

EkhushBD: Transforming Bangladeshi E-Commerce Landscape with Innovation

Abstract

The e-commerce industry is booming in Bangladesh, and there is a growing demand for more advanced features and functionalities that enhance user experience and increase sales. This paper presents an analysis of some key ideas that are not currently available in the e-commerce platforms in Bangladesh. These ideas include bidding on a product, augmented reality, virtual try-on, voice search and more. We discuss the potential benefits of these ideas and their impact on the e-commerce industry in Bangladesh. We also examine the challenges and limitations of implementing these features and propose some possible solutions.

Scope

Analysis of Key Ideas: Provide an in-depth analysis of some key ideas that are not currently available in the e-commerce platforms in Bangladesh. These ideas include bidding on a product, augmented reality, virtual try-on, voice search, and more.

1. **Potential Benefits:** Investigate the potential benefits of adopting advanced features in the e-commerce industry in Bangladesh, such as enhanced user experience, increased sales, and improved competitiveness.
2. **Challenges and Limitations:** Examine the challenges and limitations of implementing these features in the e-commerce industry in Bangladesh, such as technical issues, user adoption, and regulatory issues.
3. **Customer Perception:** Conduct a survey among e-commerce customers in Bangladesh to understand their perceptions of these features and their willingness to use them.
4. **Recommendations:** Provide recommendations for e-commerce companies and policymakers in Bangladesh on how to overcome the challenges and capitalize on the opportunities presented by these advanced features.

Vision

1. Contribute to the development of a more sophisticated e-commerce system in Bangladesh.
2. Enhance user experience and increase sales in the e-commerce industry. Provide useful insights and recommendations for stakeholders in the e-commerce industry, including e-commerce companies, policymakers, and researchers.
3. Help Bangladesh become a more digitally advanced country by leveraging the potential of e-commerce to drive economic growth, create jobs, and improve the lives of its citizens.
4. Inform the development of policies and strategies that can support the growth of the e-commerce industry in Bangladesh and promote the adoption of advanced features.

Software Specification Fixation Through Appropriate Steps

Information Gathering

In this step, we did comprehensive domain study for our topic. In terms of gathering information, we've gone through Research Papers from Conferences and Journals, expert interviews, did market analysis, went through online websites etc.

Analysis

For finding out the current status of E-Commerce domain in both Bangladesh and Foreign countries, we've done comprehensive studies on more than 10 existing E-Commerce platforms. By going through each of them, we find out their pros and cons and then compared our suggested model with their ones.

Gap Analysis

By studying both local and foreign E-commerce market, and doing comprehensive domain study, we found out some of the gaps that current E-commerce market, more specifically local E-commerce platforms have. The findings are documented below:

- E-commerce platforms in Bangladesh face challenges in securing funding for growth and expansion.
- Establishing credibility and consumer trust is a significant hurdle.
- Investment in warehousing and infrastructure is necessary for better product management and delivery.
- Lack of trained human resources is a problem for managing e-commerce platforms on a large scale.
- Inexperienced merchants and their issues with digital operations are a lagging point.
- Proper marketing and partnerships are essential for successful promotion.
- The scale of data management and security is a challenge for e-commerce platforms.
- Lack of investment in data analysis can hinder business efficiency and accurate forecasting.

Feature List Fixation

After proper domain study, we've fixed what our feature list will be for our proposed model. We've focused on only the value adding features for E-Commerce platform in our model, and accordingly, the functional requirements and non-functional requirements are documented in the next sub-sections.

Functional Requirements

Name	FR-1: Virtual Try On
Summary	Users can scan the QR code from the website and then using AR, they can do virtual try on of any specific products.
Rationale	Virtual try on is a must feature because user can have a crystal-clear idea about how the product will look like after purchasing with the help of AR.
Requirements	On the website, there will be an option of scanning QR code. When the QR code is scanned by a phone, Google's ARCore is implemented, then automatically using AR, the phone camera will be used to do virtual try on, on a specific product. If the user like the product after the try on, they can go for product purchasing.
References	Use case diagram of EkushBD

Name	FR-2: Bidding Products
Summary	Merchants will set the starting bid of a product, then based on that buyers will place their own bids.
Rationale	Bidding is an interesting feature because for rare items, merchants can get the maximum amount of earnings based on the bids.
Requirements	On the website, the minimum or starting bid for a particular product will be set by the merchant. Then, a particular time will be given for bidding, and users will place their own comfortable bids. When the time is up, usually the user having the maximum bidding amount will get the product and have to pay the bidding price. However, the merchant has to accept the bid request. Also, an option will be there to negotiate with other users who will place bid for the same product.
References	Use case diagram of EkushBD

Name	FR-3: Voice Search
Summary	Users can search for their preferred products using voice search feature which basically converts speech to text in order to do searching.
Rationale	Voice search is an essential feature for this age of AI as people are now more used to modern/automatic features rather than doing things manually. In this way, the searching mechanism gets more convenient for user end.
Requirements	On the website, if user wants to search for a product, rather than typing the product name to search, they can click the mic button on the screen which will enable the voice search feature. Their speech will be then converted into text using Google's Speech to text API, then the product is searched on the website and if found, the results are shown accordingly.
References	Use case diagram of EkushBD

Name	FR-4: AI Chatbot
Summary	Users can take help from our personalized AI chatbot regarding any queries of order placement, after-order support and more.
Rationale	AI based chatbot is essential in the age of AI as most of the queries that customers have are common in kind and the solution therefore is also common. Often AI can deal with these kinds of problems efficiently and thus human involvement isn't required. So, we have trained our AI model in such way that it can handle most of the cases without human involvement, making the overall process more automated and easier for user end.
Requirements	On the website, there will be a option to talk with the AI chatbot. If the user wants to get help from it, they can talk with the chatbot and ask questions and the chatbot will give human-like reply to the users. For most of the questions, the chatbot itself can give the most effective solution. However, in such cases where the users need to talk with the customer care agent himself, the chatbot can assist the user by giving their contact details.
References	Use case diagram of EkushBD

Non Functional Requirements

Performance

- a. The e-commerce web application should **support up to 10,000 concurrent users**. This implies that the system must be **designed to handle a high number of simultaneous connections**, ensuring a seamless user experience without any noticeable degradation in performance.
- b. The **average page load time should not exceed 2 seconds** under normal load conditions. This includes time taken for server processing, data fetching, and rendering on the client side. To achieve this, **the application should leverage caching, efficient database queries, and optimized front-end assets**.
- c. The response time for **database queries should not exceed 100 milliseconds**. This can be achieved through **efficient database design, indexing, and query optimization**.

Scalability

- a. The system should be **capable of scaling horizontally to accommodate increased traffic**. This means adding more instances of the application or services to handle the growing number of requests, without significant changes to the application architecture.
- b. The system **should automatically scale up/down based on traffic patterns using auto-scaling features** provided by cloud infrastructure. This will involve monitoring key performance indicators (KPIs) like CPU and memory usage and adjusting the number of instances accordingly to maintain optimal performance.

Availability

- a. **The e-commerce web application should have an uptime of at least 99.9%**. This translates to less than 9 hours of downtime per year. Achieving this level of availability **requires a well-designed architecture, redundancy at all levels** (such as using multiple availability zones), **and robust monitoring and alerting systems**.
- b. The system **should be fault-tolerant and resilient to hardware failures and network outages**. This can be **achieved by implementing redundancy, failover mechanisms, and distributed systems design principles** to minimize the impact of any single point of failure.

Security

- a. The application **should be compliant with industry-standard security practices**, such as OWASP Top Ten (Open Web Application Security Protocol). This includes **protection against common security threats like SQL injection, cross-site scripting (XSS)**, and insecure direct object references.
- b. All sensitive data, including user information and payment details, must be encrypted at rest and in transit. This can be achieved by using encryption algorithms like AES-256 for data at rest and SSL/TLS for data in transit.
- c. Regular security audits should be conducted to identify potential vulnerabilities and address them accordingly. This includes penetration testing, code reviews, and infrastructure vulnerability scans.

Maintainability

- a. The codebase should **follow best practices in terms of modularity, readability, and commenting**. This includes **following established coding standards, writing self-explanatory code, and adding comments for complex logic** or non-obvious design decisions.
- b. The system **should be designed to allow for easy updates and feature additions** without causing downtime. This can be **achieved through modular architecture, feature toggles, and adherence to best practices for continuous integration and deployment (CI/CD)**.

Usability

- a. The **user interface should be intuitive and easy to navigate**. This includes providing clear visual hierarchy, consistent design patterns, and well-structured information architecture to guide users effortlessly through the application.
- b. The application **should be accessible to users with disabilities, adhering to WCAG 2.1 guidelines (Web Content Accessibility Guidelines)**. This includes **providing alternative text for images, ensuring proper color contrast, and implementing keyboard navigation support**, among other accessibility features.

Hardware requirements

Web Server (with options for auto-scaling)

- a. Instance type: General-purpose instance, such as Amazon EC2 t3.medium, with a minimum of **2 vCPUs (virtual cores)**.
- b. **RAM: 8 GB or higher**.
- c. **Storage: 250 GB Amazon EBS (Elastic Block Store) SSD** or equivalent AWS storage solution. Additional EBS volumes can be attached for increased storage capacity or performance.

Database Server (with options for auto-scaling)

- a. Instance type: Memory-optimized instance, such as Amazon RDS db.r5.large, with a minimum of **4 vCPUs (virtual cores)**.
- b. **RAM: 16 GB or higher**.
- c. **Storage: 500 GB Amazon EBS (Elastic Block Store) SSD** or equivalent AWS storage solution. Consider using Amazon RDS's storage auto-scaling feature to automatically increase storage capacity as needed.

Load Balancer

- a. AWS Elastic Load Balancing service (Application Load Balancer or Network Load Balancer) capable of handling the expected traffic load and distributing it evenly across available server instances. Configure health checks to monitor the health of backend instances and route traffic only to healthy instances.

Networking

- High-speed internet connectivity with a minimum bandwidth of 1 Gbps, provided by AWS data centers.
- AWS Security Groups and Network ACLs** to protect the infrastructure, with rules configured to allow only necessary traffic. Consider using **AWS VPCs (Virtual Private Clouds)** to isolate different parts of the application and control traffic flow between them.

Backup & Recovery

- Regular backup of data to **Amazon S3** or another AWS storage service for disaster recovery. AWS Backup service can be used to automate this process and manage backups across AWS services. Cross-region replication for additional redundancy and to minimize data loss in the event of a region-wide outage.

System Architecture

A system architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

Client-Server Architecture: Client-server architecture is a model used in computer networks where a centralized server provides services and resources to multiple clients. Clients are devices or applications that access the resources and services provided by the server.

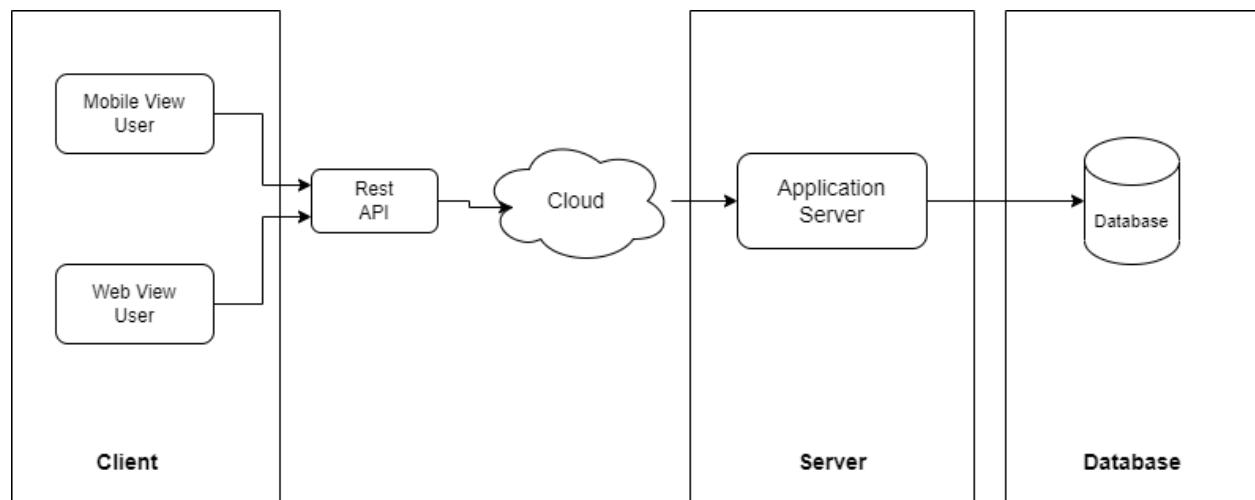


Fig: Client-Server Architecture.

1. Server: The server is a powerful computer or a cluster of computers that store data, manage resources, and provide services to clients. It is **responsible for processing client requests, managing data, and coordinating communication** between clients and other servers if necessary. Servers can be specialized for specific tasks, such as file servers, database servers, web servers, email servers, etc.

2. Clients: Clients are devices or applications that access the resources and services provided by the server. **Clients can be desktop computers, laptops, mobile devices, or other servers.** **Clients send requests to the server for data, services, or resources, and receive responses from the server.** Clients can have different roles, such as end-user clients, which interact directly with users, or intermediate clients, such as proxy servers, which handle requests on behalf of other clients.

3. Communication: Clients and servers communicate with each other over a network using a communication protocol. Common communication protocols used in client-server architecture include **HTTP** (Hypertext Transfer Protocol) for web-based applications, **SMTP** (Simple Mail Transfer Protocol) for email, and **TCP/IP** (Transmission Control Protocol/Internet Protocol) for general networking.

4. Scalability: Client-server architecture allows for scalability, as servers can **handle multiple client requests concurrently.** As the number of clients increases, servers can be upgraded or additional servers can be added to the system to distribute the load and ensure efficient processing of requests.

5. Security: Client-server architecture requires careful consideration of security measures, as the server stores and manages sensitive data and resources. Security mechanisms such as authentication, authorization, and encryption are used to protect data and ensure secure communication between clients and the server.

6. Reliability: Client-server architecture can provide high reliability, as servers can be designed with redundant components, **backup systems**, and **fault-tolerant configurations** to ensure continuous operation even in the presence of hardware failures.

7. Flexibility: Client-server architecture allows for flexibility in terms of clients and services. Clients can be developed independently of the server, and **new clients can be added or removed** from the system without affecting the server's functionality. Similarly, new services can be added to the server without modifying the existing clients.

Merchant-Server Architecture: Merchant server architecture is a specific type of client-server architecture that is used in e-commerce or online payment systems. It involves the interaction between merchants (sellers) and servers (payment processors or financial institutions) to facilitate secure online transactions.

