

CROSS PLATFORM SHOPPING CART APPLICATION USING SAPUI5

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ABSTRACT

In the present scenario, many supermarkets are still using the traditional shopping cart and bar code scanning. This paper presents the designs and implementation of a new application named as "Cloud-Based shopping cart system using OPENUI5 ". In this paper we mainly develop and establish E-commerce trade platform, specifically to provide the service platform for online marketing and shopping cart trade activities. The establishment of shopping cart trade platform includes the model of the virtual e-commerce center, the immediately release of enterprise's products information, graphic user interface design, the design of the shopping cart, the design of goods order confirmation, the connections of data to databases, etc. The shopping cart trade platform constructed a convenient and personalized e-commerce environment for the consumers and business operators. The whole platform possesses versatile, convenient and tradability. The behaviors are classified here into three types "purchasing the product", "adding the product to shopping cart", and "viewing the product information".

Keywords: -E-commerce, products, shopping cart, online shopping

1. INTRODUCTION

E-commerce has become a hot technology at present, and the reason of it comes from huge benefits, experts predict that just online retailing will expand rapidly from 1.8billion in1997to26 billion in 2002. The rising popularity of the network technology, more and more people are immersed in the Internet world. In businesses giving up and growing population of the internet which mean to give up an emerging and rapidly growing market.Development of a browser friendly, cross platform shopping cart application OPENUI5 framework to be used HTML5/CSS supported Front-End and JavaScript supported Back-End. Application will be backed up and run on a cloud platform (SAP HANA).The Cart will be built on SAP HANA Cloud Cockpit and storage shall be privately accessed. Layout followed will be Master-Detail of the SAP and the Cart will be AJAX/JSON supported with JQuery which will be used to simplify the JS coding.

2. SHOPPING CART PLATFORM ARCHITECTURE

The shopping cart platform consists of client server, web server, payment gateway and a database server. The client only does simple processing, through a number of data processing run on the data server. So that the four layersstructure becomes necessary. These layers are: presentation layer application logic layer, and data service layer. The presentation layer runs in the client application as a browser. In application logic layer, the encapsulation for the web service layer calls to achieve data from the database server which provides data integrity and security. Data access layer provides data access to run on a specified data server.



Fig.No.1E-Commerce Architecture

In the client layer the items are viewed by the client by simple processing through the data which includes “Searching for the items” and “Browsing for the item” (here item refers to the product which the client wants to buy). The recommended items as per the previous choices of the users are shown in the form of “Recommended items” which is done after the authentication of the customer, the customer puts the required item to the cart by clicking “Add to cart” button or to “Wish list” as per the customer choice then comes. The payment of the item added to cart is done through a payment gateway.

