# REAL TIME DATA RETRIEVAL AND CONCURRENT DATA FLOW

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**Abstract –** Real -Time analytics (RTA) has emerged as a distinct branch of big data analytics focusing on the velocity aspect of big data , in which data is prepared , processed and analyzed as it arrives, intending to generate insight and create business value in near real-time.

The software system being produced is called E-Commerce Web. This system is designed to "Provide Real Time data Retrieval & Management" for the process of placing an order on the Internet and facilitating the actual delivery of the product. E-Commerce is now seen as a reality for many businesses and a normal part of a business plan. Different key technologies used and highlights the significant features including real time data update via php, Inventory Management and Security, Employee Management and Attendance Functionality, User Registration and related issues, Payment options, Mobile Functionalities are considered.

We proposed a system here consumer moves through the internet to the web site. From there, he decides that he wants to purchase something, so he is moved to the online transaction server, where all of the information he gives is encrypted. Once he has placed his order, the information moves through a private gateway to a Processing Network, where the issuing and acquiring banks complete or deny the transaction. This generally takes place in no more than 5-7seconds. It provides a brief overview of what e-commerce website business is about , its key features and the goals it aims to achieve.

***Key Words:*** *Web Development, Technologies, E-Commerce, Real-Time Analytics, data streaming, Big data analytics, Data streaming, complex event processing.*

## 1. INTRODUCTION

E-commerce means using the Internet and the web for business transactions and/or commercial transactions, which typically involve the exchange of value (e.g., money) across organizautional or individual boundaries in return for products and services. Here we focus on digitally enabled commercial transactions among organizations and individuals. E-business applications turn into e-commerce precisely, when an exchange of value occurs. Digitally enabled transactions include all transactions mediated by digital technology and platform; that is, transactions that occur over the Internet and the web.

Hence, e-tailing is a subset of e-commerce, which encapsulates all "commerce" conducted via the Internet. It refers to that part of e-commerce that entails the sale of product merchandise and does not include sale of services, namely railway tickets, airlines tickets and job portals.It will too permit, on stock-wide premise, clients and supervisors to associated with an advancement framework that handles percentage-off advancements that can be connected to members' orders. This interaction incorporates the creation (by supervisors) and the application to arrange (by clients) of the advancements. The framework has full mail capabilities; the robotized mail usefulness will be utilized to send advancements to individuals of the framework as well as give the supervisors with low-stock notices.

Application will permit any client to form an account to end up as a customer. The client, through the method of account creation, will have the alternative to getting to be a part of the App. The framework will permit clients to Browse, look, Select, and include items in the Shopping Cart. At that point, given they have Products in their Shopping Cart, check out items within the shopping cart and decrement the stock that the framework keeps up. The framework moreover permits a director to oversee

the inventory with full Create, Recover, Upgrade, and Erase functionalities concerning items within the framework.

## 2. PRIOR WORK

The systematic literature review methodology, aiming to develop and implement a rigorous and repeatable process that will give a thorough and unbiased review of the body of literature already in existence. Proper design has become a critical element needed to engage website and mobile application users. However, little research has been conducted to define the specific elements used in effective website and mobile application design. We attempt to review and consolidate research on effective design and to define a short list of elements frequently used in research. The design elements mentioned most frequently in the reviewed literature were navigation, graphical representation, organization, content utility, purpose, simplicity, and readability. We discuss how previous studies define and evaluate these seven elements.

E-Commerce Website allows easy management of products, orders, customers, categories, payments information as well as cart management. Products are categorized in a user-friendly manner, as well as users can register and create multiple addresses in one account. Orders are placed by customers.

Back-end development focuses on the server-side aspects of or web application. this kind of development cares with web site design, scripting, and communication with databases. Back-end code permits the communication between browsers and data from databases. Back-end developers concentrate on however a web site function, which implies they may work with arthropod genus, code that interacts with databases, libraries, knowledge design, and more. Back-end development works in conjunction with front-end development to supply users with a useful and interactive expertise.