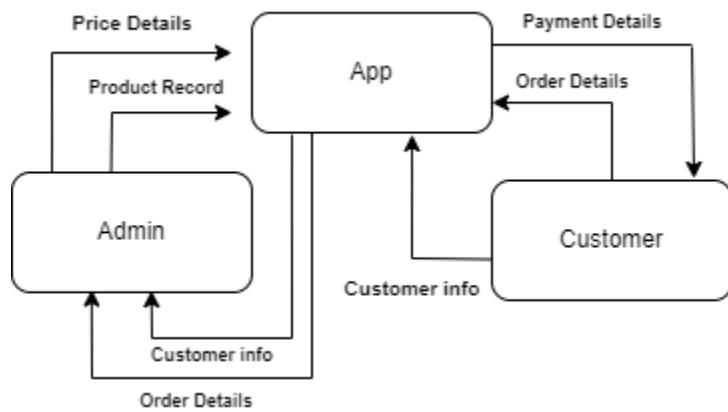


Fig: Merchant-Server Architecture.

1. Merchants: Merchants are sellers or businesses that offer products or services for sale online. Merchants typically have a website or an online store where customers can browse and purchase items. Merchants initiate the online transaction process by sending transaction requests to the payment processor or financial institution through the merchant server.

2. Payment Processor or Financial Institution: The payment processor or financial institution is the server that handles the processing of online transactions on behalf of the merchants. This server receives transaction requests from the merchant server and processes them to authorize, authenticate, and settle payments. It may also handle other tasks such as fraud detection, currency conversion, and transaction reconciliation.

3. Payment Gateway: The payment gateway is a software or service that connects the merchant server to the payment processor or financial institution. It handles the communication between the merchant server and the payment processor, and may also provide additional features such as transaction logging, reporting, and integration with other payment methods or services.

4. Authorization and Authentication: The payment processor or financial institution verifies the authenticity of the transaction request from the merchant server, and performs authorization checks to ensure that the transaction is valid and the customer has sufficient funds or credit to complete the purchase. This may involve authentication of the customer's identity, verification of the transaction details, and checking against fraud detection rules and databases.

5. Security: Merchant server architecture requires robust security measures to protect against unauthorized access, data breaches, and fraud. This includes encryption of sensitive data, strong authentication mechanisms, and adherence to industry standards and regulations, such as the Payment Card Industry Data Security Standard (PCI DSS).

6. Scalability and Reliability: Merchant server architecture needs to be scalable and reliable to handle high volumes of online transactions and ensure uninterrupted service. Payment processors or financial institutions typically have redundant systems, backup mechanisms, and disaster recovery plans to ensure reliability and availability.

Delivery-Server Architecture: Delivery server architecture refers to the system and infrastructure used for managing and coordinating the delivery of goods or services in logistics, transportation, or supply chain management. It involves the use of servers, software applications, communication protocols, and other components to streamline and optimize the delivery process.

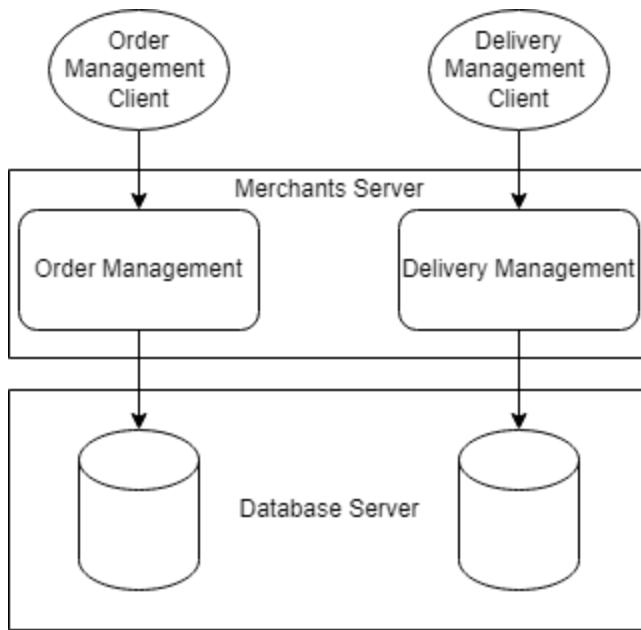


Fig: Delivery-Server Architecture.

- 1. Delivery Management:** The delivery management system is the core component of the delivery server architecture. It is a software application that facilitates the planning, scheduling, tracking, and management of deliveries. It may include features such as order management, route optimization, vehicle tracking, delivery status updates, and reporting.
- 2. Servers:** Servers are the hardware systems that host the delivery management system and other applications used in the delivery process. These servers can be physical servers or cloud-based virtual servers, and they handle the processing of delivery-related data and requests from clients, such as mobile devices, web interfaces, or other systems.
- 3. Communication Protocols:** Delivery server architecture relies on various communication protocols to enable the exchange of data and information between different components of the system. These protocols may include APIs (Application Programming Interfaces) for integration with other systems, protocols for real-time tracking and monitoring of vehicles or deliveries, and messaging protocols for communication between servers and clients.
- 4. Database:** The delivery management system typically requires a database to store and manage data related to orders, deliveries, vehicles, drivers, customers, and other relevant information. The database can be hosted on the server or in the cloud, and it is used for storing and retrieving data needed for the delivery process, such as delivery addresses, order details, and customer information.
- 5. Order Management:** The delivery management system typically includes order management features that allow for the creation, modification, and tracking of orders. This may involve receiving orders from various sources, such as e-commerce platforms or manual entry, and managing the order details, delivery addresses, delivery windows, and other order-related information.

6. Vehicle Tracking: Vehicle tracking is a critical aspect of delivery server architecture that enables real-time monitoring and tracking of delivery vehicles. It involves the use of **GPS** (Global Positioning System) or other tracking technologies to track the location, speed, and status of vehicles, and transmit this information to the delivery management system for tracking, monitoring, and reporting purposes.

7. Reporting and Analytics: Delivery server architecture may include reporting and analytics features that provide insights and analytics on various aspects of the delivery process, such as **delivery performance, driver productivity, delivery delays, customer satisfaction**, and other key performance indicators (**KPIs**). These reports and analytics help in monitoring, analyzing, and optimizing the delivery process for continuous improvement.

8. Security: Delivery server architecture requires robust security measures to protect against unauthorized access, data breaches, and other security risks. This may involve encryption of data, secure authentication and authorization mechanisms, and adherence to industry standards and regulations, such as the General Data Protection Regulation (GDPR) or other applicable regulations.

Feasibility Analysis

Feasibility analysis is the process of evaluating the practicality and potential success of a proposed project or business venture. It involves a comprehensive **review of the project's strengths, weaknesses, opportunities, and threats**, as well as an assessment of the resources needed to bring it to fruition.

There are several steps involved in a feasibility analysis, including:

1. **Market analysis:** Evaluating the demand for the product or service, the competition, and potential customers.
2. **Technical analysis:** Assessing the technical feasibility of the project, including the availability of technology and resources required to bring the project to completion.
3. **Financial analysis:** Assessing the financial viability of the project, including the costs associated with development, production, and marketing, as well as potential revenue streams and profits.
4. **Organizational analysis:** Evaluating the capabilities and resources of the organization, including personnel, equipment, and infrastructure.
5. **Legal analysis:** Assessing the legal and regulatory environment in which the project will operate, including permits, licenses, and compliance requirements.

Software Requirements and Technical Description

Software requirements for EkhushBD

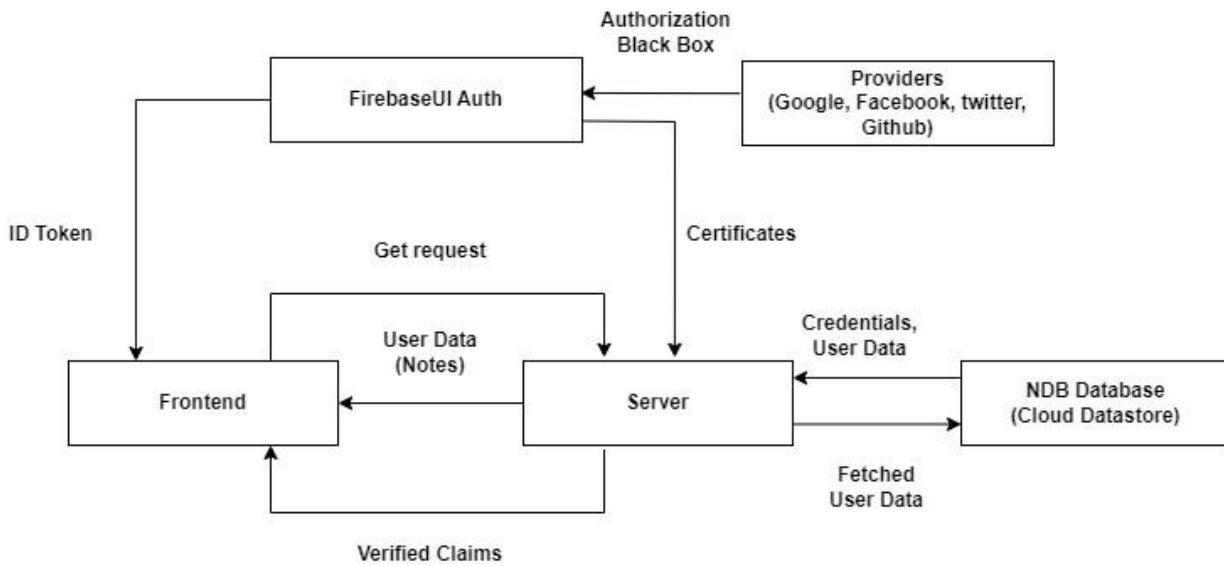
1. **Front-end Technologies:** To create an engaging and user-friendly interface, we are going to use HTML5, CSS3, and JavaScript. The framework we are going to use is React JS. As the website needs to be responsive, mobile-friendly, and usable on an array of platforms and devices.
2. **Back-end Technologies:** A reliable and scalable programming language, such as PHP, will be used in EkhushBD's back-end. We will use a scalable framework of PHP called Laravel.
3. **Database:** A database should be robust, adaptable, and reliable. We are going to use a relational database management system (RDBMS) like MySQL and will handle Chat feature by a NoSQL database like MongoDB or Firebase.
4. **Payment Gateway:** To handle online payments, the website should incorporate a secure and reliable payment gateway like PayPal, Bkash, Nagad, Upay and 30+ other gateway. For that we are going to use SSL Commerce API.
5. **Security:** To protect itself against cyberattacks, data breaches, and other security concerns. To protect user information and guarantee secure online transactions, we will employ SSL encryption, two-factor authentication, and other security measures.

Implementing User Authentication Mechanism

User authentication is very common in modern web applications. It is a security mechanism that is used to restrict unauthorized access to member-only areas and tools on a site. We will implement Firebase Authentication for User Auth Mechanism.



Firebase Auth: JavaScript version 8 API reference



Ref: <https://firebase.google.com/docs/reference/js/v8/firebase.auth.Auth>

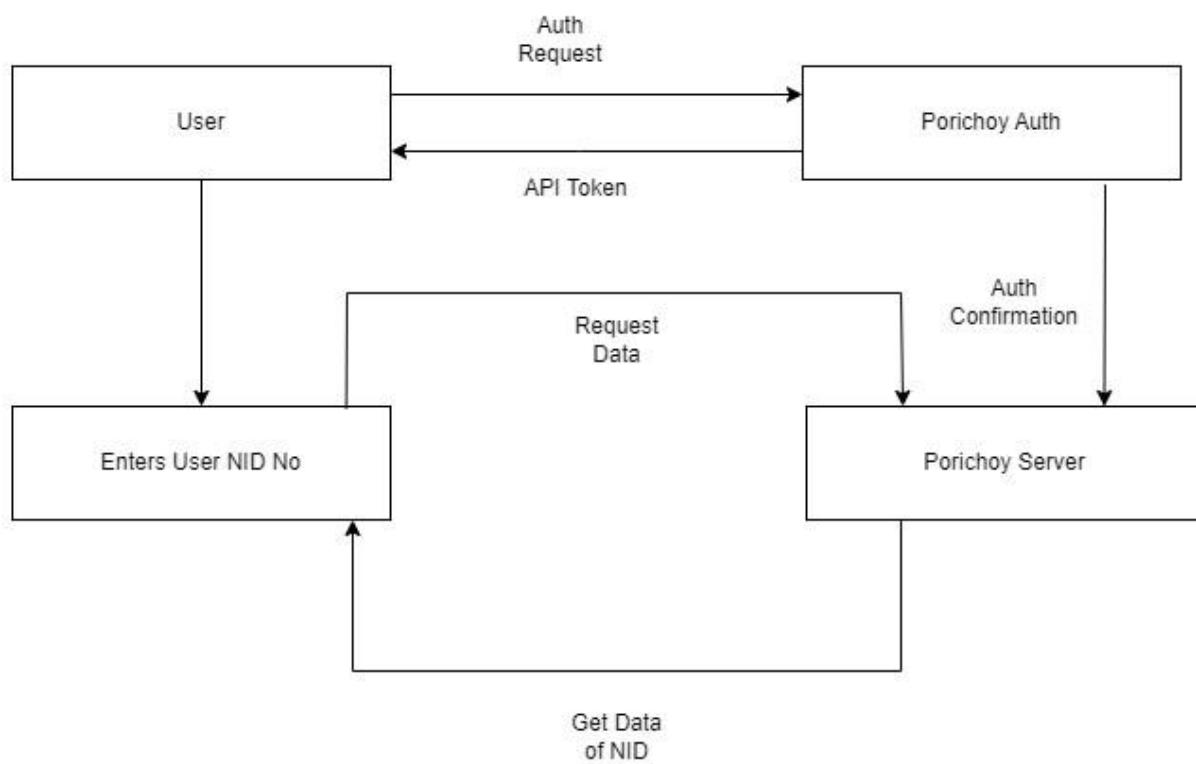
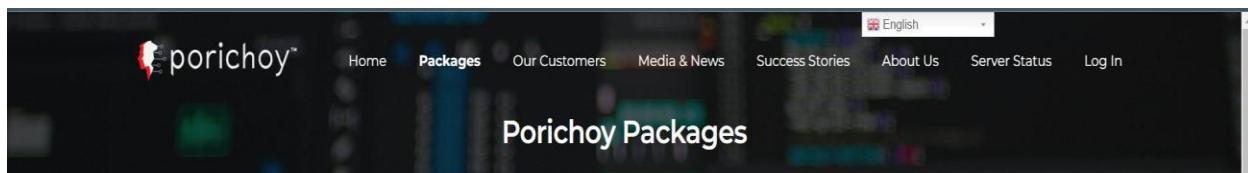
Identity Verification for Merchant and riders

To maintain authenticity, we are planning to implement a National ID Verification system for our merchant and rider panel. We will use Porichoy API.



