

ONLINE_SHOPPING-CART

Report of Major Project Submitted For Partial Fulfillment of The Requirement For The Degree Of Master In Computer Application.

KHOOSBU KUMARI DUBEY

Registration Number:151170510020 of 2015-2016

University Roll Number:11701015020

SWETA JAISWAL

Registration Number:151170510053 of 2015-2016

University Roll Number:11701015052

Under The Supervision of

MR. BISWANATH CHAKRABORTY

Asst. Professor

of RCC Institute of Information Technology



RCC INSTITUTE OF INFORMATION TECHNOLOGY Affiliated To
Maulana Abul Kalam Azad University of Technology
Canal South Road, Beliaghata, Kolkata-700015

RCC INSTITUTE OF INFORMATION TECHNOLOGY



Certificate

The report of the Project titled **ONLINE_SHOPPING-CART** submitted by **Khoosbu Kumari Dubey**, Roll No.MCA2015/039; **Sweta Jaiswal**, Roll No.MCA2015/058 of MCA 5th Semester of 3rd year has been prepared under my supervision for the partial fulfillment of the requirements for MCA degree in Maulana Abul Kalam Azad University of Technology. The report is here by forwarded.

Mr. BISWANATH CHAKRABORTY
Asst. Professor of
RCC Institute of Information Technology
Beliaghata,
Kolkata -700015

HOD of CA Department
RCC Institute of Information Technology
Beliaghata

ACKNOWLEDGEMENT

We express our sincere gratitude to our teacher Mr. Biswanath Chakraborty, Asst. Professor of Department of Computer Application, RCC Institute of Information Technology and for extending his valuable times for us to take up this problem as a Project.

We are also indebted to the other teachers for their unconditional help and inspiration.

(Signature of the Student)

Reg. No.:

Roll No.:

Semester: 6th

Year: 3rd

Session: 2015-2016, RCCIIT

(Signature of the Student)

Reg. No.:

Roll No.:

Semester: 6th

Year: 3rd

Session: 2015-2016, RCCIIT

RCC INSTITUTE OF INFORMATION TECHNOLOGY



CERTIFICATE OF ACCEPTANCE

The report of the Project titled **ONLINE SHOPPING-CART** submitted by **Khoosboo Kumari Dubey**, Roll No.:', **Sweta Jaiswal**, Roll No.:', of MCA 5th Semester of 3rd year is hereby recommended to be accepted for the partial fulfilment of the requirements for MCA degree in Maulana Kalam Azad University of Technology.

Name of the Examiner(s)

Signature with date

TABLE OF CONTENT

TOPIC

- 1.Introduction
- 2.Previous Work
- 3.Problem Discussion
- 4.Problem Analysis
- 5.Review of Literature
- 6.Formulation(ERD,DFD)
- 7.Hardware & Software Specification
- 8.Implementation Details
- 9.System Requirements & Specification
- 10.Snapshots(Sample Outputs)
- 11.Comparison Study
- 12.Appendix(Coding)
- 13.Future Scope of Work
- 14.Conclusion
- 15.Reference

INTRODUCTION

- The objective of this online shopping system project project is to develop a general purpose e-commerce store where any product (such as computers, mobile phones, electronic items,) can be bought from the comfort of home through the Internet.
- An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest.
- It reduces time .
- Build a direct relationship between customer and retailers.
- An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that online shopping system project report time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as credit card number.

PREVIOUS WORK

There are many websites available in the internet which provides the facility of online shopping, But we have provided a option of rent which benefits the students to hire laptops at minimum cost . There is no or few application present , so we have taken an initiative to create this project.

PROBLEM DISCUSSION

Before the invention of online shopping sites the customers has to pay a lot of money for the products .The customer has to spend a lot of time for shopping. They used to travel various places to get good quality of products at cheap price.

PROBLEM ANALYSIS

What contribution would the project make?

This is an area of information technology where automation of each and every activity is gaining importance. This shopping website will lead to the automation of the shopping product online.

Automated process of examination is much better than the manual system as it has the following advantages:

- Time saving.
- Increased efficiency.
- Decrease overhead.
- Accurate.

REVIEW OF LITERATURE

- Get the basic knowledge of java/j2ee, Spring, Hibernate, MVC from www.w3school.com and other online sites.
- Learn how to install java jdk, Eclipse IDE
- Gain some knowledge about Bootstrap, HTML, CSS, JSP, Angular language
- H2 database is used with java for database handling
- HQL along H2 database light weighted data interchange format, is used with this application to fetch data easily from the server.
- The User interactive screen is used in this application to give a better overview of the application.
- From one click the user can get all the information about our products.
- Here we have also Rent option for giving rent of our electronics appliances.
- The webapp is very user friendly even an illiterate person can be used.