## 3. SYSTEM DESIGN

In this work focuses on Inventory management, Attendance system, Payment gateway, Employee management.
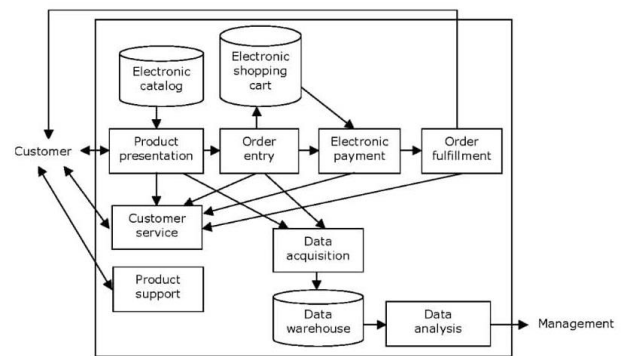


**Fig -1**: System Architecture
**System Module Description:**
- Coding(HTML,CSS,JavaScript,Bootstraps)
- Database
- Payment System
- Management

### 3.1 Coding
The website design is the method of shaping the coding, modules in HTML, CSS, JavaScript and BootStraps for designs, interfaces and information for a system to satisfy mere needs.

### 3.1.1 HTML
By using semantic HTML elements, descriptive headings, meaningful alt attributes for images, and proper metadata, developers can improve the visibility and ranking of their websites in search engine results pages (SERPs), driving organic traffic and increasing online visibility. HTML markup is essential for optimizing e-commerce websites for search engines. It defines the elements and components of a webpage, such as headings, paragraphs, lists, and links. By structuring content with HTML, web developers can organize information in a clear and logical manner, making it easier for users to navigate and understand.

### 3.1.2 CSS
Selectors are used to target HTML elements for styling. They can be based on element types, class names, IDs, attributes, or other criteria. CSS supports various units for specifying lengths, sizes, and positions. Common units include pixels(px), percentages (%), ems (em), rems (rem), viewport units ,and more. With CSS, we can control the layout, colors, fonts, and other visual aspects of a webpage. It provides a high degree of flexibility and customization, allowing designers to create visually appealing and unique designs. By using CSS, we can apply styles to multiple elements simultaneously, reducing redundancy in the code.

### 3.1.3 Javascript

JavaScript is essential for adding interactivity, dynamic content, and enhanced functionality to e-commerce websites, ultimately improving the user experience and driving sales. Variables are used to store data values. They can be declared using the var, let, or const keywords. The Document Object Model (DOM) represents the structure of an HTML document, and JavaScript can be used to manipulate the DOM dynamically. Common DOM manipulation methods include selecting elements (document.getElementById(), document.querySelector()), modifying element content (innerHTML, textContent), adding or removing classes (classList.add(), classList.remove()), and handling events (addEventListener()).. This dynamic updating enhances the user experience by making interactions smoother and more responsive.

### 3.1.4 Bootstrap

This system used styles for form elements such as input fields, checkboxes, radio buttons, select dropdowns, and textareas. Bootstrap's grid system allows you to create responsive layouts by dividing the page into rows and columns. It provides classes like .container, .row, and .col-* to organize content and adjust the layout based on different screen sizes. It also offers form validation styles and feedback icons to enhance the user experience. Its modular structure, pre-styled components, cross-browser compatibility, and integration with JavaScript plugins make it an ideal choice for building modern and user-friendly e-commerce experiences.

### 3.2 Database

Databases serve as the backbone for managing inventory, employee time tracking, and payment processing by providing a reliable and scalable platform for storing, organizing, and accessing relevant data efficiently and securely. It managing inventory, employee in/out timing, and payment gateways by providing a structured and efficient way to store, organize, and retrieve data.