Bangladesh's leading real-time identity verification gateway. Part of Digital Bangladesh vision and developed in a collaboration with **Bangladesh National Digital Architecture (BNDA)**, **Porichoy** will evolve to meet the growing need for E-KYC and digital onboarding solutions. We are going to select **Porichoy Autofill** package for our project it will provide:

- Get NID or Birth Registration Data
- Get original NID picture
- English translation option



Ref: <https://porichoy.gov.bd/>

Payment Gateway

We need a solid payment gateway for our ecommerce web application in terms of secured transactions. We can use SSLCOMMERZ API for that. It provides 30+ Payment Options for Your Customers.

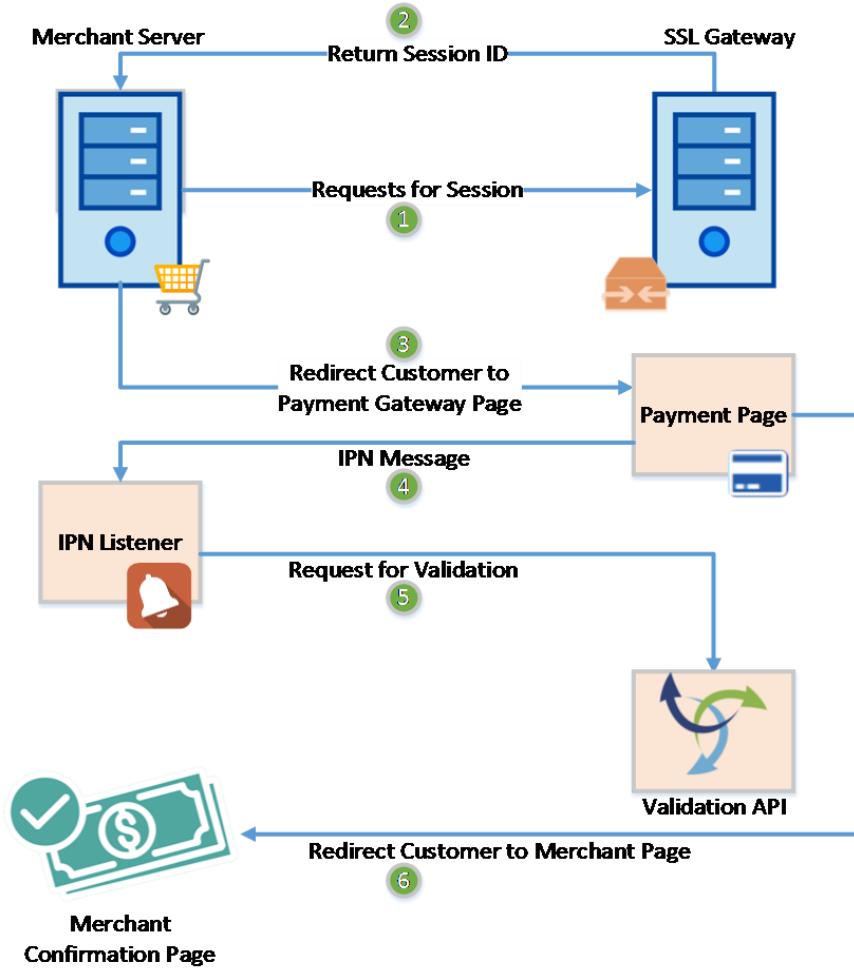


The screenshot shows the SSLCOMMERZ website's homepage. At the top, there is a navigation bar with links for Products, Developers, Support, Businesses, Blog, and Contact Us. The main headline is "30+ Payment Options for Your Customers". Below this, a sub-headline reads: "Let your customers choose from multiple payment options, anywhere, anytime with the first and the best payment gateway aggregator of the country." To the left, there is a blurred background image of a person holding a smartphone displaying various payment method icons (VISA, Mastercard, American Express, UnionPay, DBBL Nexus, etc.). To the right, there is a sidebar titled "Cards" which includes "All Debit, Credit, and Prepaid Cards" (10 Brands). Other sections listed are "Mobile Banking" (10 Brands), "Internet Banking" (10 Banks), "E-Wallets" (4 Brands), and "Easy Monthly Installments (EMI)" (22 Banks).

It provides a Simple Integration System that is readily accessible for all popular platforms and languages to immediately integrate with SSLCOMMERZ.

For both Easy Checkout or Hosted Payment Integration, the backend API communication will be executed in a similar way. Due to the security issue and to avoid data tampering, you must call the **SSLCOMMERZ APIs** from your server.

Instant Payment Notification (IPN) is a message service that notifies you of events related to PayPal transactions.



Ref: <https://sslcommerz.com/>

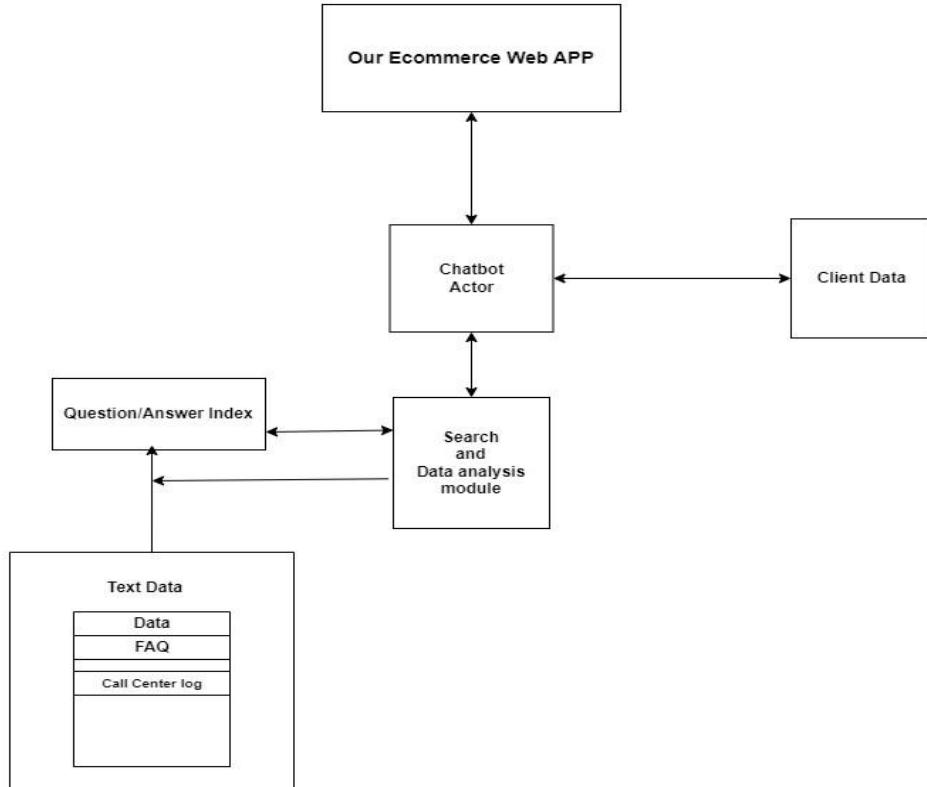
Chat Bot AI Integration

A chatbot or chatterbot is a software application used to conduct an online chat conversation via text or text-to-speech, in lieu of providing direct contact with a live human agent. We are going to implement our chat bot for our user panel. We are going to use the **Hutoma API** for our chat bot integration. lets you access and control your bots programmatically. The online demo only exposes a subset of those API but if you are standing up your own server you will be able to access to a variety of services:

- AI Management
- Intent
- Entities
- Training
- Chat
- Integrations

The API uses **Json Web Tokens (JWT)** to securely **authenticate and authorize** each request while maintaining low overhead and the ability to be used across different domains. Each developer is assigned a pair of JWT tokens, which also include in their payload the plan the developer is subscribed to. This means that if you switch plans at some stage, the tokens will change.

Here is chat bot AI integration process:



Ref: <https://github.com/hutomadotAI/web-api>

Augmented Reality Implementation



ARCore is Google's platform for building augmented reality experiences. Using different APIs, ARCore enables your phone to sense its environment, understand the world and interact with information. Some of the APIs are available across Android and iOS to enable shared AR experiences.

ARCore uses three key capabilities to integrate virtual content with the real world as seen through your phone's camera:

Motion tracking allows the phone to understand and track its position relative to the world. Environmental understanding allows the phone to detect the size and location of all type of surfaces: horizontal, vertical and angled surfaces like the ground, a coffee table or walls.

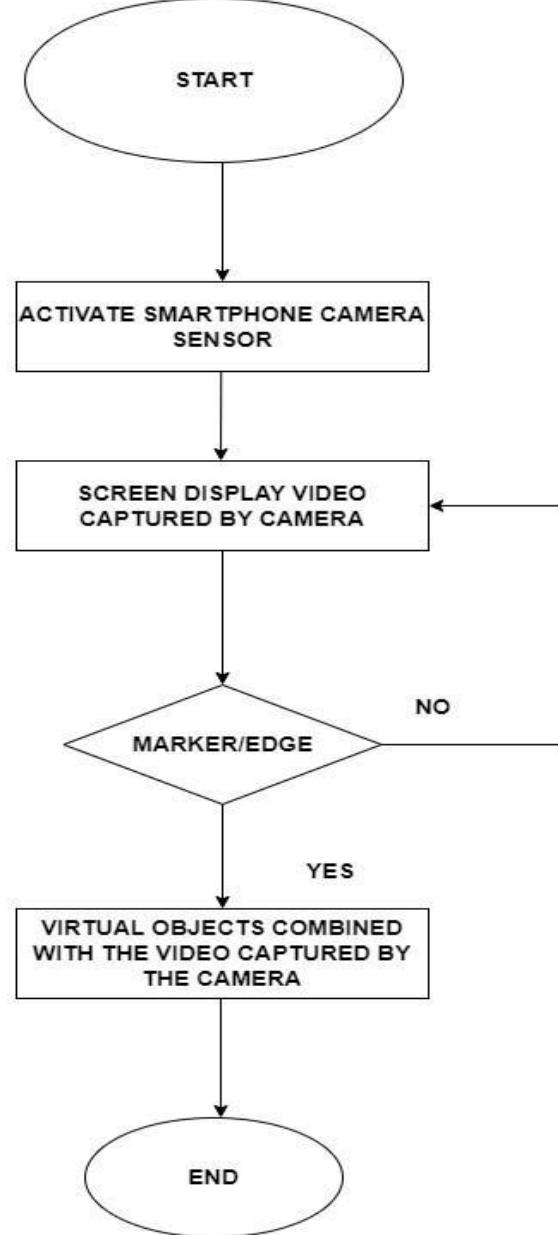
Light estimation allows the phone to estimate the environment's current lighting conditions.



ARCore uses hit testing to take an (x,y) coordinate corresponding to the phone's screen (provided by a tap or whatever other interaction you want your app to support) and projects a ray into the camera's view of the

world, returning any geometric planes or feature points that the ray intersects, along with the pose of that intersection in world space. This allows users to select or otherwise interact with objects in the environment.

Marker/Edge: Environment search for adding the virtual item!!!



Ref: <https://developers.google.com/ar/develop>

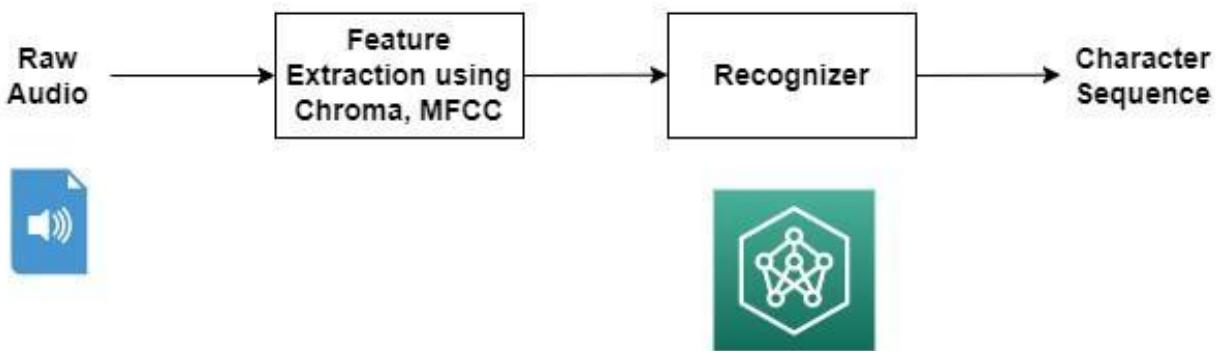
Voice Search Implementation

We are going to use a voice search feature. For that we have to take the user's speech from the mic and convert it to text and conduct the search. For that we are using **Google's Speech to text API**. It provides hints to boost the transcription accuracy of rare and domain-specific words or phrases. Use classes to automatically convert spoken numbers into addresses, years, currencies, and more.

Chroma: Information about temporal details of audio signal.

MFCC(Mel-frequency cepstral coefficients): Information about intensity or energy of audio signal.

Recognizer: Google Speech to text API. (train the machine)

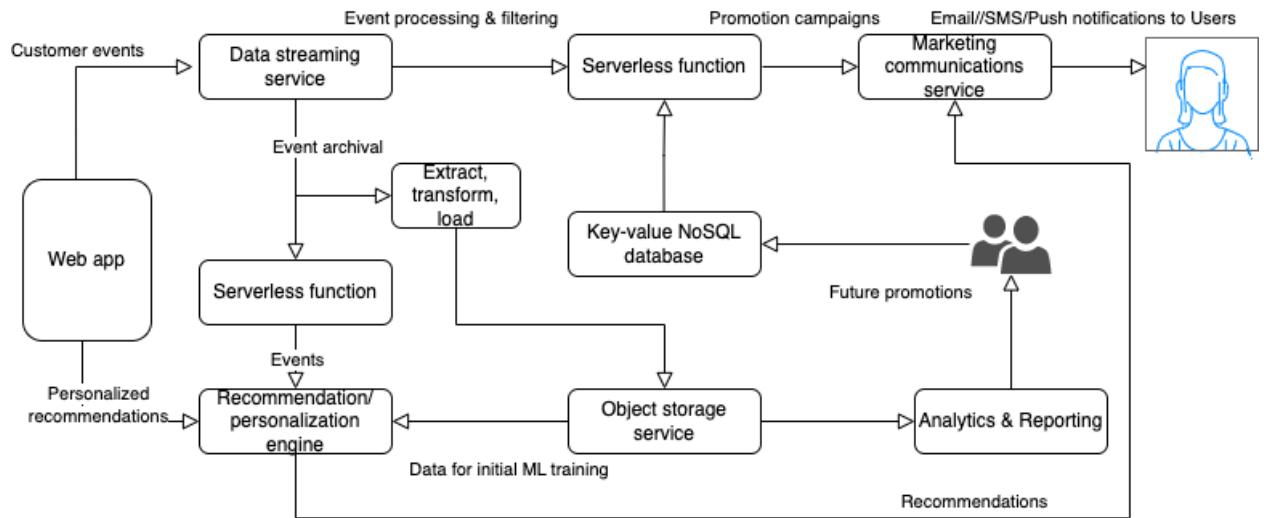


Ref: <https://cloud.google.com/speech-to-text/>

Personalized shopping experience

Our design builds upon the guidelines set by Amazon to build a custom state-of-the-art personalization engine.