E-R DIAGRAM

FORMULATION OF ER- DIAGRAM:-

The Entity-relationship (E-R) data model perceive the real world as consisting of basic objects, called entities and relationship among these objects.

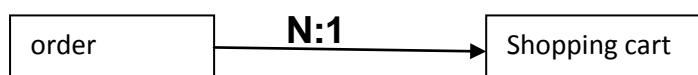
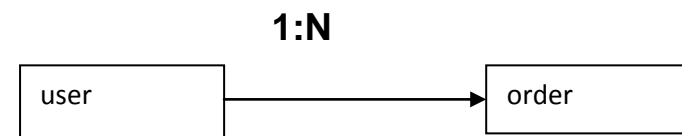
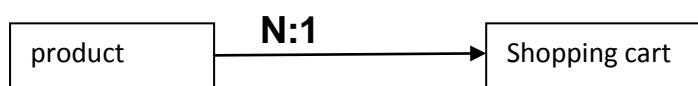
STEP 1:

Identifying the entities

1. product
2. order
3. user
4. Shopping cart

STEP 2:

Identifying relationship.



STEP 3:

Identify the key attributes.

1. User – user_id ,user_name,password
2. Product – product_id,price,description
3. Order – order_id,customer_name
4. Shopping cart–product_id,order_id

STEP 4:

Identify other relevant attributes.

1. User – user_id ,user_name,password
2. Product – product_id,price,description,in_stock,image,name
3. Order – order_id,customer_name,customer_add
4. Shopping cart–product_id,order_id,quantity,name,price
5. Admin – user_id,password.

STEP 5:

Complete ER diagram

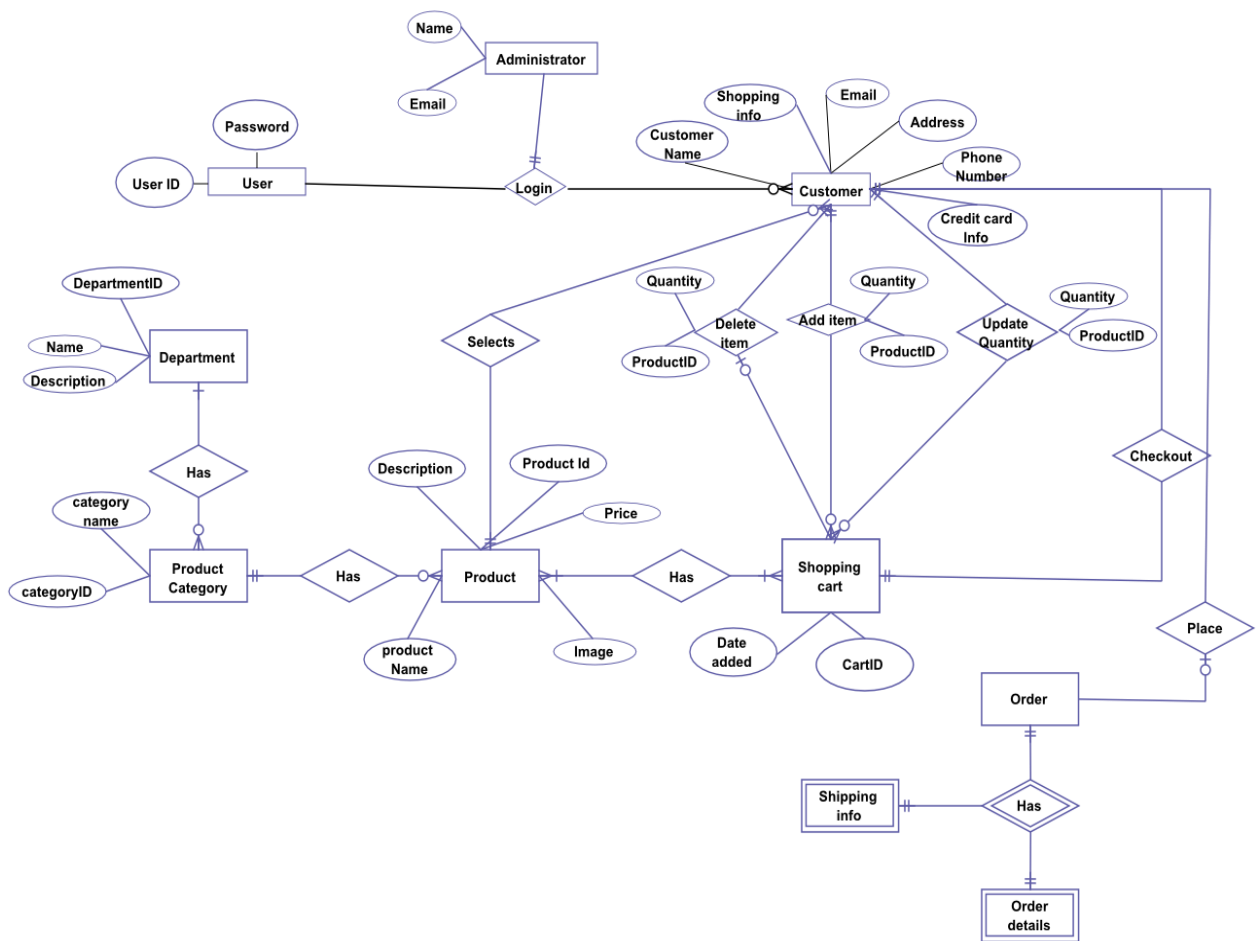


Fig : ER Diagram for online shopping cart

DATA FLOW DIAGRAM

DATA FLOW DIAGRAM or DFD is also known as bubble chart has the purpose of clarifying system requirements and identifying major transformations. It shows the flow of data through a system. It is a graphical tool because it represents pictures.

DFD DIAGRAM NOTATIONS

Now we'd like to briefly introduce to you a few diagram notations which you'll see in the tutorial below.

External Entity:-

An external entity can represent a human, system or subsystem. It is where certain data comes from or goes to. It is external to the system we study, in terms of the business process. For this reason, people used to draw external entities on the edge of a diagram.

Data Store:-

A data store represents the storage of persistent data required and/or produced by the process. Here are some examples of data stores: membership forms, database table, etc.

Process:-

A process is a business activity or function where the manipulation and transformation of data takes place. A process can be decomposed to finer level of details, for representing how data is being processed within the process.

Data Flow:-

A data flow represents the flow of information, with its direction represented by an arrow head that shows at the end(s) of flow connector.

DFD Level 0:



HARDWARE AND SOFTWARE SPECIFICATION

HARDWARE SPECIFICATION:

- Pentium – IV (Processor)
- Processor Speed : 2.00 GHz
- RAM : 2 GB
- Hard Disk : 500GB
- Operating System : Windows 10/7/8

SOFTWARE SPECIFICATION:

Backend	- Java/j2ee, Spring,MVC ,Hibernate
Frontend	- Angular js ,jsp
Operating System	- Windows Xp, 07,10,8
Browser	- Google chrome
IDEs	- Eclipse ee oxygen

IMPLEMENTATION DETAILS

Software development life cycle or SDLC is a model of detailed plan on how to create, develop, implement and eventually fold the software. It's a complete plan outlining how the software will be born, raised and eventually be retired from its function. Although some of the models don't explicitly say how the program will be folded, it's really a common knowledge that software will eventually have it's ending in a never ending world of change web, software and programming technology.

SYSTEM REQUIREMENT & SPECIFICATION

FUNCTIONAL SYSTEM REQUIREMENT:

This section gives a functional requirement that is applicable to the application “online shopping cart”

- Search module
- Home module
- User module
- Admin
- Order
- Rent

The functionality of each module is as follows:

Search module: The user will log on to the website and search for the right item to be purchased according by user.

Home Module : List of products are categorized here.

User Module :User can purchased or add products to cart as desired into their particular account.

Admin Module: In this module admin can manage and keep record of the products as required.

Order Module : Order can be made on the shipping address after confirmation.

Rent Module : One can rent products for particular amount of days.

NON-FUNCTIONAL SYSTEM REQUIREMENTS:

Performance Requirements:

Some performance requirements identified is listed below:

- ❖ The software shall support use of multiple users at a time.

- ❖ There are no other specific performance requirements that will affect development.

SYSTEM ANALYSIS

ITERATIVE WATERFALL MODEL

We are using iterative waterfall model as because of when we were implementing our application we have to do some part of the application and if we found some in the previous stage we have to go to that stage and solve the problem. So in our application we did some work and if there any error occurs we have to fix this out by going to previous stage and again apply the changes. Thus we follow the Iterative Waterfall Model Approach.

FEASIBILITY STUDY

WHAT ARE THE USER'S DEMONSTRABLE NEEDS?

User needs a user-friendly application so that the time can be saved and the work can be done easily and very fast. The web- application reduces the travel cost , provides flexibility, fast item finding in one click, serves the best and affordable price for the products to the customer.