### 3.3 Payment System

A payment gateway is a service that processes online payments securely. There are many payment gateways available, such as PayPal, Stripe, Square, and Authorize.Net. Before integrating a payment gateway, you'll need to set up a merchant account with the chosen payment gateway provider. Once you have a merchant account, you can integrate the payment gateway into your website. The integration process may involve server-side scripting (e.g., PHP, Node.js) and client-side scripting (e.g., JavaScript) to communicate with the payment gateway securely. Security is paramount when handling online payments to protect against fraud and unauthorized access to payment data. : Once testing is complete and everything is working as expected, you can launch your website with the integrated payment system. Test various scenarios, such as successful payments, declined payments, and error handling, to identify and address any issues. Payment authentication is the process of confirming a customer's identity through at least one of the following authentication factors: knowledge, inherence, ownership, and user location. Knowledge is the most common category used for transaction authentication**.**

### 3.4 Management

Managing real-time data retrieval and concurrent data flow involves handling data streams efficiently and ensuring timely processing of incoming data while maintaining concurrency and scalability. Utilize parallel processing techniques to handle multiple data streams concurrently. these methodologies, businesses can effectively manage inventory, employees, payment processing, and real-time data retrieval to support their operations and provide excellent customer experiences.

## 4. UML DIAGRAM
### Class Diagram

In a real-time data retrieval and concurrent data flow system, you would typically have several components working together to process and manage the data efficiently. Here is a PlantUML class diagram that represents such a system. It includes classes for data sources, data flow, data processing, and storage.
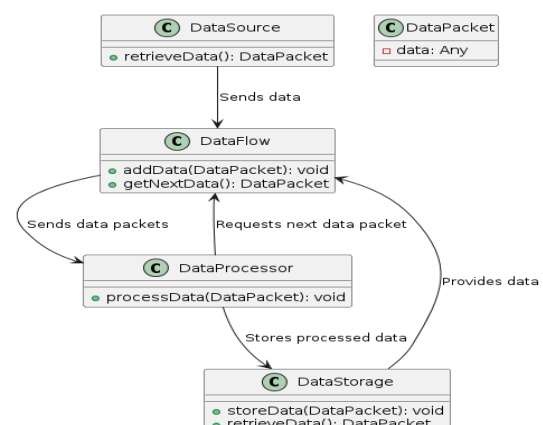


**Fig 1:-** Class Diagram

## Deployment Diagram

A deployment diagram for real-time data retrieval and concurrent data flow shows how software components and hardware nodes are deployed in a system. This includes the physical or virtual hardware infrastructure and how the software components interact with each other and the hardware.
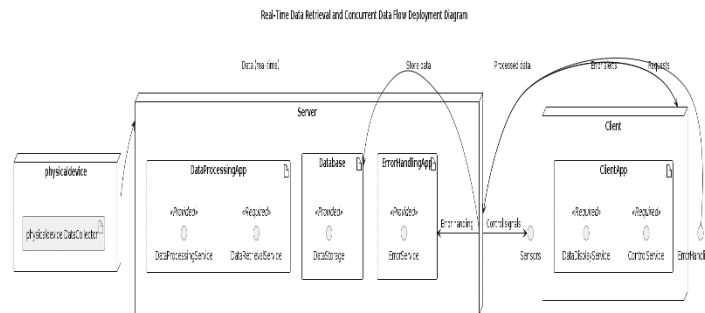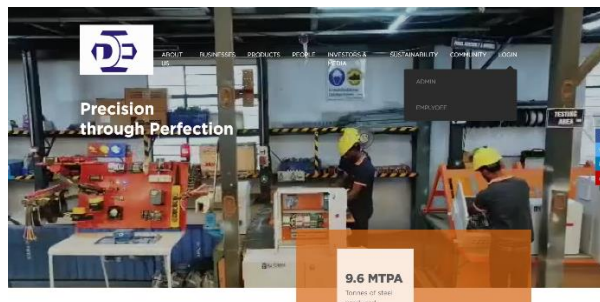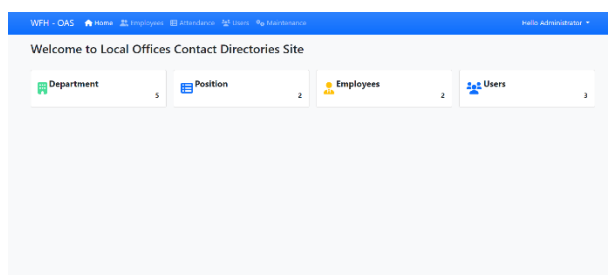