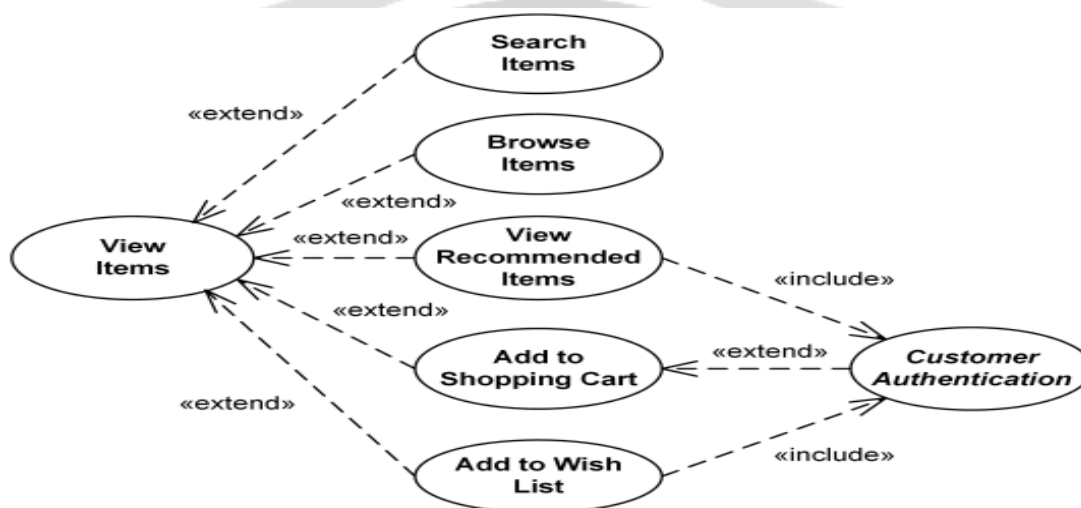


Fig.No.2 Use-case Diagram for the shopping cart

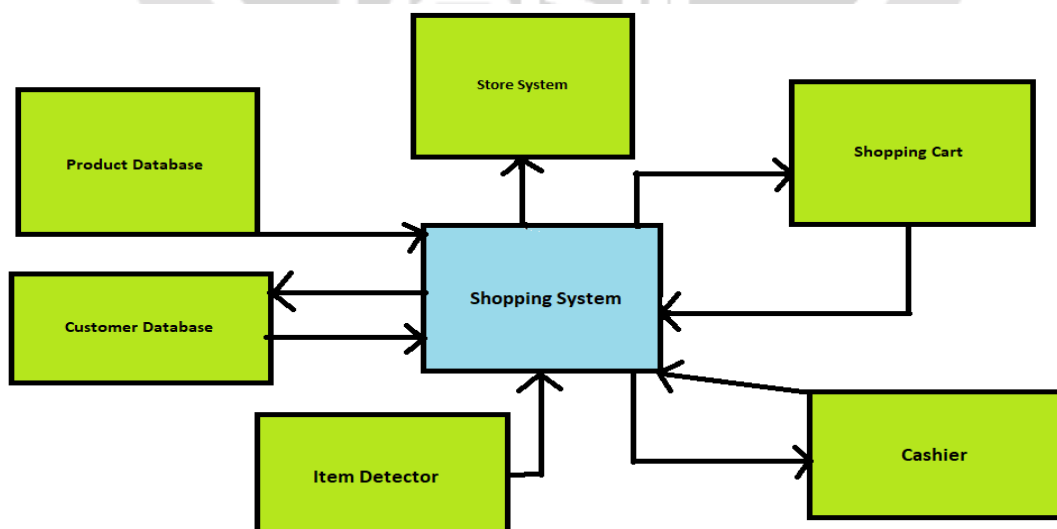


Fig.No.3 System Architecture Diagram

3. MODULE DESCRIPTION

The shopping cart is constructed in the following manner. The front end is designed using HTML5/CSS with JavaScript library, and the Back-End construction has been implemented using JSON. For development of a browser friendly, cross platform shopping cart application, OPENUI5 framework is to be used. The application will be backed up and run on a cloud platform (SAP HANA). The Cart will be built on a web ide under SAP HANA Cloud Cockpit and storage shall be privately accessed. Layout followed will be Master-Detail of the SAP and the Cart will be AJAX/JSON supported with JQuery, which will be used to simplify the JS coding.

3.1 Design of Graphical User Interface

The designing of the Graphical User Interface for web browser is achieved with the codes in HTML5/CSS with JavaScript modules defined in the sap.m library. The GUI is being supported by the Master-Detail Format provided by the openui5 library. Master format consists of the data defining the product and the Detail Layout includes the product description and the image of the product. The first page renders an alert describing the Cart Name when opened in a fresh tab. Till a user taps over the product in the master layout, no description is displayed in the detail layout. A search box has been attached over the top of the master layout to perform a search operation for products included in the cart. At the bottom of the layout is a reference tab which leads to the cart with product price description and payment gateway.

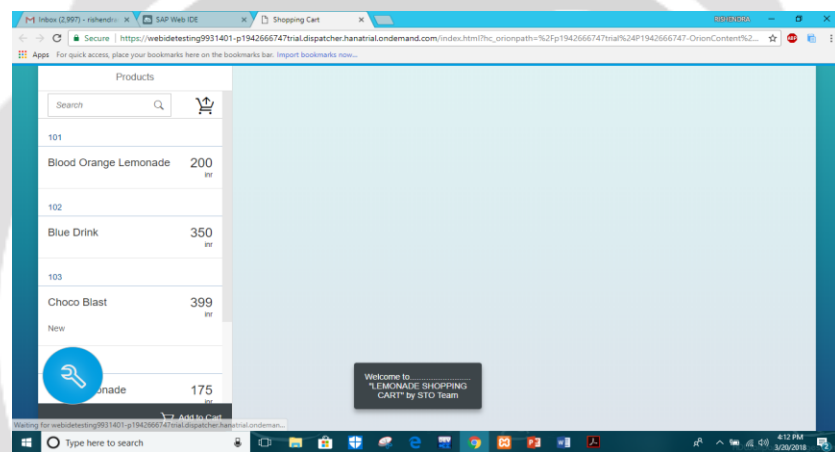


Fig.No.4 Design of GUI

3.2 Design of Cart Module

The cart module contains the order summary of the products selected for purchase. Various products can be selected and the total cart value is calculated automatically and displayed as shown in fig.1.2. The cart operations are being controlled over by "Component.js" and "App.controller.js" files in the application code. The cart can be accessed using the tab located at the bottom right of the master layout. When a user clicks the cart tab, the browser takes the user to the order summary and the total cart amount is displayed over the screen. At the bottom of the cart, lies the payment portal tab. When clicked over the tab, one is directed to the payment gateway, where they need to fill the initials of the card they are paying through

