequently even without bugs because the software must be upgraded and enhanced to include more features and provide more services. This also requires modification of the software. The changed software changes the environment, which in turn requires further change. This phenomenon is called the “*law of software evaluation*”. Maintenance due to this phenomenon is called *adaptive maintenance*. Adaptive maintenance means changing the program function. Perfect maintenance means enhancing the performance or modifying the programs according to the user’s additional or changing needs. The keys to reduce the need for maintenance are:

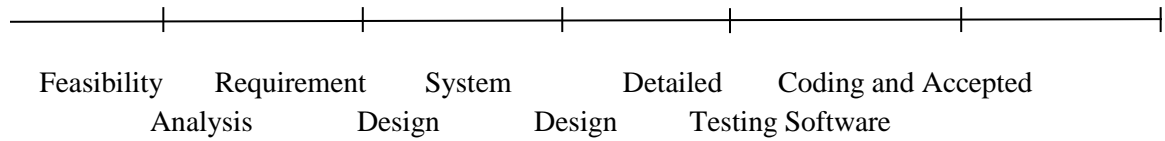
1. More accurately defining the user’s requirement during system development.
2. Preparation of system documentation in a better way.
3. Using more effective ways for designing processing logic and communicating it to project team members.
4. Making better use of existing tools and techniques.
5. Managing the system engineering process effectively.

11.3 COST ESTIMATION OF THE PROJECT: -

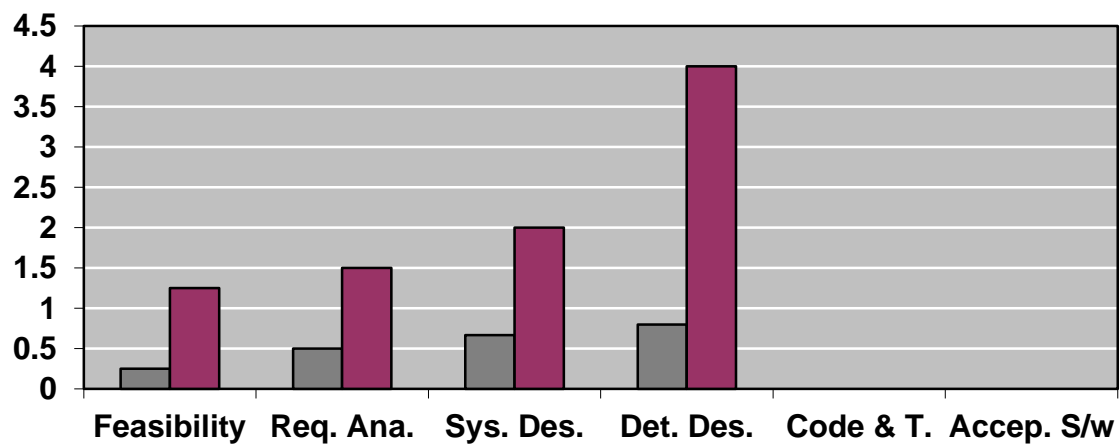
The objective of the cost estimation is to enable the client or developer to perform a cost-benefit analysis and for project monitoring and control. The accuracy of the estimate depends on the amount of reliable information about the final product. When the product is delivered, the cost can be accurately determined, as all the data about the project and the resource spent can be fully known by then. The obtainable accuracy of the estimates as it varies with the different phases is shown in below figure: -



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(Figure – Accuracy of cost estimation)



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(Figure – Graph of Accuracy of Cost Estimation)