**Fig 2:-** Deployment Diagram

## 5. IMPLEMENTATION

### First Screen:

After hosting on local its show this UI.
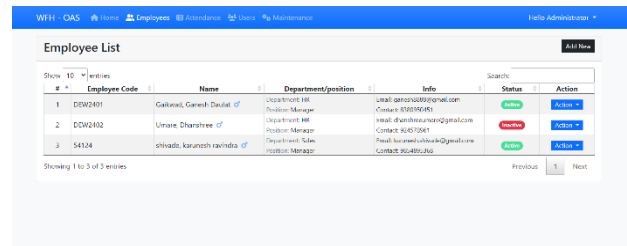
It display About Us, Business, People, Product and admin tabs.



### Admin Login :

After that click on login tab it display the employee login and admin login. If click on admin login it will redirect admin page which is required to take id and password.



### Employee Login:

In the employee module display the list of employee which are active or inactive.
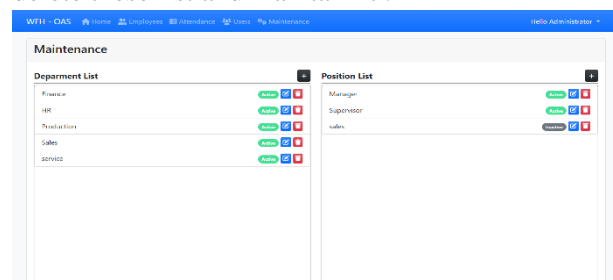


### Attendance System:

After click on attence tab it display the attence of employee and also take the id and password of each employee.
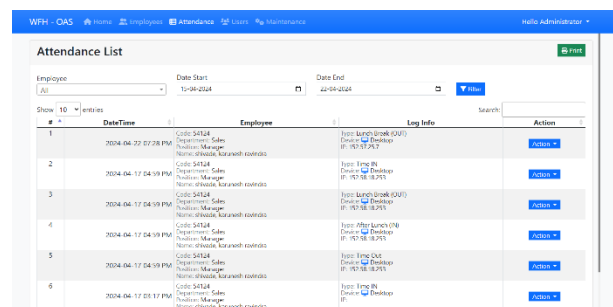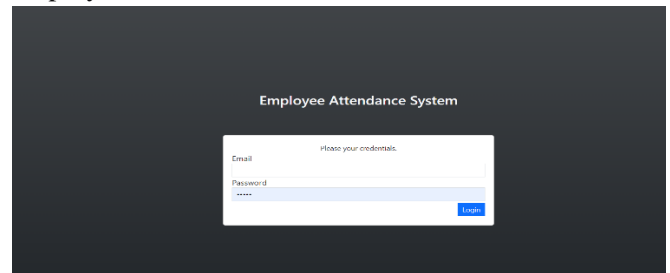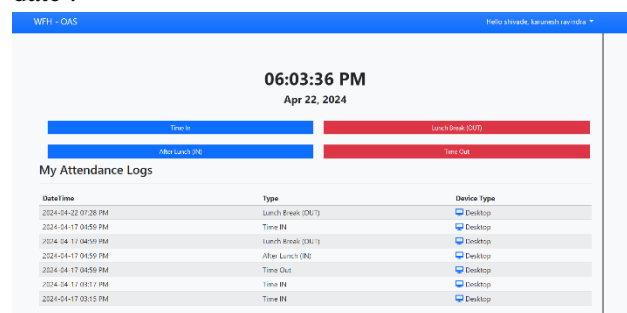