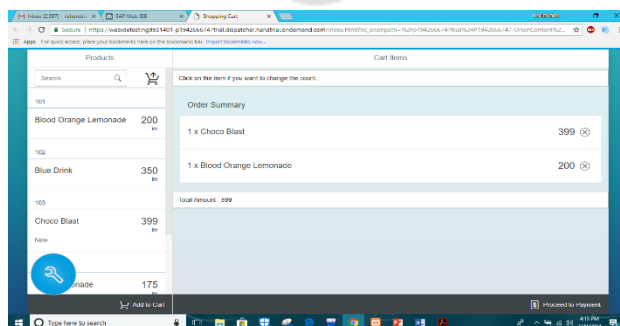


Fig.No.5 Design of Cart

3.3 Design of Payment Gateway

The payment gateway is a normal form, which accepts the card details of the user and directs it towards the payment portal. The form contains the input box for Card Number, Expiry Date, CVC number (3 digits) and Name on the card. This information is used for accepting payments. The payment form has a “Pay” tab for directing the user to the payment gateway. The field routing is done using various HTML tags with their class definitions.

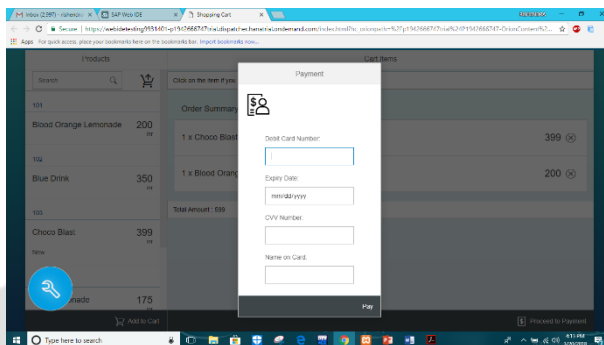


Fig.No.6 Design of Payment Gateway

3.4 Connection to Database

The data base has to be connected to the UI in order to fetch data for display and calculation of the amount in the cart. The database is created and connected using the following code:

```
var mysql = require('mysql');

var con = mysql.createConnection({
  host: "localhost",
  user: "yourusername",
  password: "yourpassword"
});

con.connect(function(err) {
  if (err) throw err;
  console.log("Connected!");
});
```

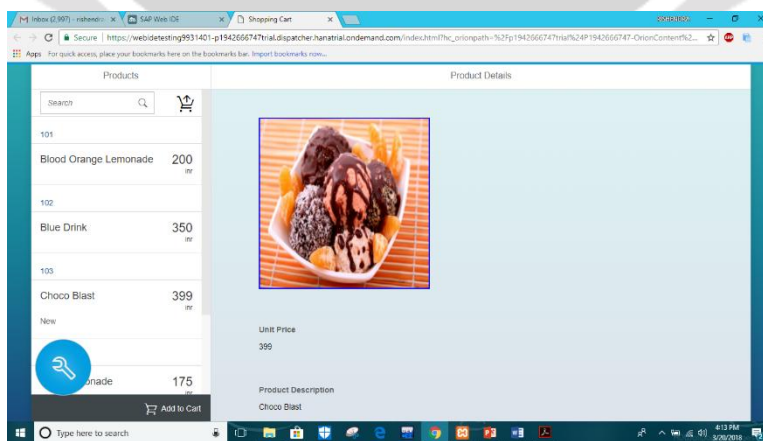


Fig.No.7 Connection to the database

4. CONCLUSION

Our hypothesis was that Cart based on SAPUI5 would work successfully in all of the devices tested. My results do support my hypothesis. We think, the tests we did went smoothly and we had no problems. Therefore, we conclude that a cross platform application has been successfully designed, which can be operated over multiple devices without any use of separate application for each device. An interesting future study might involve testing the dynamic nature of application to simulate actual deployment over dynamic conditions of changing values.

5. REFERENCES

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