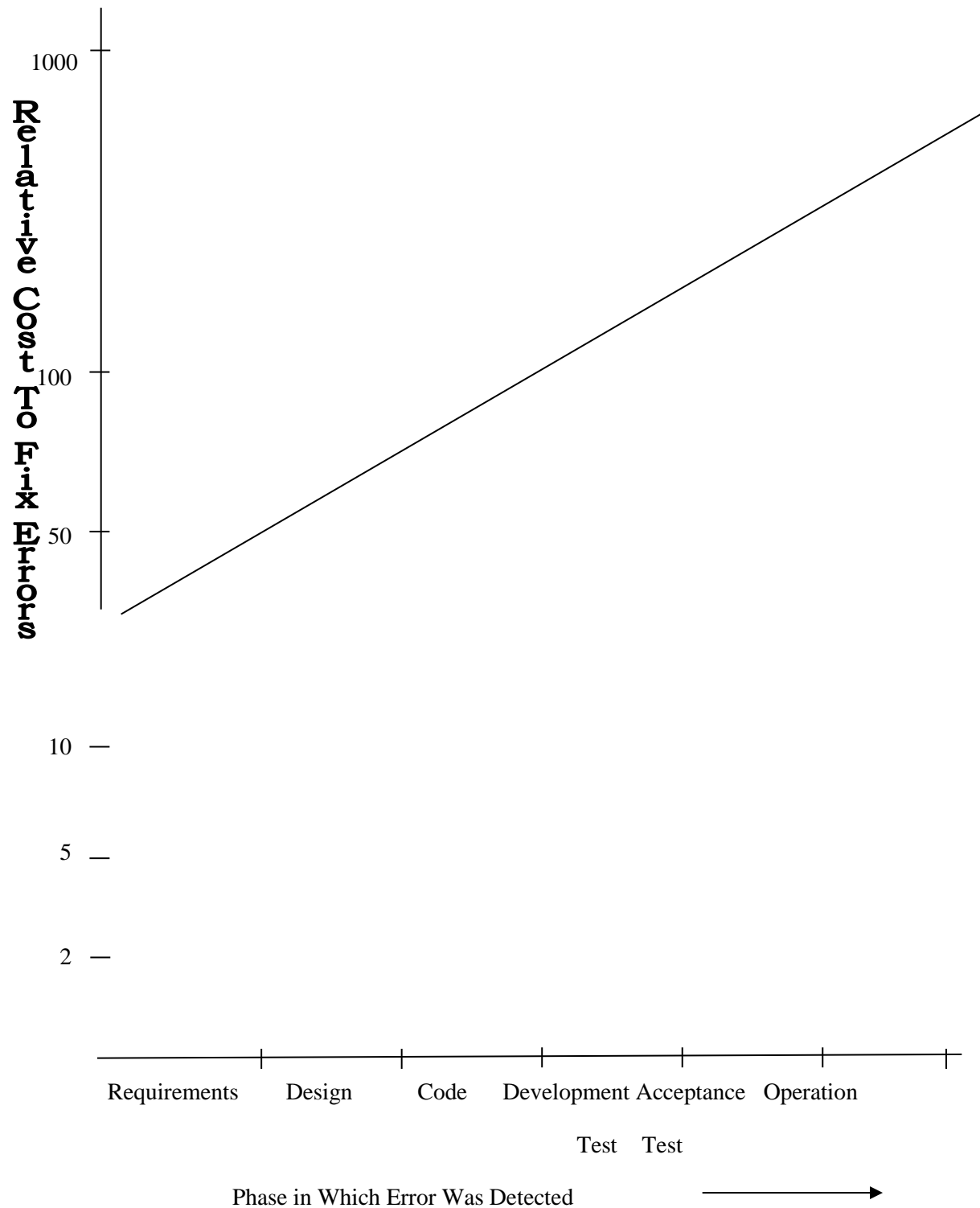
Cost Of Correcting Errors: -

According to the established S/W Engineering standard of estimating the cost of correcting errors the phase wise distribution of occurrences of errors is as given below: -

Requirement Analysis	20%
Design	30%
Coding	50%

The cost of correcting errors of different phases is not the same and depends on when the error is detected and corrected. The relative cost of correcting requirement errors as a function of where they are detected is shown below figure-.

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(Figure - 10) Cost of correcting errors

One can perform cost estimation at any point in the software life cycle. As the cost of the project depends on the nature and characteristics of the project, at any point, the accuracy of the estimate will depend on the amount of reliable information we have about the final product. The figure depicted below shows the accuracy of the cost estimation.

On Size estimation of Schedule and Cost of the Project: this approach implies that size is the primary factor for cost; other factors have lesser effect. Here we will discuss one such model called the Constructive Cost Model (COCOMO) developed by Boehm. This model also estimates the total effort in terms of person-months of the technical project staff. The basic steps of this model are as follows: -

- ♦ Obtain the initial estimate of the development effort from the estimate of thousands of delivered lines of source code (KDLOC).
- ♦ Determine a set of multiplying factors from different attributes of the project.
- ♦ Adjust the effort estimate by multiplying the initial estimate with all the multiplying factors.

The initial estimate also called nominal estimate is determined by an equation of the form used in the static single-variable models, using KDLOC as the measure of size. To determine the initial effort E_i in person-months the equation used is of the type

$$E_i = a * (KDLOC)^b$$

In COCOMO model the values of constants a and b are different with different type of projects. As our project is Organic type the values of a and b are 3.2 and 1.05 respectively. The total thousand delivered code (KDLOC) of our system has been estimated as around 2.

In order to determine the multiplying factors commonly known as cost driver attributes we have taken rating of these attributes according to our requirements. From these, the effort adjustment factor (EAF) of our project has been estimated as 1.16.

Now the final efforts estimate, E , of our project is obtained by multiplying the initial estimate by the EAF.

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i.e., $E = EAF * Ei$

The project duration is estimated for an Organic project by the formula

$D = 2.5 * E^{0.38}$ and according to this formula I have estimated the project duration 6 months.

12. CONCLUSIONS

This was the first considerably large and important project undertaken by me during my BCA course. It was an experience that changed the way I perceived project development. The coding could not be started before the whole system was completely finalized. Even then there were so many changes required and the coding needed to be changed. I attribute this to inadequate information gathering from the user. Though there were many meetings with the user and most of the requirements were gathered, a few misinterpretations of the requirements still crept in. It made me realize how important the systems analysis phase is. The project is a classic example for the adage that learning of concepts needs to be supplemented with application of that knowledge.

On the whole it was a wonderful experience developing this project and I would have considered my education incomplete without undertaking such a project which allowed me to apply all that I have learnt.

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2. <http://www.aw.com/cseng/>
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