COMPARISON STUDY

Shopping_cart(Present webapp)	Shopping_cart(Our webApp)
There is no welcome Screen hence not so interactive.	Welcome Screen is present to welcome the user,hence makes it somewhat interactive.
There is Login Page.	We have a login page so that a valid and registered user can use our website.

There is a register page but no information of address or location of user is present.	There is a register page with information of address or location of user is present.
There is no instruction how to use the app.	There is instruction in our app, how to use our app.
There is no rent page .	We have rent option so that one can hire product according to their need.

Snapshot:

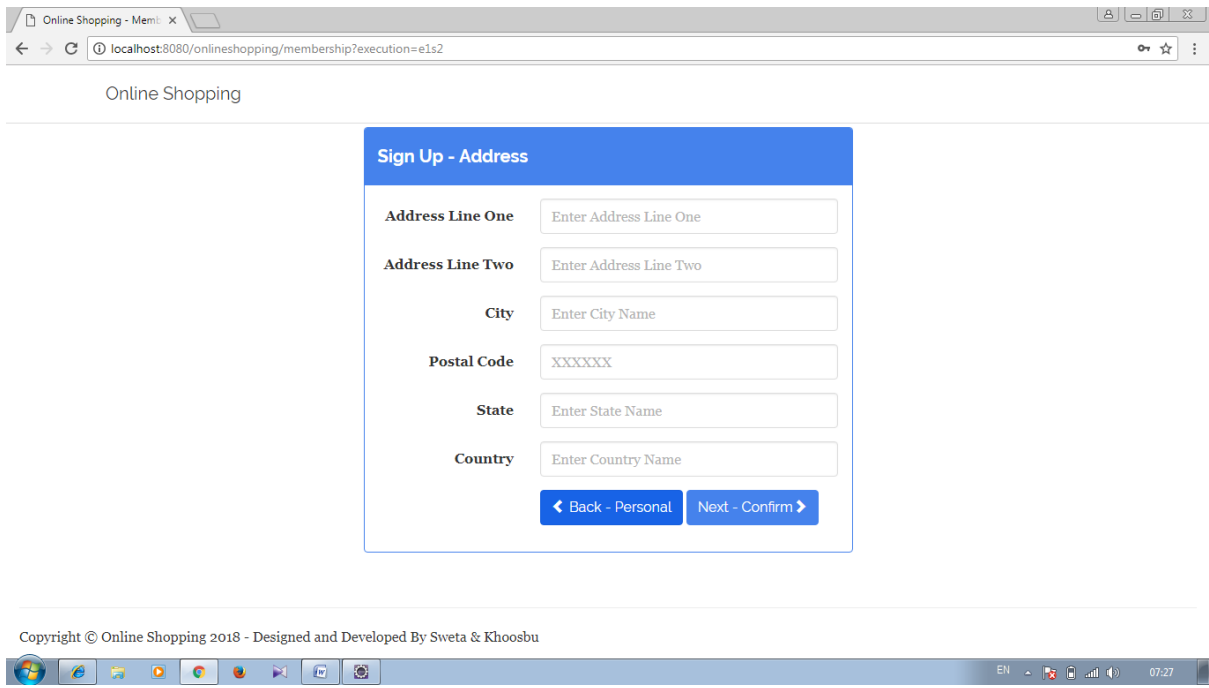
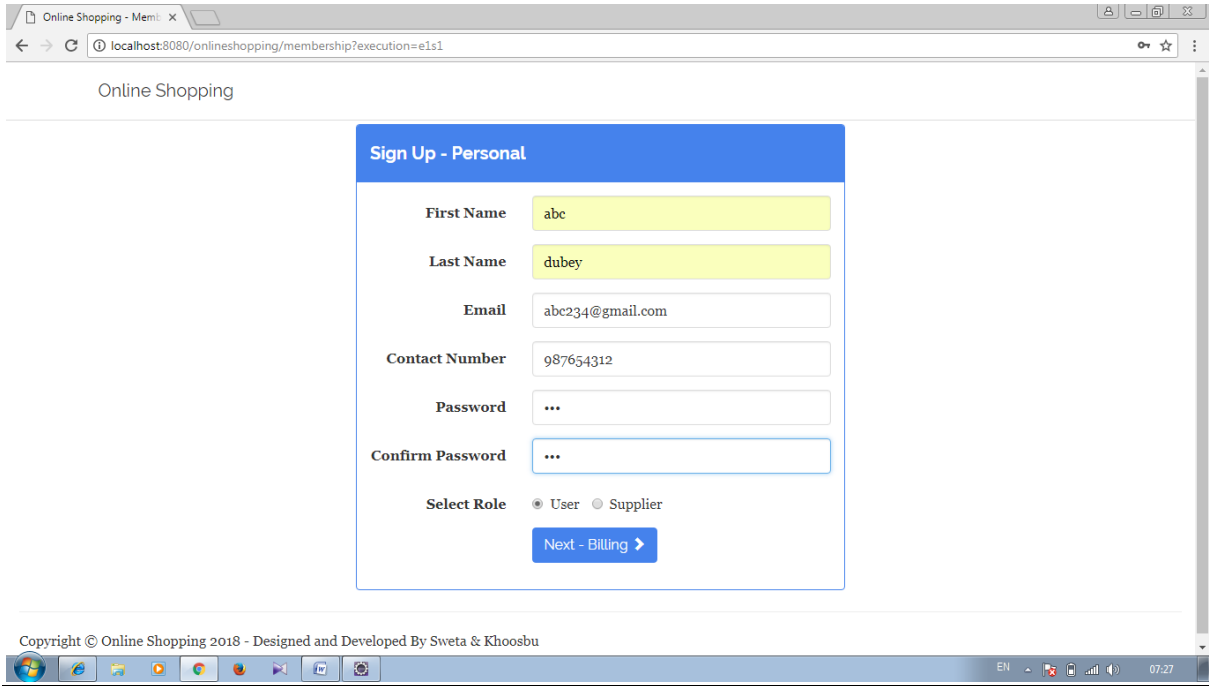
product Details:

The screenshot shows a web browser window with the URL `localhost:8080/onlineshopping/show/category/4/products`. The page features a navigation menu with 'Online Shopping', 'About', 'Contact', and 'View Products'. On the right, there are links for 'Sign Up' and 'Login'. A sidebar on the left lists product categories: 'Laptop', 'Television', 'Mobile', and 'Rent' (which is highlighted in blue). The main content area displays a list of products under the heading 'Shop Name' and 'Home / Category / Rent'. The products are shown in a table with columns for 'Name', 'Brand', 'Price', and 'Qty. Available'. Each product row includes a small image of the laptop, its name, brand, price, and quantity, along with icons for viewing details and adding to the cart. The products listed are:

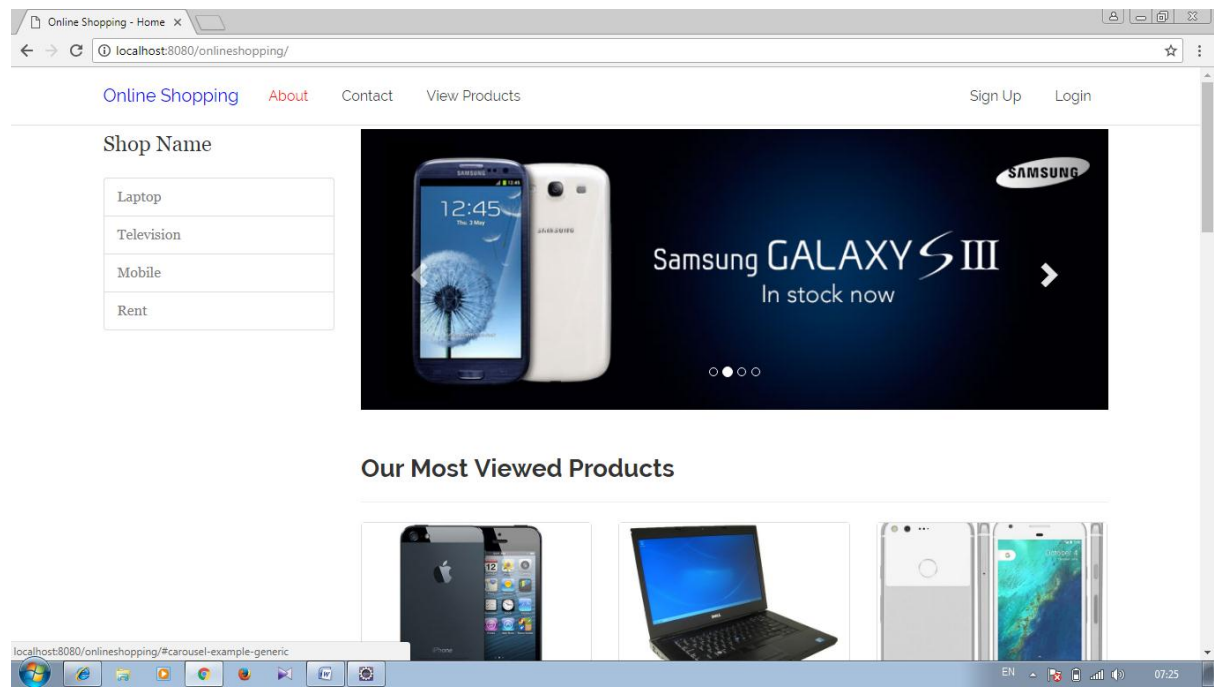
Name	Brand	Price	Qty. Available
laptop A6	dell	10000	4
HP 15 i3	Hewlette packard	3000	2
lenovo 150 A6	lenovo	6000	3