### Maintainance :

Click on maintainance tab it include the department list and position list.The administartor can update , edit or delete these list and maintain it .
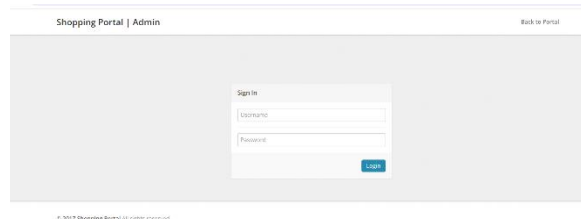


### Attendance Logs :

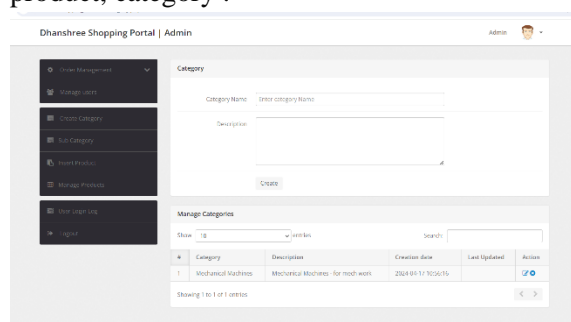It display the every employees In and Out timing with date .

**Shopping Module:**

The shopping module required id and password . Only authorized people can access the shopping module.
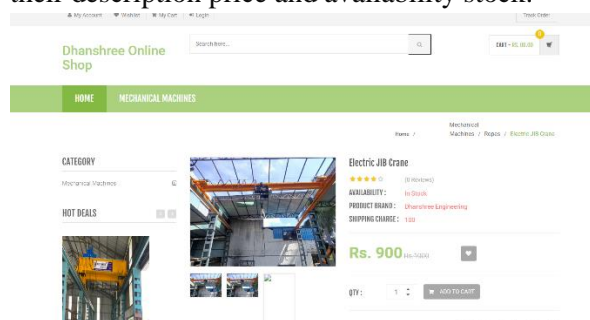


In these module admin can add,edit and delete the product, category .



**Products :**

After click on the product tab diplay the all product with their description price and availability stock.



**Payment Gateway :**

A payment gateway in the context of real-time data retrieval and concurrent data flow plays a critical role in ensuring secure, efficient, and seamless transactions for businesses and customers.
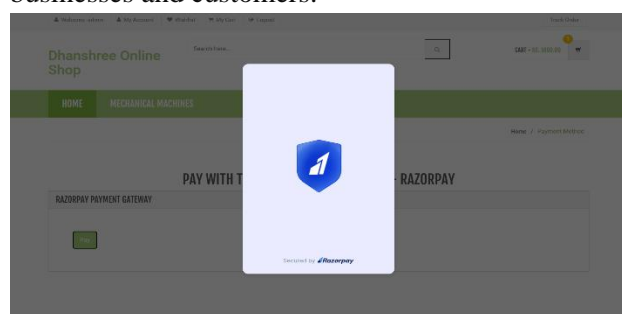


**CONCLUSION**

The World-Wide internet represents the highest technology to the perfect of a very distributed network atmosphere for polymorphic communication. As such, it should be although of as a paradigm shift aloof from earlier network protocols. Web Applications design issues the look and implementation of pc code that runs on internet servers, rather than running only on desktop computers, laptops or mobile devices.

E-Commerce still speaks to one of the trade strategies that take advantage in the event that done the proper way, indeed in case the stock showcase and commodities fell, E-Commerce is still able to outlive and get tall exchanges. In expansion, it is additionally able to present modern strategies and styles in exchanges. Utilizing broad E-Commerce within the Web world is much superior to bringing goodness to the person.

**ACKNOWLEDGEMENT**

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