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B3 (Non-Hons)

**CLOUD APPLICATION DEVELOPMENT**

CONCEPT OVERVIEW:

E-commerce applications offers wide range of products and functions. From the start of your browsing the application to viewing the variety of products, add to cart of your choice, fill details and checkout, multiple payment gateway; be it cash on delivery or online payments through networking options banks or google pay, etc. where you either login your credentials or scan QR code, acknowledgement of successful transaction.

At Backend they store all of the data and analyse to provide with recommendations and sale notifications for customer engagement.

Then you receive the updates related to the delivery of your product and feedback regarding same. Ratings help to analyse and improve the service. Moreover, if customer can return or exchange the product it needs to be checked by the delivery man and then return in initiated giving back the money in form of credits or deposit to bank.

Some have also incorporated the chatbots for easy and effective solutions. With 247 service and quick solutions.

Some sites provide personalized suggestions regarding what product would be best suited as the requirements.

Integration of all the services and handle the traffic and providing better user experience is what enhances the experience.

Relating this with the cloud, we see different microservices integrated together, updates show the latest version and control.

Continuous integration of more and more features in the pipeline of this site.

One of such e-commerce web application use case includes:

an online medicine store that allows users to purchase pharmaceutical products over the internet. The project would involve building a user-friendly interface for customers to browse and search for products, as well as a secure checkout process for purchasing the products. Websites like PharmEasy, Apollo247, Netmeds, etc. provide such facilities.

A catalog of products that can be searched and filtered by various criteria such as brand name, active ingredients, and condition treated.

A shopping cart for customers to add and remove products before checking out.

A secure payment gateway for customers to purchase their items.

A prescription upload feature for customers who needs prescription medicine.

A track order feature for customers to track their order status.

A secure account management system for customers to view order history and manage their personal information.

A customer service feature for customers to contact the store with any inquiries or issues.

An admin panel for store management where they can add, update and delete products, process orders and manage customer information.

It would also require integration with a back-end system that can manage inventory, process payments, and handle customer data.

*Why cloud?*

Cloud computing provides several benefits for medical e-commerce sites, including increased scalability, reliability, security, cost savings, and accessibility. One real-life example of a medical e-commerce site that has benefited from cloud computing is Medicomart.

Medicomart is a medical e-commerce platform that sells medical supplies and equipment. They faced challenges with managing their growing data and ensuring the security of sensitive patient information. To address these challenges, they moved their platform to the cloud.

By using cloud computing, Medicomart was able to:

Scalability: The cloud infrastructure allowed Medicomart to easily scale up and down as needed, eliminating the need for expensive hardware upgrades or maintenance.

Reliability: Cloud service providers have multiple servers and data centers, which helps ensure that Medicomart has high uptime and reliability, and provides peace of mind to customers.

Security: Cloud providers typically have advanced security measures in place to protect sensitive medical data, including encryption and secure data storage. This helped Medicomart ensure the privacy and security of patient information.

Cost savings: Cloud computing helped Medicomart reduce costs by eliminating the need for expensive hardware and maintenance, and enabling them to pay only for the resources they actually use.

Accessibility: With cloud computing, Medicomart was able to allow authorized users to access information and applications from anywhere with an internet connection, which is important for remote workers or those who need to access medical data on-the-go.

Moreover, with functionalities of Aws, application can generate automated triggers and notification which can be handled by Cloud applications using AWS services like SQS (Simple queue service) that help generate personalized emails, reminders, verification and welcome emails etc.

For some e-commerce sites, real-time provisioning may be important to ensure a seamless and efficient checkout process for customers. For example, if a site needs to validate inventory levels in real-time to ensure that items are available before completing a purchase, then real-time provisioning may be necessary.

Resource pooling is a key feature of cloud computing that allows for the efficient allocation and utilization of resources, such as computing power and storage, among multiple users. This can be especially beneficial for e-commerce sites, which may experience spikes in traffic and resource demands during busy periods, such as holidays or promotional events.

Literature Review:

Platforms offered by cloud computing aid in real-time testing and the creation of IT-enabled resources. They make sure the resources with IT capabilities are prepared to be utilised to provide services. These services are not all pricey and are supplied at low prices. In order to create the finest solutions, firms can then design scalable and flexible IT goods or services. But there are number of factors that can influence the adoption of cloud computing including performance, trust, security, cost, and energy consumption.

Best Streaming platforms like Netflix uses AWS services for functioning. With cloud user can access services from Anywhere across the globe. Every minute, these applications allow millions of end-users to connect simultaneously and; on a real-time basis it provides an interface to collaborate. They enable the end-users to share videos, images, stories, and experience. Providing high availability and uptime, makes it reliable. Automation and real time provisioning provides faster data access with low latency. Heavy traffic on website or large payment loads can be handled efficiently with cloud.

E-commerce websites and cloud technology have the potential to bring significant changes to the healthcare sector in a number of ways-

Increased Access to Healthcare: E-commerce websites and cloud technology make it possible for patients to access healthcare services remotely, regardless of their location. This can increase access to healthcare for people in rural or remote areas, and for those who have mobility issues.

Improved Efficiency: Cloud technology can be used to store, manage and share electronic health records (EHRs) and other medical information. This can improve the efficiency and accuracy of healthcare delivery by making it easy for doctors and specialists to access patient information and collaborate with one another.

Cost Savings: E-commerce websites and cloud technology can help reduce the costs of healthcare by streamlining operations and reducing the need for expensive physical infrastructure.

Personalized Care: E-commerce websites and cloud technology can enable the collection and analysis of large amounts of data, which can be used to provide more personalized care to patients.

Improved Health Outcomes: By making healthcare more accessible and efficient, e-commerce websites and cloud technology have the potential to improve health outcomes for patients.

Telemedicine: With the help of e-commerce and cloud technology, telemedicine has become a reality and is growing in popularity. Patients can have virtual consultations with doctors and specialists, eliminating the need for in-person visits.

Some e-commerce web applications can be based on serverless computing. Serverless computing enables the development and deployment of applications without the need to manage infrastructure as the cloud provider manages the servers.

FLOWCHART:

Define requirements: login and browse through catalogue of products to search as per requirements.

Choose a technology stack that fits your requirements, including a programming language, framework, database, and hosting platform.

Design the architecture of your web application, including the overall frontend, data model, API endpoints etc.

Implement the core functionality of your web application, including the product catalogue, shopping cart, payment processing, and order management.

Implement user authentication and authorization to ensure that only authorized users can access sensitive information and perform certain actions.

Add any additional features that you need, such as product search, customer reviews, and product recommendations.

Thoroughly test and debug your web application to ensure that it works correctly and meets your requirements.

Deploy the web application through AWS to make it accessible to users.

Monitor the performance and security of your web application and make any necessary updates to ensure its ongoing stability and security.