At the bottom of the product list, it says 'Showing 1 to 3 of 3 entries' and includes 'Previous' and 'Next' navigation buttons.

Registration/sign Up:



Home:



CODING SAMPLES:

Cart controller :

```
package.net.kn.onlineshopping.controller;
```

```
import.org.slf4j.Logger;
```

```
import.org.slf4j.LoggerFactory;
```

```
import.org.springframework.beans.factory.annotation.Autowired;
```

```
import.org.springframework.stereotype.Controller;
```

```
import.org.springframework.web.bind.annotation.PathVariable;
```

```
import.org.springframework.web.bind.annotation.RequestMapping;
```

```
import.org.springframework.web.bind.annotation.RequestParam;
```

```
import.org.springframework.web.servlet.ModelAndView;
```

```
import.net.kn.onlineshopping.service.CartService;
```

```
@Controller
```

```
@RequestMapping("/cart")
```

```
public class CartController {

    .private final static Logger logger = LoggerFactory.getLogger(CartController.class);

    .

    .@Autowired
    .private CartService cartService;

    .@RequestMapping("/show")
    .public ModelAndView showCart(@RequestParam(name = "result", required = false) String result) {

        .

        .ModelAndView mv = new ModelAndView("page");
        .mv.addObject("title", "Shopping Cart");
        .mv.addObject("userClickShowCart", true);

        .

        .if(result != null) {
            .switch(result) {
                .case "added":
                    .mv.addObject("message", "Product has been successfully added inside cart!");
                    .cartService.validateCartLine();
                    .break;
                .case "unavailable":
                    .mv.addObject("message", "Product quantity is not available!");
                    .break;
                .case "updated":
                    .mv.addObject("message", "Cart has been updated successfully!");
                    .cartService.validateCartLine();
                    .break;
                .case "modified":
```

```
.mv.addObject("message", "One or more items inside cart has been
modified!");
.break;
.case "maximum":
.mv.addObject("message", "Maximum limit for the item has been re
ached!");
.break;
.case "deleted":
.mv.addObject("message", "CartLine has been successfully removed!
");
.break;

.}
.}
.else {
.String response = cartService.validateCartLine();
.if (response.equals("result=modified")) {
.mv.addObject("message", "One or more items inside cart has been
modified!");
.}
.}

.mv.addObject("cartLines", cartService.getCartLines());
.return mv;
.
.}
.

@RequestMapping("/{cartLineId}/update")
```

```

    .public.String.updateCartLine(@PathVariable.int.cartLineId,@Request
    Param.int.count){
    .String.response=.cartService.manageCartLine(cartLineId,.count);
    .return."redirect:/cart/show?" +response;
    .}
    .
    .@RequestMapping("/add/{productId}/product")
    .public.String.addCartLine(@PathVariable.int.productId){
    .String.response=.cartService.addCartLine(productId);
    .return."redirect:/cart/show?" +response;
    .}
    .
    .@RequestMapping("/{cartLineId}/remove")
    .public.String.removeCartLine(@PathVariable.int.cartLineId){
    .String.response=.cartService.removeCartLine(cartLineId);
    .return."redirect:/cart/show?" +response;
    .}
    .
    ./* .after.validating.it.redirect.to.checkout
    .* .if.result.received.is.success.proceed.to.checkout.
    .* .else.display.the.message.to.the.user.about.the.changes.in.cart.pa
    ge
    .* .*/.
    .@RequestMapping("/validate")
    .public.String.validateCart(){
    .String.response=.cartService.validateCartLine();
    .if(!response.equals("result=success")).{
    .return."redirect:/cart/show?" +response;
    .}
    .else.{