To build a personalized shopping experience, we capture customers' actions/events such as browsing, searching, adding to cart, and purchasing. Online shopping makes capturing these events more scalable than in-store experiences. The proposed solution involves using Cloud services to capture customer interactions, make real-time recommendations using AI/ML services, and create an analytics platform for pattern detection and customer outreach campaigns. Figure below shows the solution architecture:



The solution being proposed is comprised of the following elements, which will be examined individually:

1. Data collection
2. Promotion campaigns
3. Recommendation engine
4. Data analytics
5. Customer reachability

Data collection

When customers use our web application, their activity is recorded as click-stream events, which can provide valuable insights into customer behavior. These insights can be used to understand browsing patterns and create promotion campaigns. As our business grows, it's important to have a durable system to handle unpredictable traffic and system failures. For this we will use cloud-based managed streaming service, e.g. Amazon Kinesis, which provides resiliency and scalability to capture an unlimited number of events. We can use Kinesis to configure applications to capture customer activity, ingest events from the frontend, and publish them to Kinesis Data Streams. Setting up Kinesis Data Streams involves capturing real-time sales transactions from online channels and using the data to build personalized recommendations for customers.

Promotion campaigns

To increase customer conversion, discounts can be offered when items are added to the cart. AWS Lambda can be used to match events based on item criteria and read up-to-date promotions stored in Amazon DynamoDB. Recent or popular promotions can be cached using Amazon DynamoDB DAX for faster application response times and improved customer experience. Promotions such as free shipping or percentage discounts can be sent to customers based on their purchase amount.

Notes:

AWS Lambda is a serverless compute service that runs our code in response to events and automatically manages the compute resources for us.

Amazon DynamoDB is a key-value and document database that delivers single-digit millisecond performance at any scale.

Amazon DynamoDB DAX is an integrated caching mechanism for DynamoDB.

Recommendation engine

To provide relevant recommendations for add-ons to customers, historical datasets must be analyzed to generate accurate predictions. Amazon Personalize is an AI/ML service that trains models based on datasets and provides real-time recommendations and recipes for generating recommendations. The frontend application calls Amazon Personalize's inference endpoints to retrieve a set of personalized recommendations based on the customer's preferences.

Amazon Kinesis Data Firehose reads data in near real-time from Amazon Kinesis Data Streams, which is collected from front-end applications. This data can be stored in Amazon S3, which acts as a single source of truth and helps scale storage. S3 data can be used to build a personalized recommendation engine with Amazon Personalize. The Amazon Personalize inference endpoint can then be called to provide personalized recommendations based on user preferences as they interact on the ecommerce platform.

Example of calling the API endpoint using Python code:

```
import boto3

import json

client = boto3.client('personalize')

# Connect to the personalize runtime for the customer recommendations

recomm_endpoint = boto3.client('personalize-runtime')

response = recomm_endpoint.get_recommendations(itemId='79323P',
                                                recommenderArn='arn:aws:personalize:us-east-1::recommender/my-items',
                                                numResults=5)

print(json.dumps(response['itemList'], indent=2))

[

    {

        "itemId": "79323W"

    },

    {

        "itemId": "79323GR"

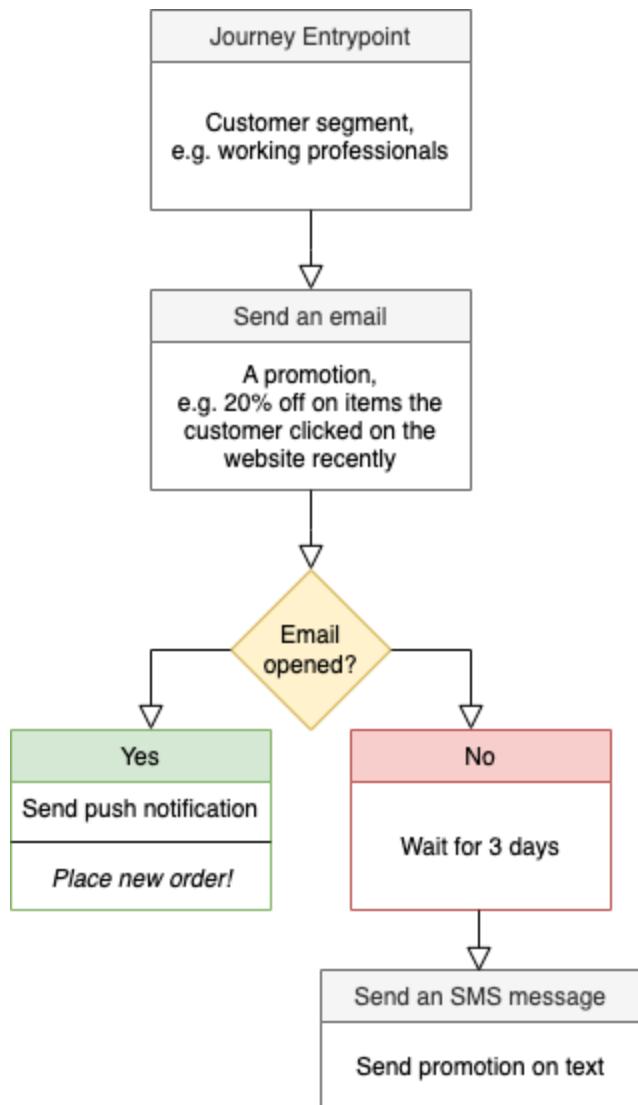
    }

]
```

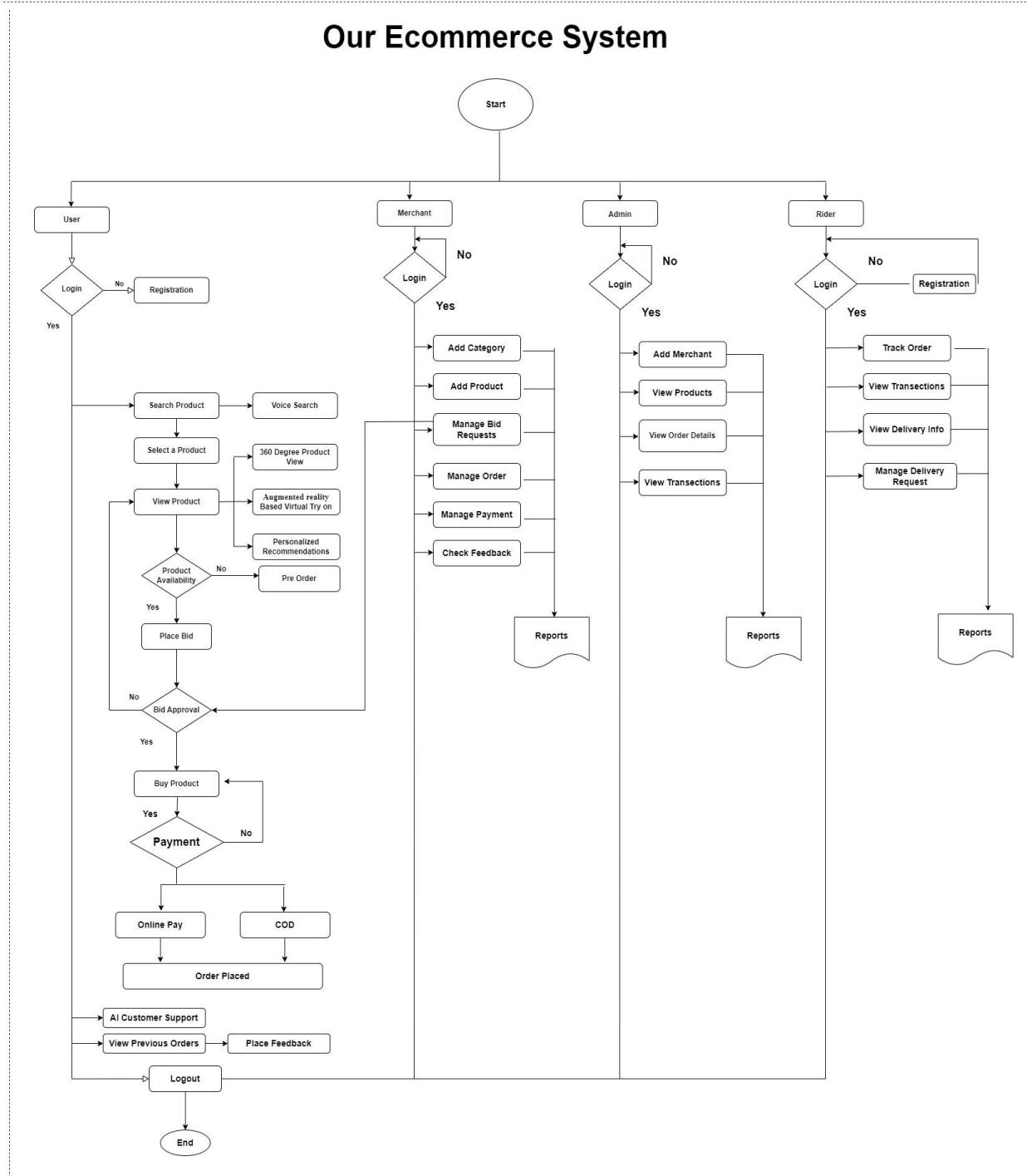
```
    },
    {
        "itemId": "79323LP"
    },
    {
        "itemId": "79323B"
    },
    {
        "itemId": "79323G"
    }
]
```

Customer reachability

Amazon Pinpoint is a marketing communications service that allows us to send outbound and inbound messages to customers using their preferred communication method. We can create audience segments, reusable content templates, and run scheduled campaigns with Amazon Pinpoint journeys. The service integrates with Amazon Personalize to provide relevant and personalized promotions. The workflow illustrated below shows how Amazon Pinpoint can be used to create a customer communication workflow for promotions, using multiple channels such as email, push notifications, and text messages.

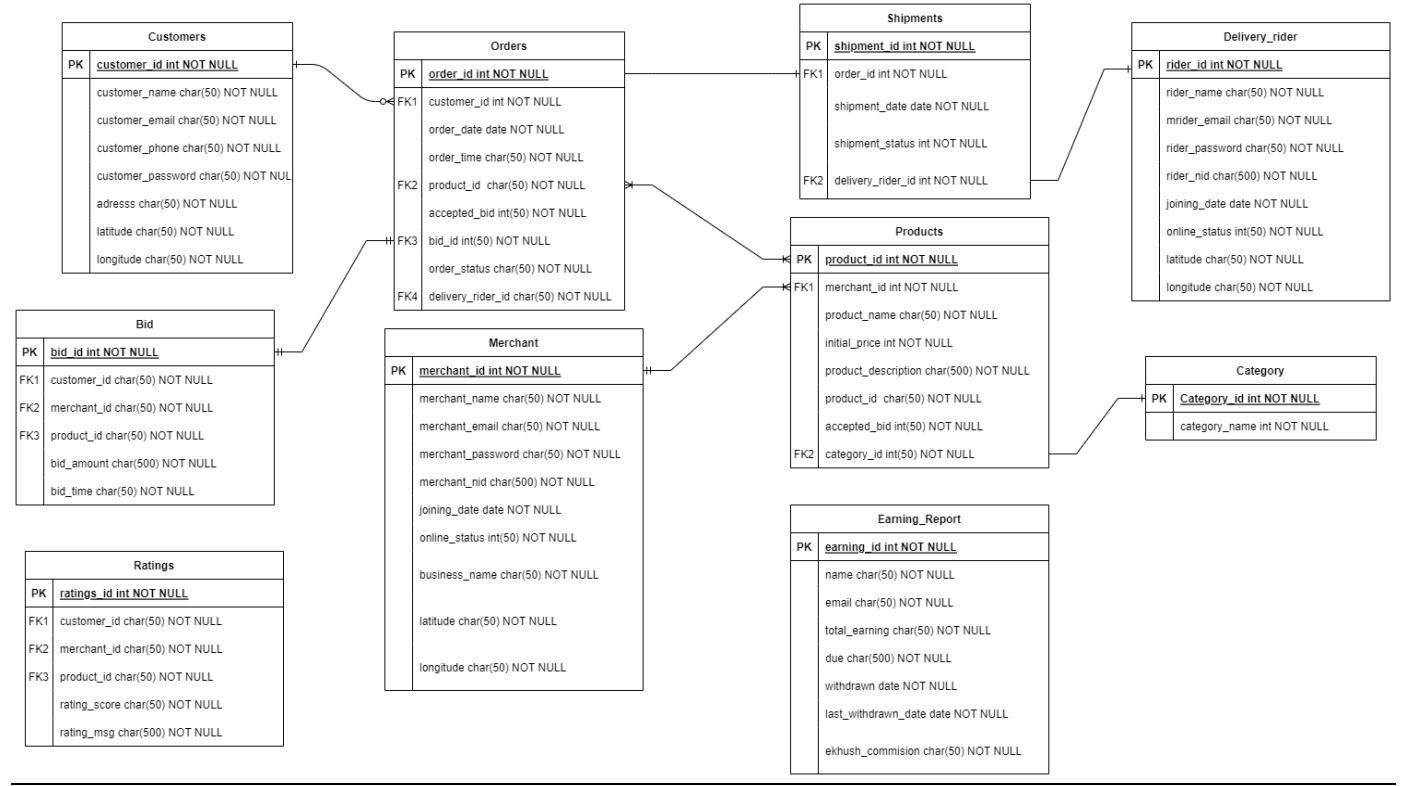


Flowchart

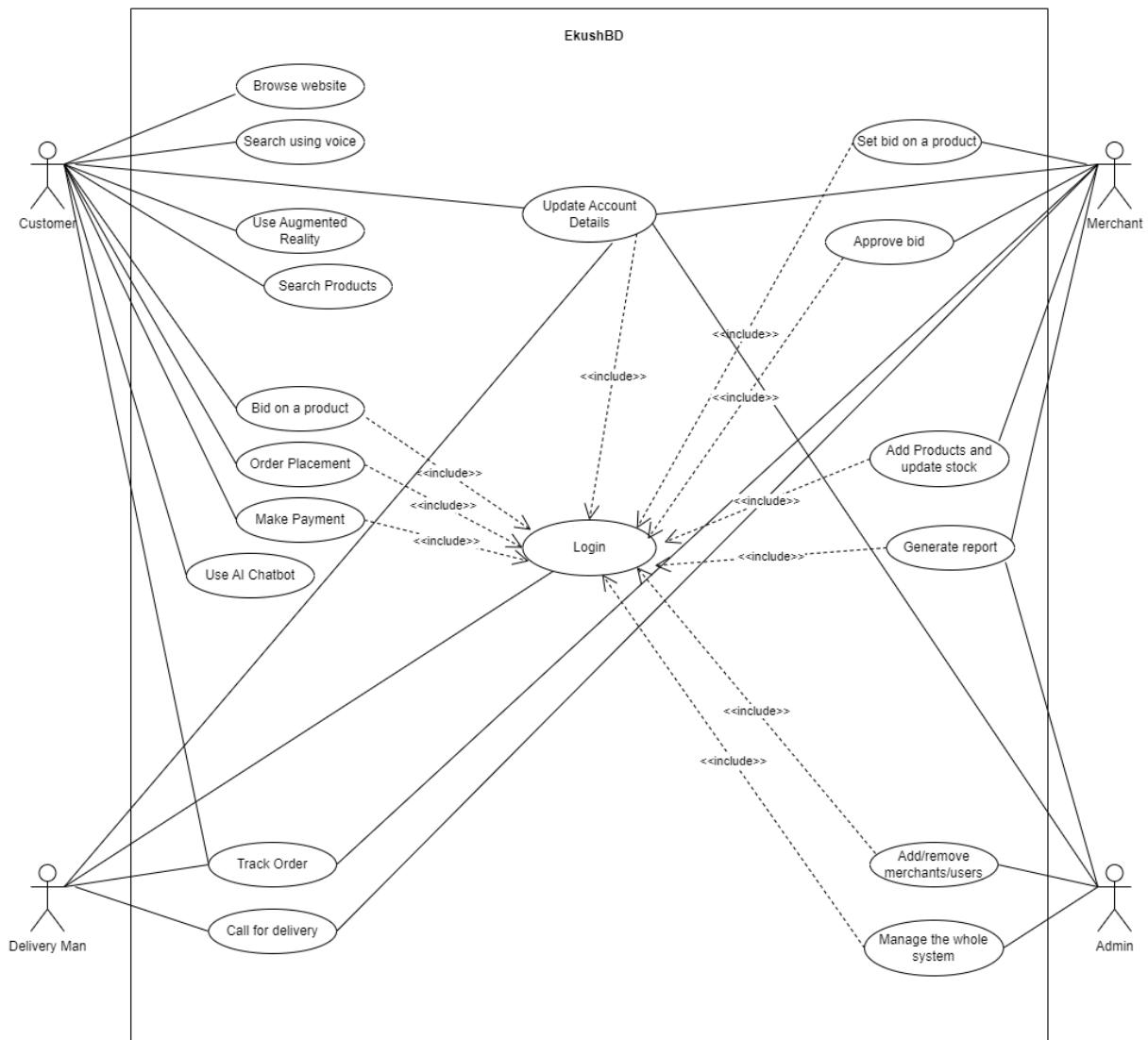


Ref: <https://asq.org/quality-resources/flowchart>

Database Design (Schema Diagram)



Use Case of EkushBD:



User Interface (Customer Panel and Delivery Rider Panel)

EkhushBD Search by products, Category, Shop....

Sign In

Jewelry & Accessories Digital products Personalized Items Women's & Girls' Fashion Health & Beauty Watches, Bags, Jewellery Men's & Boys' Fashion

LIMITED TIME OFFER
SALE
SHOP NOW
UP TO 50% OFF

Shop our popular Flash Sale See more

Wireless Bluetooth Headphone
৳ 288
Free Delivery 19 Apr - 22 Apr

Leader Jacket for Winter
৳ 7500
Free Delivery 19 Apr - 22 Apr

Featured Formal Shirt 2023
৳ 1450
Free Delivery 19 Apr - 22 Apr

G-Shock Watch RM260
৳ 28800
Free Delivery 19 Apr - 22 Apr

Montaj Kamiz Collection
৳ 1950
Free Delivery 19 Apr - 22 Apr

Montaj Kamiz Collection
৳ 3150
Free Delivery 19 Apr - 22 Apr

Shop our popular Watch Collection See more

Fitbit Smart Watch Collection
৳ 64000
Free Delivery 19 Apr - 22 Apr

G-Shock Watch RM260
৳ 28800
Free Delivery 19 Apr - 22 Apr

Apple Watch Collection
৳ 90000
Free Delivery 19 Apr - 22 Apr

IWC Watch Collection
৳ 28800
Free Delivery 19 Apr - 22 Apr

OMEGA Watch Collection
৳ 28800
Free Delivery 19 Apr - 22 Apr

LONGINES Watch Collection
৳ 12000
Free Delivery 19 Apr - 22 Apr

Shop our Men's & Boys' Fashion Collection See more

JUST TO IT T-Shirt collection
৳ 288
Free Delivery 19 Apr - 22 Apr

BLACK Jersey Collection
৳ 288
Free Delivery 19 Apr - 22 Apr

Biker Leather Jacket
৳ 2880
Free Delivery 19 Apr - 22 Apr

Informal Shirt Collection
৳ 1430
Free Delivery 19 Apr - 22 Apr

Bangladesh Map T-Shirt
৳ 288
Free Delivery 19 Apr - 22 Apr

Leather Jacket Collection
৳ 2880
Free Delivery 19 Apr - 22 Apr

Customer Care

- Help Center
- How to Buy
- Returns & Refunds
- Contact Us
- Terms & Conditions
- CCMS - Central Complain Management System

Download EkhushBD App

Welcome to EkhushBD shop, where shopping is made easy and convenient. We are a one-stop-shop for all your needs, offering a wide selection of high-quality products at competitive prices.

Contact: support@ekhushbd.com

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AI Customer Support

[SIGN IN](#) [SIGN UP](#)

Login easily with your facebook or google account



Facebook



Google

OR

Login with your email or phone number

 Email or phone Password Remember Me[Forgot Password?](#)[Sign In](#)*Don't have an account? [Sign Up Now!](#)***EkhushBD**

Welcome to EkhushBD shop, where shopping is made easy and convenient. We are a one-stop-shop for all your needs, offering a wide selection of high-quality products at competitive prices.

Customer Care

- [Help Center](#)
- [How to Buy](#)
- [Returns & Refunds](#)
- [Contact Us](#)
- [Terms & Conditions](#)
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Contact: support@ekhushbd.com



Jewelry & Accessories Digital products Personalized Items Women's & Girls' Fashion Health & Beauty Watches, Bags, Jewellery Men's & Boys' Fashion



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[See more](#)


Wireless Bluetooth Headphone
৳ 288
Free Delivery 19 Apr - 22 Apr



Leader Jacket for Winter
৳ 7500
Free Delivery 19 Apr - 22 Apr



Featured Formal Shirt 2023
৳ 1450
Free Delivery 19 Apr - 22 Apr



G-Shock Watch RM260
৳ 28800
Free Delivery 19 Apr - 22 Apr



Momtaj Kamiz Collection
৳ 1950
Free Delivery 19 Apr - 22 Apr



Momtaj Kamiz Collection
৳ 3150
Free Delivery 19 Apr - 22 Apr

Shop our popular Watch Collection

[See more](#)


Fitbit Smart Watch Collection
৳ 64000
Free Delivery 19 Apr - 22 Apr



G-Shock Watch RM260
৳ 28800
Free Delivery 19 Apr - 22 Apr



Apple Watch Collection
৳ 90000
Free Delivery 19 Apr - 22 Apr



IWC Watch Collection
৳ 28800
Free Delivery 19 Apr - 22 Apr



OMEGA Watch Collection
৳ 28800
Free Delivery 19 Apr - 22 Apr



LONGINES Watch Collection
৳ 12000
Free Delivery 19 Apr - 22 Apr

Shop our Men's & Boys' Fashion Collection

[See more](#)


JUST TO IT T-Shirt collection
৳ 288
Free Delivery 19 Apr - 22 Apr



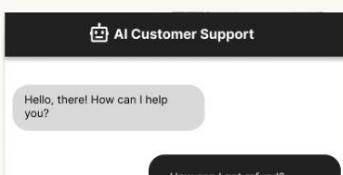
BLACK Jersey Collection
৳ 288
Free Delivery 19 Apr - 22 Apr



Biker Leather Jacket
৳ 2880
Free Delivery 19 Apr - 22 Apr



Informal Shirt Collection
৳ 1430
Free Delivery 19 Apr - 22 Apr



Hello, there! How can I help you?

How can I get refund?

To place a refund request please follow this guidelines at refund.ekhushbd.com

Do I need to keep payment receipt with me?

Yes, Sir.

Type here.....



Powered By EkhushBD.com

Customer Care

- Help Center
- How to Buy
- Returns & Refunds
- Contact Us
- Terms & Conditions
- CCMS - Central Complain Management System





G-Shock Watch RM250 - Limited Addition Watch

৳ 28800 4.7/5.0 (120 Reviews)

Short Description: The G-Shock watch is a rugged and durable timepiece designed for adventurers and athletes alike. Made by Casio, this watch boasts a variety of features to ensure that it can withstand extreme conditions and perform reliably in any situation.



Virtual Try-on available in EkhushBD App
Scan QR code from app

Place Bid

Add to Cart

Full Description: The G-Shock watch is a rugged and durable timepiece designed for adventurers and athletes alike. Made by Casio, this watch boasts a variety of features to ensure that it can withstand extreme conditions and perform reliably in any situation. One of the key features of the G-Shock watch is its shock-resistant construction. The watch is built with a durable outer shell and a protective internal structure that can withstand impact and vibration. This makes it ideal for outdoor activities such as hiking, climbing, and mountain biking. In addition to its rugged construction, the G-Shock watch is also water-resistant. It can withstand water pressure up to 200 meters, making it suitable for water sports and swimming. The watch is also equipped with a variety of timekeeping features, including a stopwatch, countdown timer, and world time function. It also features an automatic calendar, which adjusts for leap years and months with different lengths.

Live Bids ●

User	Product Id	Product	Quantity	Bid Price (BDT) per Quantity	Action
Khorshed Alam	w36p	G-Shock Watch RM250 - Limited Addition Watch	1X	৳ 36500	<button>Make Offer </button>
Abul Hasan	w36p	G-Shock Watch RM250 - Limited Addition Watch	5X	৳ 35500	<button>Make Offer </button>
Mahbubul Haq	w36p	G-Shock Watch RM250 - Limited Addition Watch	2X	৳ 34500	<button>Make Offer </button>
Jawadur Rahman	w36p	G-Shock Watch RM250 - Limited Addition Watch	3X	৳ 33500	<button>Make Offer </button>
Ashik Miah	w36p	G-Shock Watch RM250 - Limited Addition Watch	1X	৳ 32500	<button>Make Offer </button>

Customer Care

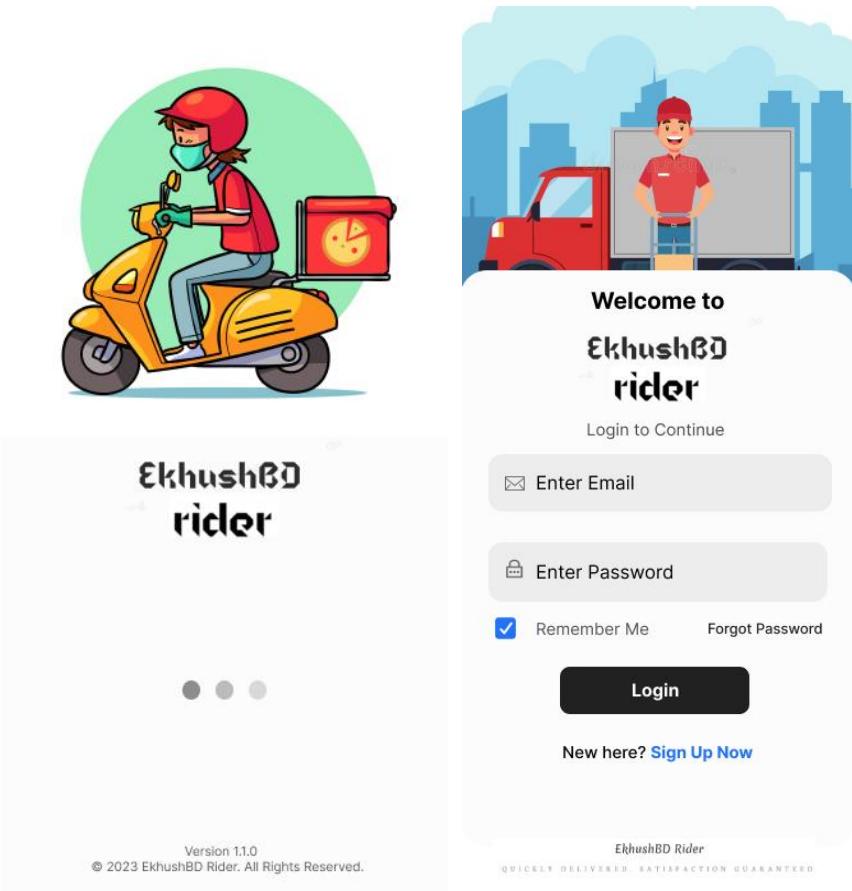
- Help Center
- How to Buy
- Returns & Refunds
- Contact Us
- Terms & Conditions
- CCMS - Central Complain Management System

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Welcome to EkhushBD shop, where shopping is made easy and convenient. We are a one-stop-shop for all your needs, offering a wide selection of high-quality products at competitive prices.

Contact: support@ekhushbd.com



[← Pending Orders](#)

Pending Orders



G-Shock Watch RM250 - Limited Addition Watch

Product Price: 23000 BDT

Delivery Charge: 120 BDT

Estimated Delivery Date: 25-04-23



G-Shock Watch RM250 - Limited Addition Watch

Product Price: 23000 BDT

Delivery Charge: 120 BDT

Estimated Delivery Date: 25-04-23



G-Shock Watch RM250 - Limited Addition Watch

Product Price: 23000 BDT

Delivery Charge: 120 BDT

Estimated Delivery Date: 25-04-23



G-Shock Watch RM250 - Limited Addition Watch

Product Price: 23000 BDT

Delivery Charge: 120 BDT

Estimated Delivery Date: 25-04-23



G-Shock Watch RM250 - Limited Addition Watch

Product Price: 23000 BDT

Delivery Charge: 120 BDT

Estimated Delivery Date: 25-04-23

Customer Details

Customer Name: Khorshed Alam

Phone: 01875974513

Address: 4761/G, Bus Terminal Link Road, Chittagong.



Deliver Parcel

Version 1.1.0
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Version 1.1.0
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The screenshot displays the EkhushBD Rider mobile application interface. At the top, there is a header section featuring a background illustration of a delivery person on a bicycle with a red basket. Below this, the user's profile information is shown: Md Karim Chowdhury (Delivery Person), with an email address k.chy@gmail.com and a phone number 018XXXXXXXX. A circular profile picture of the rider is also present.

Below the profile, there are three main statistics: Pending Order (2), My Earnings (₹ 2436), and Delivered Order (16). A horizontal line separates this from the 'Overview' section.