```

```
.return."redirect:/cart/checkout";  
.}  
.}.  
}
```

CartLineDAo.java :

```
packagesnet.kn.shoppingbackend.dao;
```

```
import java.util.List;
```

```
import net.kn.shoppingbackend.dto.Cart;
```

```
import net.kn.shoppingbackend.dto.CartLine;
```

```
import net.kn.shoppingbackend.dto.OrderDetail;
```

```
public interfacesCartLineDAO {
```

```
    public List<CartLine> list(int cartId);
```

```
    public CartLinesget(int id);
```

```
    public boolean add(CartLinescartLine);
```

```
    public boolean update(CartLinescartLine);
```

```
    public boolean remove(CartLinescartLine);
```

```
    // fetch thesCartLinesbased on cartId and productId
```

```
    public CartLinesgetByCartAnd_Product(int cartIds, int  
productId);
```

```
    // updating thescarts
```

```
    boolean updateCart(Cart carts);
```

```
    // list of availablescartLine,,,,,
```

```
public List<CartLines> listAvailable(int cartIds);

// adding order details
boolean addOrderDetail(OrderDetail orderDetails);

}
```

VALIDATION CHECKING AND TESTING

Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test.

Test techniques include the process of executing a program or application with the intent of finding software bugs (errors or other defects), and to verify that the software product is fit for use.

The number and nature of errors in a new design depends on several factors:

- Communication between the user and designer.
- The programmer's ability to generate the code reflects exactly the system specifications.
- The time frame for design.

Types of Testing done:

Unit Testing:

Unit testing, also known as component testing, is a software testing that verify the functionality of a specific section of source code , sets of one or more computer programs modules together with associated control data, usage procedures and Operating procedures usually at the function level .

📁 Login Module:

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1	Can ID field be Null?	Null ID	ID cannot be NULL	Warning msg "ID can't be NULL"	Success
2	Can password be Null?	Null password	Password Can't be NULL	Warning msg "password can't be Null"	Success
3	Login button is working or not?	Button pressed	Perform login processing	Call proxy Inbox frame	Success
4.	Is Login Frame displaying properly?	Invoke Login Frame	All text fields are displayed and are	Little alignment problem	Success

Server side Login Module

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1	Is Database Connection establishing?	Connection object is created	Connection establishes	No error during connection was found	Success
2	Is able to retrieve Login ID and password from database	Login ID+ Password	Able to fetch data from Database	No error found during data fetching	Success
3	Is able to match Login ID & Password	Login Id +Password	Proper matching	Matching done	Success

Client- Server Login Module combined Testing

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1	Client Server Connection	Connecti on cmd	Connection established	Connection is established	Success
2	Server response handled properly or	Login cmd	Proper Message Displayed to User	All type of messages are displayed in proper format	Success
3	Communicati on between client and server	Login cmd	Login cmd is received by server and response is send to client	Communicatio n is taking place.	Success
4	What if User Id doesn't exist	Login cmd+ UserID	Server should report non existence of UserID	Error msg: "Login ID doesn't exist"	Success
5	What if wrong password is entered?	Login cmd+ UserID+ Password	User should be prompt for reentry of password	Error msg: "Invalid Password"	Success

Add Record Module:

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1.	Is Database Connection establishing?	Connectio n object is created	Connectio n establishe	No error during connection	Success

2	Addition of Books.	ItemName /Brand Price,Quantity etc.	Addition Completed.	Addition completed	Success
3	Addition of Books if already exists	ItemName /Brand Price,Quantity etc.	Addition should not complete	Addition is not completed, because	Success

Search Record Module:

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1.	Is Database Connection establishing?	Connection object is created	Connection establish	No error during connection	Success
2	On search Criteria of Title/Publisher /Edition should come in	ItemName/ Brand Price,Quantity etc.	Result found.	Result found.	Success

System Testing:

System testing , end-to-end testing , tests a program to check logical changes made on it to find errors to verify that the system meets its requirements.

Black Box Testing:

Black Box testing is a software testing technique examining functionality of an application without seeing the sourcecode. The

testers are only aware of what the software is supposed to do, not how it does it.

Functional Requirements

Sr. No	Test Case Description	Input	Expected Behavior	Observed behavior	Test Result
1	Can New User Register?	Personal Info of User	User should Be registered on DTIS server	User is Registered only If desired Id does Not collide with Existing Ids	Success
2	Can User Login?	LoginId + password	User should Be login	User is login only When Login Id & password is valid	Success
3	Can User Add Records	ItemName/Brand Price,Quantity etc.	User should be able to Add records	Added records will be displayed	Success
4.	Can User Delete Records	ItemName/Brand Price,Quantity etc.	User should be able to delete records	Deleted records will not be displayed	Success
5	Can User Update Records	ItemName/Brand Price,Quantity etc.	User should be able to update records	Updated records will be displayed	Success
6.	Can User Search Records	ItemName/Brand Price,Quantity etc.	User should be able to search records	Result of search will be displayed and also mostly viewed items.	Success