The 'Overview' section contains four cards:

- Pending Order (2)
- Delivered Order (16)
- Delivery History (20)
- Earning Report (₹ 2436)

At the bottom of the screen, two copyright notices are visible: "Version 1.1.0 © 2023 EkhushBD Rider. All Rights Reserved." on the left and "Version 1.1.0 © 2023 EkhushBD Rider. All Rights Reserved." on the right.

A vertical sidebar menu is located on the right side of the screen, listing the following options:

- Home
- Pending Orders
- Delivered Orders
- Earning Report
- Settings
- Privacy
- Notification
- Log out

← Earning Report

My Earnings

Begin Up to 2023/04/29

Last Updated 5:00 PM. Today

**Total Orders
20**

**Total Earned
2436 BDT**

**Withdrawn
2000 BDT**

**Due
436 BDT**

**EkhushBD Commision
7%**

Enter Amount Ex. 500

SEND PAYMENT REQUEST

DOWNLOAD REPORT

Version 1.1.0
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User Interface (Merchant Panel)



-  Dashboard
-  Pending order
-  Bid Request
-  Earning

Pending order

Top Orders

ID	PRODUCT	QUANTITY
AKL459	GM B2100GD 9A.	5
OCL321	H2000-1B.	6
LOW111	CASIO. A168XES-1BVT.	4
VIM912	Nike Air Force 1	3
JHK887	Air Max.	9
NDM984	Air Jordan 1 'Black Toe'.	3

Delivered Order

Top Orders

ID	PRODUCT	QUANTITY
DDS256	Adidas Gazelle	4
LLC125	Ecstasy	7
RET414	Nizza	6
VTE211	EQT Vapor	4
KEL582	Sneaker 'denim Noir'	3
NOP683	Louis Vuitton Tactic	9

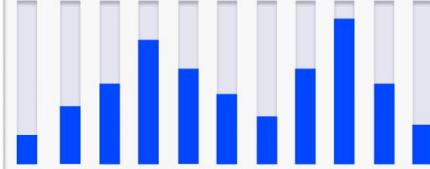
Confirmed Order

Top Orders

ID	PRODUCT	QUANTITY
GHJ215	Acer Predator X25	9
EEC665	Alienware AW2523HF	6
JOW111	ASUS ROG Swift 360Hz	3
OIM912	MSI Oculux NXG253R.	3
PHK887	Samsung LS32BG852	2
LDM984	ViewSonic XG2431	3

Earnings

Balance **৳ 18,056.36** Past 1 year



Bid Requests

Products	Quantity	Top Bidder	Email of Bidder	Bid Price	Date	Time(GMT+6)
MSI Oculux NXG253R.	5	MR. Jawad	Jawad@nbd.com	৳ 150000	19-4-23	12:55 pm
Nike Air Force 1	4	MR. Fahim	Fahim@nbd.com	৳ 40000	9-3-23	2:10 am
EQT Vapor	12	MR. Khorshed	Khorshed@nbd.com	৳ 48000	29-3-23	1:11 pm
Alienware AW2523HF	3	MR. Mahbub	Mahbub@nbd.com	৳ 60000	13-2-23	2:07 am
Nizza	6	MR. Ashik	Ashik@nbd.com	৳ 180000	15-2-23	6:15 pm
GM-B2100GD-9A.	7	MR. Don	Don@nbd.com	৳ 389060	30-4-23	9:19 am

38



Dashboard

Pending order

Bid Request

Earning

Order ID	Product Name	Quantity	Price	Ordered By	Delivery Person	Accept/Reject
AKL459	GM B2100GD 9A.	3	45000	khorshed	Select	Rejected
969SLW	H2000-1B.	2	14000	Sam	Fahim	Accepted
BB7L2V	CASIO. A168XES-1BVT.	6	18800	Mubin	Select	Rejected
GTVG31	Nike Air Force 1	5	66100	Fahim	Khorshed	Accepted
37JBEA	Air Max.	4	61000	Jawad	Select	Rejected
WQJWJK	Air Jordan 1 'Black Toe'.	2	19000	Ashik	Mahbub	Accepted
FYWKJ2	Adidas Gazelle	3	19000	Mahbub	Select	Rejected
PI2FYG	Ecstasy	1	1880	Nayim	Jawad	Accepted
NKNG1E	Nizza	5	91000	Shakila	Select	Rejected
7ZNNZV	EQT Vapor	3	69000	Harun	Fahim	Accepted
9UGG2Z	Sneaker 'denim Noir'	7	15500	Ummay Habiba	Select	Rejected
BY7PQA	Louis Vuitton Tactic	4	111600	Morshed	Jawad	Accepted
L8DMS5	Acer Predator X25	2	165000	Shuvash	Select	Rejected
LSQIXU	Alienware AW2523HF	2	185000	Kazi Nazrul	Ashik	Accepted
N08J90	ASUS ROG Swift 360Hz	5	510000	Robi Thakur	Select	Rejected
YHGALX	MSI Oculux NXG253R.	3	250000	Jibonanondo	Mahbub	Accepted

Show More



Dashboard

Pending order

Bid Request

Earning

Order ID	Product Name	Quantity	Bid Price	Bid By	Accept	Reject
----------	--------------	----------	-----------	--------	--------	--------

Auto Select Highest Bid For This Product

BB7L2V	CASIO. A168XES-1BVT.	6	18800	Khorshed	Accepted	Reject
--------	----------------------	---	-------	----------	--	--

TG3QRX	CASIO. A168XES-1BVT.	4	17700	Ashik	Accept	Rejected
--------	----------------------	---	-------	-------	--	--

N6KY4D	CASIO. A168XES-1BVT.	5	18000	Jawad	Accept	Rejected
--------	----------------------	---	-------	-------	--	--

ZA95KT	CASIO. A168XES-1BVT.	4	15000	Mahbub	Accept	Rejected
--------	----------------------	---	-------	--------	--	--

Auto Select Highest Bid For This Product

TG3QRX	Nike Air Force 1	4	17700	Sam	Accept	Rejected
--------	------------------	---	-------	-----	--	--

BB7L2V	Nike Air Force 1	6	14800	Fahim	Accepted	Reject
--------	------------------	---	-------	-------	--	--

N6KY4D	Nike Air Force 1	5	18000	Riad	Accept	Rejected
--------	------------------	---	-------	------	--	--

ZA95KT	Nike Air Force 1	4	15000	Miraj	Accept	Rejected
--------	------------------	---	-------	-------	--	--

Auto Select Highest Bid For This Product

N6KY4D	Acer Predator X25	5	180000	Sayim	Accept	Rejected
--------	-------------------	---	--------	-------	--	--

TG3QRX	Acer Predator X25	4	177000	Nayim	Accept	Rejected
--------	-------------------	---	--------	-------	--	--

BB7L2V	Acer Predator X25	6	250000	Kaium	Accepted	Reject
--------	-------------------	---	--------	-------	--	--

ZA95KT	Acer Predator X25	4	150000	Jenny	Accept	Rejected
--------	-------------------	---	--------	-------	--	--

Auto Select Highest Bid For This Product

N6KY4D	ASUS ROG Swift 360Hz	5	1800000	Ketty	Accept	Rejected
--------	----------------------	---	---------	-------	--	--

TG3QRX	ASUS ROG Swift 360Hz	4	1770000	Leion	Accept	Rejected
--------	----------------------	---	---------	-------	--	--

BB7L2V	ASUS ROG Swift 360Hz	6	2500000	Fuad	Accepted	Reject
--------	----------------------	---	---------	------	--	--

ZA95KT	ASUS ROG Swift 360Hz	4	1500000	Luffy	Accept	Rejected
--------	----------------------	---	---------	-------	--	--

Show More



Dashboard

Pending order

Bid Request

Earning

5890

Total Units Sold

925,2075

Total Earning

505890

Total Profit

275890

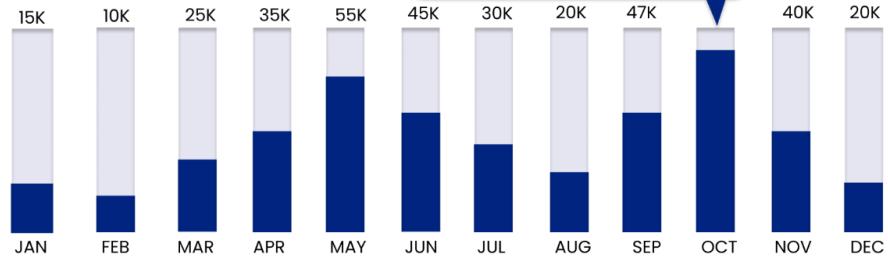
This Month Profit

Earning Statistics

WEEKLY **MONTHLY**

Highest Earning on 10th October, 2022

৳ 75890



Top Selling Products

No	Product Name	Sold unit	Earning	Availability
1	Nike Air Force 1	200	130000	In Stock
2	ASUS ROG Swift 360Hz	57	121000	In Stock
3	Casio MCW-100H-9A2V	107	85600	Out Of Stock
4	iPhone 14 Pro Max	50	85000	In Stock
5	MacBook Pro 14-inch M1 Max	25	80600	Out Of Stock
6	NVIDIA GeForce RTX 3090 Founders Edition	20	70600	In Stock

Show More

Review techniques:

Completeness Review:

Utilizing the completeness review technique, one can make sure that a project or product is finished and contains all the necessary elements. In the case of an e-commerce platform, a completeness evaluation would entail checking the system to make sure that all necessary functionality are present and that no elements are absent. A functional and user-friendly e-commerce platform can be ensured with the aid of this review.

In order to confirm that our document is complete in terms of review technique, we've went through the fundamentals of SRS documents and incorporated each and every points that should be present in a proper SRS document. All of the members of our group have went through this SRS document several times to ensure all the required components are present in the final document, thus ensuring a complete SRS document creation.

Correctness Review:

A procedure called correctness review is used to guarantee the technical accuracy and error-free completion of a project or product. A correctness review in the context of an e-commerce platform would entail checking the system to make sure that all components are technically accurate and free of faults or flaws. This evaluation will assist in ensuring that the e-commerce platform is trustworthy and that users may utilize it without running into any difficulties or technical concerns. In general, completeness and correctness assessment methods are crucial for guaranteeing the caliber of an e-commerce platform. Using these methods, e-commerce businesses in Bangladesh can make sure that their platforms are complete, functional, technically accurate, and error-free, giving their customers a better user experience.

In order to verify that our SRS document is correct in terms of review technique, we have done comprehensive domain study in order to produce a best possible corrected version of the document with proper references on each sections. No information in this document is given without proper validation. All of our group members have gone thorough the document several times, therefore ensuring that all the information is documented correctly with proper citations and references.

Change Management

As this is a group project, and everyone had their own task to accomplish, often we need to update our document, add new files and validate. Whenever, we did any changes or added new files, we updated the files first in google drive, then updated the information in Trello, which is another product of Atlassian, then updated the information finally in Confluence doc management software.

Document Management

<https://ssa-uiu.atlassian.net/wiki/spaces/ESFB/pages> (requires credentials and permission to access)

The screenshot shows the Confluence 'Pages' view. On the left, there's a sidebar with a 'Pages' section containing a list of document titles: 'Information Gathering and A...', 'Expert Interviews', 'Information gather maste...', 'Feasibility analysis', 'Feature analysis and technic...', 'Bidding and pre-order', 'AR & Voice Search', 'Personalized shopping experience and AI-based customer service', 'SRS Document', 'AI Chatbot', 'Technical Specifications', 'Feature analysis and technical diagrams', and 'Bidding and pre-order'. The main area displays seven document cards with titles like 'SRS Document', 'Technical Specifications', 'AI Chatbot', 'Personalized shopping experience and AI-based customer service', 'AR & Voice Search', 'Feature analysis and technical diagrams', and 'Bidding and pre-order'. Each card includes a small icon, the title, the creator (K M Jawadur Rahman), and the last update time.

Version Control

The screenshot shows the 'Page History - Feasibility analysis' page. At the top, there's a message saying 'Only 2 versions can be compared at a time'. Below it is a button 'Compare selected versions'. The main area is titled 'Page versions' and contains a table with the following data:

Select	Version	Published	Changed By	Status	Comment	Actions
<input type="checkbox"/>	CURRENT (v. 3)	31 minutes ago	KR			
<input type="checkbox"/>	v. 2	About an hour ago	KR			Restore · Delete
<input type="checkbox"/>	v. 1	About an hour ago	KR			Restore · Delete

At the bottom, there's a button 'Compare selected versions'.

- a. All documents, including the Software Specification and Analysis document, and other project-related artifacts, **should be created and managed within Confluence, which offers built-in version control for pages.**
- b. **Confluence automatically tracks the history of changes to each page by creating a new version each time it is modified.** Users can view, compare, and restore previous versions, as well as see the differences between versions.

c. For source code, continue to use a dedicated version control system like Git, as Confluence is not designed for managing code repositories.

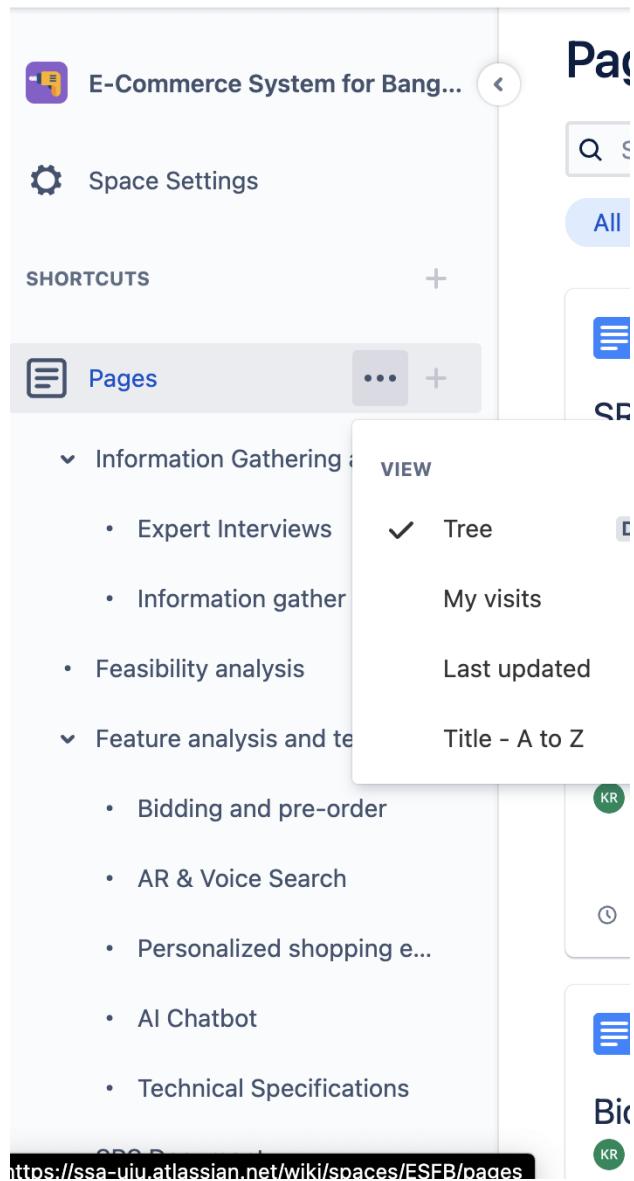
Document Storage

a. **All project-related documents should be stored in Confluence**, a centralized, secure, and cloud-based document management system accessible to all team members.

b. **Confluence spaces and page hierarchies should be organized logically**, making it easy for team members to find relevant documents.

The image displays a grid of six document cards, each representing a different Confluence page or document. The cards are arranged in two rows of three. Each card includes a small icon, the document title, the creator's name, and a timestamp indicating when it was last updated.

- SRS Document**
Created by K M Jawadur Rahman
Updated 10 minutes ago
- Technical Specifications**
Created by K M Jawadur Rahman
Updated 10 minutes ago
- AI Chatbot**
Created by K M Jawadur Rahman
Updated 10 minutes ago
- Personalized shopping experience and AI-based customer service**
Created by K M Jawadur Rahman
Updated 25 minutes ago
- AR & Voice Search**
Created by K M Jawadur Rahman
Updated 30 minutes ago
- Feasibility analysis**
Created by K M Jawadur Rahman
Feature List Comparison (Bangladeshi E-Commerce Systems) E-Commerce System Daraz BD AjkerDeal Rokomari PriyoShop Othoba Our E-Commerce Syste...
Updated 30 minutes ago



The screenshot shows the Confluence interface for the 'E-Commerce System for Bang...' space. A dropdown menu is open over a list of items under the 'Information Gathering' section. The menu is titled 'VIEW' and contains the following options:

- Tree (selected)
- My visits
- Last updated
- Title - A to Z

The main list includes:

- Expert Interviews
- Information gathering
- Feasibility analysis
- Bidding and pre-order
- AR & Voice Search
- Personalized shopping e...
- AI Chatbot
- Technical Specifications

At the bottom left, there is a URL: <https://ssa-uiu.atlassian.net/wiki/spaces/ESFB/pages>

Document Naming Convention

- A **consistent naming convention should be followed** for all Confluence pages and attachments, including dates, version numbers, and clear descriptive titles.
- The naming convention should be documented and communicated to all team members to ensure consistency.

Document Access Control

- Access to **project-related Confluence spaces and pages should be restricted based on the roles and responsibilities of team members** using Confluence's permission management features.
- Document access should be **logged and monitored for security and compliance purposes**.

c. A system for requesting and granting access to restricted documents should be in place to ensure that team members can access necessary information when needed.

Document Review & Approval

- a. All documents should undergo a formal review and approval process involving relevant stakeholders, such as project managers, developers, and quality assurance teams. Confluence's inline comments and page approval features can be used to facilitate this process.
- b. Changes to the Software Specification and Analysis document should be documented and communicated to all team members.
- c. A process for handling and resolving disagreements or conflicts during the review and approval process should be established, ensuring that decisions are made collaboratively and transparently.

Document Retention & Archival

- a. A document retention policy should be in place to specify the duration for which different types of documents must be kept within Confluence.
- b. An archival process should be established for securely storing and retrieving older documents that are no longer actively used but may be needed for reference, audits, or compliance purposes. Confluence's built-in archiving feature can be used to move outdated pages to a dedicated archive space.

Challenges of Implementing our Proposed System:

We will use AR Core by Google to implement our Augmented reality based virtual try-on. AR Core by Google is currently free of cost but for the large scale it has its limitations. For future work, there will be a capital required for implementing own Augmented Reality based Virtual Try-on.

Implementing Bidding feature in Bangladeshi E-commerce platform is difficult as majority of the population is not habitual about bidding culture. But as an emerging country, this should not be an issue in the future. We have seen a rapid growth in Ecommerce platform in Bangladesh. People started to build credibility and trust towards to ecommerce platforms.

To implement personalized recommendations, a huge number of capital is required for data centers and trained human resources. Personalized recommendations can improve customer shopping experience more effective than ever.

Testing and Results

Testing is an important part of any software or system development process. It involves validating the functionality, performance, reliability, and security of the system to ensure that it meets the intended requirements and performs as expected. We are going to use Unit Testing, Blackbox and Whitebox testing.

Unit Testing : Unit testing is a type of testing that focuses on testing individual units of code in isolation, typically at the smallest possible level, such as **individual functions, methods, or classes**. The goal of unit testing is to ensure that each individual unit of code behaves as expected and produces the correct output for a given input, according to its design and requirements.

Black Box Testing: Black box testing is a type of software testing that focuses on testing the functionality of a software system without knowing the internal details of its implementation. In other words, the tester treats the system as a "black box" and only tests its **input** and **output behavior**, without considering the internal structure, design, or implementation of the system.

White Box Testing: White box testing, also known as clear box testing or structural testing, is a type of software testing that focuses on testing the **internal structure, design, and implementation details** of a software system. Unlike black box testing, which tests the system's functionality from the end user's perspective without considering internal details, white box testing involves having knowledge of the internal structure, design, and code of the system being tested.

Project Name: EkhushBD.

What makes EkhushBD unique in the Bangladeshi e-commerce landscape?

EkhushBD stands out through its innovative features like virtual try-on using ARCore technology and a product bidding system, offering a more interactive and engaging shopping experience compared to traditional Bangladeshi e-commerce platforms.

Who are the target users for EkhushBD?

EkhushBD primarily targets consumers within Bangladesh seeking a diverse and dynamic online shopping experience, particularly those interested in trying on clothes virtually and participating in product auctions.

What are the basic e-commerce functionalities offered by EkhushBD?

EkhushBD provides all the essential features of a traditional e-commerce platform, including product browsing, searching, filtering, detailed product pages, shopping cart management, secure checkout, and order tracking.

How does the product bidding system work on EkhushBD?

Users can participate in auctions for specific products, submitting bids and competing with others to win the item at a potentially lower price. The system will have clear rules, notifications, and winner management mechanisms.

What is the role of ARCore technology in EkhushBD?

EkhushBD integrates ARCore to allow users to virtually try on garments and accessories through their smartphones or tablets, enhancing product visualization and decision-making before purchase.

What technology stack will be used to develop EkhushBD?

The front-end will utilize HTML, CSS, JavaScript, Bootstrap, and jQuery, while the back-end will be built with JavaScript and PHP. MySQL and Firebase will handle the database needs, and secure payment gateways like sslcommerz will be integrated for various Bangladeshi mobile banking options.

How will EkhushBD ensure secure user authentication and data protection?

Firebase Auth will be used for secure user login and registration, while NID verification through Poricoy API Bangladesh will add an extra layer of security for transactions and fraud prevention. Data storage and transmission will be encrypted to safeguard user information.

What measures will be taken to ensure website performance and scalability?

The website will be designed to be responsive and function smoothly across various devices and internet connections. A scalable system architecture will be implemented to accommodate future growth in user base and product offerings.

Who are the key members of the EkhushBD development team?

The team includes a Project Manager named Md. Shafiqul Islam, Software Engineers are Khorshed Alam and Mahbubul Haq Bhuiyan, a System Engineer named Abul Hossain Chowdhury, UI Designer named Abul Hossain Chowdhury, Front-End and DevOps Engineers are Sayma Belal, and a Chief Executive Officer and Founder named Dr. Suman Ahmmmed, who overseeing the project.

What is the total budget allocated for EkhushBD development?

The total project budget is 600,000 BDT, divided into specific allocations for front-end and back-end development, UI design, system architecture, and other expenses.

When are the key milestones for EkhushBD development?

Front-end development is expected to be completed by March 3, 2024, followed by back-end development completion by September 1, 2024. The full project deployment is targeted for December 16, 2024.

What hosting and domain provider will be used for EkhushBD?

SNBD Host Ltd. will manage the domain and host the website on their VPS Server.

How will user feedback be incorporated into EkhushBD after launch?

User testing and feedback channels will be established to gather user input and continuously improve the platform based on their experiences and suggestions.

What plans are in place for ongoing maintenance and support of EkhushBD?

A dedicated team will be responsible for website maintenance, bug fixing, security updates, and ongoing user support after launch.

How will EkhushBD ensure accessibility for users with disabilities?

The website will be designed and developed following WCAG guidelines to ensure accessibility for users with various disabilities.

What marketing and promotional strategies are planned for EkhushBD?

Effective marketing and promotional strategies will be developed to reach the target audience and raise awareness about EkhushBD's unique features and benefits within the Bangladeshi market.

How will EkhushBD handle potential legal and regulatory challenges?

The development team will ensure compliance with all relevant Bangladeshi laws and regulations related to e-commerce, data privacy, and consumer protection.

Will there be minimum bid amounts for products in the auction system?

Yes, the system will likely define minimum bid increments or starting prices to prevent excessively low bids and ensure auction viability.

How will auction winners be notified and informed about product delivery or pickup?

Winners will receive clear notifications through email, SMS, or within the platform app, with additional details regarding delivery or pickup options.

Will there be dispute resolution mechanisms for issues related to bidding or product condition?

EkhushBD may establish specific policies and procedures for handling disputes, potentially involving mediation or customer support intervention.

What level of accuracy and detail can users expect from the ARCore virtual try-on experience? Accuracy will depend on factors like device camera quality and lighting conditions, but the system should strive for realistic representation of garment fit and appearance.

Will the virtual try-on feature be available for all product categories on EkhushBD? Initially, it might focus on clothing and accessories, but future expansion to other categories like eyewear or cosmetics could be considered.

How will EkhushBD ensure compatibility of the virtual try-on feature with various smartphone and tablet models?

The development team will test compatibility across popular devices and potentially offer alternative solutions for older models.

Will there be two-factor authentication options for secure user logins on EkhushBD?

Yes, implementing additional security layers like OTP or biometric authentication is likely to be considered.

How will EkhushBD handle abandoned shopping carts and improve checkout conversion rates? The platform can employ reminder emails, offer discount incentives, or streamline the checkout process for a smoother user experience.

Will EkhushBD provide personalized product recommendations or wish list features to enhance user engagement?

Yes, incorporating recommendation algorithms and wish lists can personalize the shopping experience and encourage repeat visits.

What risk management strategies are in place to address potential development delays or technical challenges?

The team should have contingency plans for unforeseen issues, including backup resources, flexible deadlines, and risk communication protocols.

How will project progress be monitored and reported to stakeholders, including the client?

Regular progress reports, meetings, and communication channels will keep everyone informed about key milestones, achievements, and any potential roadblocks.

What training or support will be provided to users to familiarize them with EkhushBD's unique features like bidding and virtual try-on?

User guides, tutorial videos, and in-platform prompts can guide users through the features and ensure smooth adoption

Does EkhushBD have plans to integrate with other marketplaces or logistics providers in the future?

Partnerships with other platforms or logistical services could expand product offerings, improve delivery options, and enhance user convenience.

Is there potential for international expansion in the future, beyond the Bangladeshi market? If successful, EkhushBD's unique features and scalability could pave the way for expansion into other countries with similar market characteristics.

Will EkhushBD explore incorporating additional innovative technologies like cryptocurrency payments or social commerce features in the future?

Staying open to future technological advancements and user preferences will allow EkhushBD to adapt and evolve over time.

In the ever-evolving landscape of e-commerce, EkhushBD stands out as a trailblazer, poised to revolutionize the way Bangladeshis engage in online shopping. The platform is not just a marketplace; it is an embodiment of innovation, seamlessly integrating cutting-edge technology with a user-centric design philosophy, ushering in a new era for consumers seeking a distinctive and interactive online retail experience.

Setting the Stage:

As the digital realm continues to shape consumer behaviors and expectations, EkhushBD steps onto the stage with a mission to redefine the conventional norms of online shopping in Bangladesh. In a market saturated with traditional e-commerce platforms, EkhushBD distinguishes itself by embracing innovation as its guiding principle.

The Essence of EkhushBD:

At the heart of EkhushBD's approach is a commitment to providing more than just a transactional platform. The goal is to create an immersive and dynamic space where users not only buy products but also engage, experience, and participate in a way that goes beyond the mundane.

Innovative Features Redefining the Norms:

EkhushBD's uniqueness lies in its innovative features, setting a benchmark for the industry:

Virtual Try-On with ARCore Technology: EkhushBD breaks the barriers of online apparel shopping by introducing a virtual try-on experience. Leveraging ARCore technology, users can virtually don garments and accessories, transcending the limitations of traditional online shopping.

Product Bidding System: Adding an element of thrill and engagement, EkhushBD introduces a product bidding system. Consumers can actively participate in auctions, submitting bids and competing to secure desired products at potentially lower prices, transforming the shopping experience into a dynamic and interactive process.

Targeting a Diverse Audience:

EkhushBD strategically targets a broad spectrum of users within Bangladesh:

Bangladeshi Consumers: At the core of its mission is the local consumer base, individuals seeking a modern and dynamic online shopping experience that goes beyond the ordinary.

Virtual Shoppers: EkhushBD appeals to a growing demographic of users interested in the futuristic concept of virtual try-on and the excitement of participating in product auctions.

Comprehensive E-Commerce Functionalities:

While EkhushBD introduces avant-garde features, it remains committed to providing the essential e-commerce functionalities users expect:

Product Browsing, Searching, and Filtering: A user-friendly interface ensures effortless navigation through a diverse array of products, enhancing the overall shopping experience.

Detailed Product Pages: Providing in-depth information about each product aids users in making informed purchasing decisions, bridging the gap between the digital and physical shopping experience.

Shopping Cart Management: Streamlining the checkout process, EkhushBD's platform enables users to manage and review their selected items with ease.

Secure Checkout: Prioritizing user data protection, EkhushBD employs robust security measures during the payment process, ensuring a secure and trustworthy transaction environment.

Order Tracking: Transparency and convenience are paramount. EkhushBD incorporates order tracking functionalities, keeping users informed about the status of their purchases.

Key Features:

Virtual Try-On with ARCore Technology: EkhushBD leverages ARCore to provide users with an immersive virtual try-on experience. This technology allows customers to visualize how garments and accessories will look on them, transcending the limitations of conventional online shopping.

Product Bidding System: The inclusion of a product bidding system adds an element of excitement and engagement. Users can actively participate in auctions, submit bids, and compete to secure products at potentially lower prices, fostering a dynamic and interactive shopping environment.

Target Audience:

EkhushBD strategically targets a diverse audience:

Bangladeshi Consumers: Catering to the evolving needs of local consumers seeking a modern and dynamic online shopping experience.

Virtual Shoppers: Attracting users intrigued by the prospect of virtually trying on products and engaging in the thrill of product auctions.

E-Commerce Functionalities:

EkhushBD encompasses all fundamental e-commerce features, ensuring a seamless and comprehensive shopping experience:

Product Browsing, Searching, and Filtering: A user-friendly interface facilitates easy navigation and exploration of a wide array of products.