7.	Can User Read information available on the site.	Click the link	User should be able to Read information	Information will be displayed.	Success
8	Can User Logout	Click On Logout	User should be able to	Logout Message	Success

Optimization points

The software will work efficiently and speedily when the following conditions will be satisfied:

- The server should be of high configuration.
- The client machine has larger RAM.
- Adequate free space on the client's hard disk.
- The user waits until he gets the home page properly.
- No access to the database for writing, deleting or updating by any other except the authority.

Salient Features of the System

- The entry of product details into the website are completely user friendly.
- The Spring technology that we have used makes the work easy to maintain the security features of the web-application.
- All editing features and navigation from one field to another, one web page to another, etc is possible.
- Exit from any web page is possible.

- Validation checks have been incorporated in each web page at the appropriate fields.
- Database has been secured by means of password protection.
- Authorization is necessary for all the internal users of the site.

LIMITATIONS AND FUTURE SCOPE OF WORK

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

1. The system is not configured for multi- users at this online shopping system project time. The concept of *transaction* can be used to achieve this online shopping system project.
2. Adding product to the cart and if user doesn't continue to shopping then after a month if they want to shop that previous product that has been added to cart and unknowingly if the price of the product has been raised and it is not updated in the cart. This is the major limitation of the project which we will be solving soon.
3. 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:

1. The Administrator of the web site can be given more functionalities, like looking at a specific customer's profile, the books that online shopping system project report have to be reordered, etc.
2. Allow the user to pay the price of costly products in EMI's.
3. Multiple Shopping carts can be allowed.
4. Make it more securable in case of renting products.

In future we want to make it to work globally.

CONCLUSION

While developing this application a conscious effort has been made to create and develop a software package, making use of available tools, techniques and resources .

While making the system, an eye has been kept on making it as user-friendly, flexible as possible. As such one may hope that the system will be acceptable to any user and will adequately meet his/her needs.

Spring has a lot of projects under its umbrella like Spring MVC, Spring Data, Spring AOP, Spring Security, Spring Boot, etc. Please refer the spring website ([Spring Projects](#)) for the available projects. Apart from that, it has huge developer base and community support. Same is the case with Hibernate. It has a couple of projects. Check out their website ([Hibernate. Everything data. - Hibernate](#)). I've worked on the ORM and Validator only. It is also another mature framework with huge developer base and community support.

In essence, these frameworks have helped the developer focus on the business problems and not worry about the boilerplate code. All you have to do is some configuration in an XML or Java Class and everything else is taken care of. You don't have to worry about caching, connection pooling, etc. Both of them provide out of the box features, which are good for most of the use cases. But you are free to extend the classes and provide custom behavior based on your use case.

Here we have used h2 database . H2, the pure Java embeddable database, is among the best of Java embeddable database. The [h2 database](#) can be run both as a file-database mode and client-server mode.

Overall the project teaches us the essential skills like system analysis and design techniques like data flow diagram in designing the system.

REFERENCES

Websites

1. www.w3schools.com
2. www.stackoverflow.com
3. www.tutorialspoint.com
4. www.java.com
5. www.wikipedia.org

Books & Author

1. [Spring MVC beginners Guide by Amuthan G](#)
2. [Murach 's java servlet and jsp](#)

Anti-Plagiarism declaration

PLAGIARISM DECLARATION

1. I know that plagiarism means taking and using the ideas, writings, works or inventions of another as if they were one's own. I know that plagiarism not only includes verbatim copying, but also the extensive use of another person's ideas without proper acknowledgement (which includes the proper use of quotation marks). I know that plagiarism covers this sort of use of material found in textual sources and from the Internet. 2. I acknowledge and understand that plagiarism is wrong.

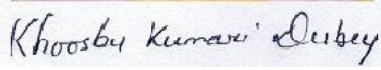
3. I understand that my research must be accurately referenced. I have followed the rules and conventions concerning referencing, citation and the use of quotations as set out in the Departmental Guide.

4. This assignment is my own work, or my group's own unique group assignment. I acknowledge that copying someone else's assignment, or part of it, is wrong, and that submitting identical work to others constitutes a form of plagiarism.

5. I have not allowed, nor will I in the future allow, anyone to copy my work with the intention of passing it off as their own work.

Name : KHOOSBU KUMARI DUBEY

Student # : MCA2015/039

Signed : 

Date :