Detailed Product Pages: Providing in-depth information about each product, aiding customers in making informed purchasing decisions.

Shopping Cart Management: Streamlining the checkout process by allowing users to manage and review their selected items.

Secure Checkout: Implementing robust security measures to protect user information during the payment process.

Order Tracking: Offering transparency and convenience through order tracking functionalities.

Technology Stack:

The technology stack employed in **EkhushBD** reflects a balanced combination of reliability and innovation:

Front-End: Utilizing HTML, CSS, JavaScript, Bootstrap, and jQuery to create an interactive and visually appealing user interface.

Back-End: Leveraging JavaScript and PHP to ensure the functionality and performance of the platform.

Database: Using MySQL and Firebase to manage and store data efficiently.

Payment Gateways: Integrating sslcommerz to facilitate secure transactions through various Bangladeshi mobile banking options.

Security Measures:

EkhushBD places a high priority on ensuring user security:

Firebase Auth: Implementing Firebase Authentication for a secure and seamless user login and registration process.

NID Verification through Poricoy API Bangladesh: Adding an extra layer of security for transactions and fraud prevention, enhancing overall data protection.

Project Team:

EkhushBD's development team is a cohesive unit, each member contributing their expertise:

Project Manager: Md. Shafiqul Islam, responsible for overseeing the project's successful execution.

Software Engineers: Khorshed Alam and Mahbubul Haq Bhuiyan, driving the technical development of the platform.

System Engineer: Abul Hossain Chowdhury, ensuring the robustness and efficiency of the system.

UI Designer: Abul Hossain Chowdhury, crafting an appealing and user-friendly interface.

Front-End and DevOps Engineers: Sayma Belal, contributing to both the front-end development and the seamless deployment of the platform.

CEO and Founder: Dr. Suman Ahmed, providing visionary leadership and strategic direction for the project.

Project Budget and Timeline:

A transparent budget allocation and timeline guide the development process:

Front-End Development: 200,000 BDT.

Back-End Development: 200,000 BDT.

UI Design: 50,000 BDT.

System Architecture: 50,000 BDT.

Other Expenses: 100,000 BDT.

Total Project Budget: 600,000 BDT.

Key Milestones:

Front-End Development Completion: March 3, 2024.

Back-End Development Completion: September 1, 2024.

Full Project Deployment: December 16, 2024.

Hosting and Domain:

EkhushBD's online presence is entrusted to SNBD Host Ltd., managing the domain and hosting on their VPS Server. This choice ensures reliable and secure hosting for the platform.

Future Plans:

EkhushBD envisions continuous growth and improvement:

Incorporating User Feedback: Establishing user testing and feedback channels to collect valuable insights and enhance the platform based on user experiences.

Ensuring Accessibility: Adhering to WCAG guidelines to guarantee that the platform is accessible to users with various disabilities.

Exploring International Expansion: If successful locally, EkhushBD may consider expanding its unique features and offerings to international markets with similar characteristics.

Innovation and Integration:

EkhushBD remains at the forefront of technological advancements:

Cryptocurrency Payments and Social Commerce Features: The platform is open to incorporating emerging technologies to stay adaptable and meet evolving user preferences.

Integration with Amazon Personalize: Exploring the integration of Amazon Personalize to enhance user engagement through personalized product recommendations.

Developers and Team Questions for the EkhushBD Project Manager:

Front-End & UI/UX:

Q: How detailed should the virtual try-on experience be? Should it include different body types and skin tones?

A: Aim for high accuracy and inclusivity. Implement diverse models and allow users to adjust skin tones and body types for a realistic experience.

Q: Should we gamify the bidding system further with leaderboards or achievements?

A: Let us test different levels of gamification. Start with basic features like bidding history and notifications, then consider leaderboards if user engagement warrants it.

Q: How can we ensure the user interface is accessible for users with disabilities?

A: Follow WCAG guidelines throughout the design process. Conduct accessibility testing with diverse users to identify and address any issues.

Back-End & DevOps:

Q: What level of scalability and security is required for the platform?

A: Anticipate high traffic during peak hours and potential bidding wars. Implement robust server infrastructure and security measures like data encryption and intrusion detection.

Q: How can we ensure smooth integration with payment gateways and NID verification?

A: Conduct thorough testing with all payment providers and the Poricoy API to avoid any glitches during live transactions.

Q: What is our disaster recovery plans in case of server outages or cyberattacks?

A: Establish clear backup and recovery protocols, including regular data backups and disaster recovery simulations.

Project Management & Strategy:

Q: How will we collect and incorporate user feedback?

A: Implement in-app surveys, feedback forms, and user testing sessions to gather ongoing feedback. Analyze data regularly and prioritize improvements based on user needs.

Q: What are our marketing and outreach strategies to attract target audiences?

A: Develop targeted campaigns for both local and tech-savvy audiences, highlighting the platform's unique features like AR try-on and product bidding. Utilize social media, influencer marketing, and targeted online advertising.

Q: What are our contingency plans if international expansion becomes a possibility?

A: Research legal and regulatory requirements in potential target markets. Partner with local companies for market insights and ensure platform features comply with local regulations.

Q: Which project management system you are using?

A: EkhushBD uses Jira to manage the project.

Q: Which software development methodology you are using?

A: EkhushBD uses Scrum Methodology which is a specific framework within agile.

Q: Who is the client of this project?

A: Dr. Suman Ahmmed is the client of this project who is a professor of CSE, United International University.

Q: What makes EkhushBD unique in the Bangladeshi e-commerce landscape?

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A: The website will be designed to be responsive and function smoothly across various devices and internet connections. A scalable system architecture will be implemented to accommodate future growth in user base and product offerings.

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A: User guides, tutorial videos, and in-platform prompts can guide users through the features and ensure smooth adoption

Q: Does EkhushBD have plans to integrate with other marketplaces or logistics providers in the future?

A: Partnerships with other platforms or logistical services could expand product offerings, improve delivery options, and enhance user convenience.

Q: Is there potential for international expansion in the future, beyond the Bangladeshi market?

A: If successful, EkhushBD's unique features and scalability could pave the way for expansion into other countries with similar market characteristics.

Q: Will EkhushBD explore incorporating additional innovative technologies like cryptocurrency payments or social commerce features in the future?

A: Staying open to future technological advancements and user preferences will allow EkhushBD to adapt and evolve over time.

Does EkhushBD use ARCore technology for its virtual try-on feature? (Yes)

Is EkhushBD primarily targeted towards Bangladeshi consumers? (Yes)

Does the platform offer secure checkout with encrypted data protection? (Yes)

Is order tracking available for all deliveries on EkhushBD? (Yes)

Has the project already secured all necessary funding for its development? (No)

Can users participate in real-time bidding for products on EkhushBD? (Yes)

Are detailed product specifications and reviews provided on the platform? (Yes)

Does the virtual try-on feature allow users to adjust skin tones and body types? (Not specified, ask for clarification)

Is leaderboards or achievements currently integrated into the bidding system? (No)

Does EkhushBD accept cryptocurrency payments at this time? (No)

Does the platform utilize HTML, CSS, and JavaScript for its front-end development? (Yes)

Are MySQL and Firebase employed for database management? (Yes)

Is Amazon Personalize currently implemented for personalized product recommendations? (No)

Is the development team considering potential international expansion in the future? (Yes)

Will SNBD Host Ltd. manage both domain and hosting on their VPS Server? (Yes)

Q: Will there be size recommendations incorporated into the virtual try-on feature?

A: Yes, the system could integrate with standard sizing charts or allow users to input their measurements for personalized recommendations.

Q: How will EkhushBD address concerns about potential body shaming or unrealistic beauty standards associated with virtual try-on?

A: The platform can promote diversity and inclusivity by showcasing models of various body types and skin tones, and by emphasizing the functionality of the feature for practical decision-making rather than solely on aesthetics.

Q: How did EkhushBD adapt the Scrum framework to their specific project needs?

A: We might have customized sprint lengths, adjusted daily scrum durations, or implemented specific backlog refinement techniques to suit our development team and project size.

Q: What tools and platforms did EkhushBD use to manage Scrum ceremonies and artifacts?

A: We could have utilized tools like Jira for backlog management, Confluence for documentation, and online meeting platforms for daily scrums and sprint reviews.

Q: Did EkhushBD encounter any challenges in implementing Scrum and how were they addressed?

A: We might have faced challenges like stakeholder buy-in, cross-functional team communication, or estimation accuracy. We could have addressed these through training, improved communication channels, and refined estimation techniques.

Q: How did EkhushBD structure their product backlog and prioritize user stories for each sprint?

A: We likely used techniques like user story mapping, MoSCoW prioritization, and value-based estimation to ensure we tackled the most impactful features first.

Q: Did EkhushBD use any specific techniques for daily stand-up meetings and sprint backlog management?

A: We might have employed the "Mad, Sad, Glad" format for stand-up updates, implemented visual boards for tracking progress, and adopted Kanban techniques for managing user stories within sprints.

Q: How did EkhushBD handle scope changes or unexpected challenges during sprints?

A: We could have used backlog refinement sessions to adjust priorities, implemented "impediment removal" meetings to address roadblocks, and communicated transparently with stakeholders about potential impacts.

Q: What specific metrics or techniques did EkhushBD use to measure sprint success and project progress?

A: We might have tracked burndown charts, velocity, sprint completion rates, and user feedback to assess progress and identify areas for improvement.

Q: How did EkhushBD conduct sprint retrospectives and implement action items for future sprints?

A: We could have used retrospective techniques like the "Five Whys" or "Start, Stop, Continue" to analyze successes and challenges, and prioritize actionable items for the next sprint cycle.

Q: Did EkhushBD face any resistance to adopting Scrum practices and how was it overcome?

A: We might have encountered concerns about adapting to new workflows or resistance from established team members. Open communication, transparency, and demonstrating the benefits of Scrum could have helped overcome these challenges.

Budget details

- **Front End Development: 200,000 BDT.**
- **Backend Development: 200,000 BDT.**
- **UI Design: 50,000 BDT.**
- **System Architect: 50,000 BDT.**
- **Other: 100,000 BDT.**
- **Total Budget: 600,000 BDT.**

Technology Stack / Technology Used:

- **Front End Development: HTML, CSS, JavaScript, Bootstrap, jQuery.**
- **Backend Development: JavaScript, PHP.**
- **Database: MySQL, Firebase.**
- **Programming Languages: JavaScript, PHP.**

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User testing and feedback channels will be established to gather user input and continuously improve the platform based on their experiences and suggestions.

What plans are in place for ongoing maintenance and support of EkhushBD?

A dedicated team will be responsible for website maintenance, bug fixing, security updates, and ongoing user support after launch.

How will EkhushBD ensure accessibility for users with disabilities?

The website will be designed and developed following WCAG guidelines to ensure accessibility for users with various disabilities.

What marketing and promotional strategies are planned for EkhushBD?

Effective marketing and promotional strategies will be developed to reach the target audience and raise awareness about EkhushBD's unique features and benefits within the Bangladeshi market.

How will EkhushBD handle potential legal and regulatory challenges?

The development team will ensure compliance with all relevant Bangladeshi laws and regulations related to e-commerce, data privacy, and consumer protection.

Will there be minimum bid amounts for products in the auction system?

Yes, the system will likely define minimum bid increments or starting prices to prevent excessively low bids and ensure auction viability.

How will auction winners be notified and informed about product delivery or pickup?

Winners will receive clear notifications through email, SMS, or within the platform app, with additional details regarding delivery or pickup options.

Will there be dispute resolution mechanisms for issues related to bidding or product condition?

EkhushBD may establish specific policies and procedures for handling disputes, potentially involving mediation or customer support intervention.

What level of accuracy and detail can users expect from the ARCore virtual try-on experience? Accuracy will depend on factors like device camera quality and lighting conditions, but the system should strive for realistic representation of garment fit and appearance.

Will the virtual try-on feature be available for all product categories on EkhushBD? Initially, it might focus on clothing and accessories, but future expansion to other categories like eyewear or cosmetics could be considered.

How will EkhushBD ensure compatibility of the virtual try-on feature with various smartphone and tablet models?

The development team will test compatibility across popular devices and potentially offer alternative solutions for older models.

Will there be two-factor authentication options for secure user logins on EkhushBD?

Yes, implementing additional security layers like OTP or biometric authentication is likely to be considered.

How will EkhushBD handle abandoned shopping carts and improve checkout conversion rates? The platform can employ reminder emails, offer discount incentives, or streamline the checkout process for a smoother user experience.

Will EkhushBD provide personalized product recommendations or wish list features to enhance user engagement?

Yes, incorporating recommendation algorithms and wish lists can personalize the shopping experience and encourage repeat visits.

What risk management strategies are in place to address potential development delays or technical challenges?

The team should have contingency plans for unforeseen issues, including backup resources, flexible deadlines, and risk communication protocols.

How will project progress be monitored and reported to stakeholders, including the client? Regular progress reports, meetings, and communication channels will keep everyone informed about key milestones, achievements, and any potential roadblocks.

What training or support will be provided to users to familiarize them with EkhushBD's unique features like bidding and virtual try-on?

User guides, tutorial videos, and in-platform prompts can guide users through the features and ensure smooth adoption

Does EkhushBD have plans to integrate with other marketplaces or logistics providers in the future?

Partnerships with other platforms or logistical services could expand product offerings, improve delivery options, and enhance user convenience.

Is there potential for international expansion in the future, beyond the Bangladeshi market? If successful, EkhushBD's unique features and scalability could pave the way for expansion into other countries with similar market characteristics.

Will EkhushBD explore incorporating additional innovative technologies like cryptocurrency payments or social commerce features in the future?

Staying open to future technological advancements and user preferences will allow EkhushBD to adapt and evolve over time.

Budget details

Front End Development: 200,000 BDT.

Backend Development: 200,000 BDT.

UI Design: 50,000 BDT.

System Architect: 50,000 BDT.

Other: 100,000 BDT.

Total Project Budget: 600,000 BDT.

Technology Stack / Technology Used:

Front End Development: HTML, CSS, JavaScript, Bootstrap, jQuery.

Backend Development: JavaScript, PHP.

Database: MySQL, Firebase.

Programming Languages: JavaScript, PHP.

Recommendation engine

To provide relevant recommendations for add-ons to customers, historical datasets must be analyzed to generate accurate predictions. Amazon Personalize is an AI/ML service that trains models based on datasets and provides real-time recommendations and recipes for generating recommendations. The frontend application calls Amazon Personalize's inference endpoints to retrieve a set of personalized recommendations based on the customer's preferences.

Amazon Kinesis Data Firehose reads data in near real-time from Amazon Kinesis Data Streams, which is collected from front-end applications. This data can be stored in Amazon S3, which acts as a single source of truth and helps scale storage. S3 data can be used to build a personalized recommendation engine with Amazon Personalize. The Amazon Personalize inference endpoint can then be called to provide personalized recommendations based on user preferences as they interact on the ecommerce platform.

