



Team Invincibles

A Team of passionate developers
and AI engineers from IIT Jodhpur.



Team Details



Team Members

1. Rishav Aich
2. Ashutosh
3. Saloni Garg

About Us

We are final year student at IIT Jodhpur pursuing BTech in Artificial Intelligence and Data Science.

Theme

Theme 4: Personalized Payment Experiences and Financial Management

Prototype Link

Github : <https://github.com/Ris-code/Amazon-HackOn> WebApp : <https://amazon-production-175b.up.railway.app/>



Problem Statement



1. The key problem around payment arena include developing an AI-powered chatbot solution to automate the handling of customer payment queries.
2. Creating an automated budgeting solution that allows customers to set purchase amount limits for the year, get notifications when they reach certain thresholds, track their savings on a yearly, monthly, and overall basis, and monitor their spending across different product categories.
3. Designing an AI-generated recommendation engine that suggests the best payment method for each customer purchase based on their past payment history, current success rates, available cashbacks, and the costs of different payment options.



Customer Persona

Frequent Shoppers

Characteristics

High purchase frequency.

Frequent users of the streamlined payment processes and likely to be have more queries.



Needs

Easy-to-use payment options.

Loyalty rewards and cashback offers.

Budget tracking and management tools.

Prime Members

Characteristics

Subscription-based loyalty, likely higher spenders.

Interested in additional benefits and convenience.



Needs

Exclusive payment methods or incentives.

Enhanced financial tools as part of their Prime membership.



Needs

Innovative payment solutions (e.g., mobile wallets, buy now, pay later options).

Financial education and budgeting tools.

Millennials and Gen Z

Characteristics

Tech-savvy and value convenience.

Open to using new financial technologies and apps.



Customer Persona

Small Business Owners (Sellers on Amazon)

Characteristics

Use Amazon as a primary or secondary sales channel.

Need efficient financial management to handle transactions and cash flow.



Needs

Comprehensive financial dashboards.

Integrated payment solutions.

Tools for managing revenue, expenses, and taxes.

Budget Conscious Consumers

Characteristics

Budget-conscious.

Seek value and financial stability.



Needs

Budgeting and saving tools.

Payment plans and installment options.

Financial education resources.

Elderly Customers

Characteristics

May require more straightforward and secure payment methods.

Interested in managing fixed incomes and retirement funds.



Needs

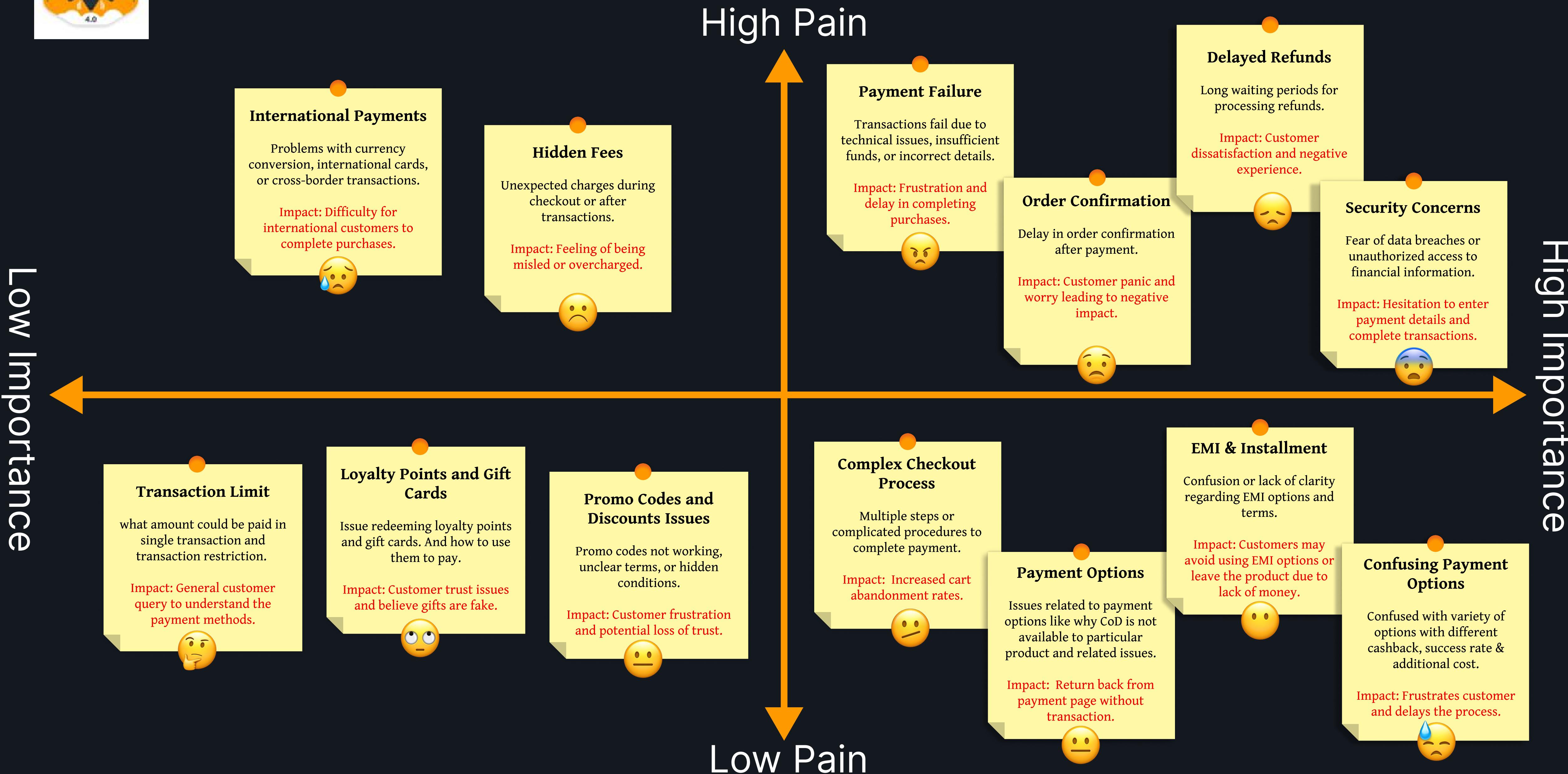
Simplified, secure payment interfaces.

Tools to manage fixed incomes and budgeting.

Fraud protection and financial advice.



Customer Pain Points



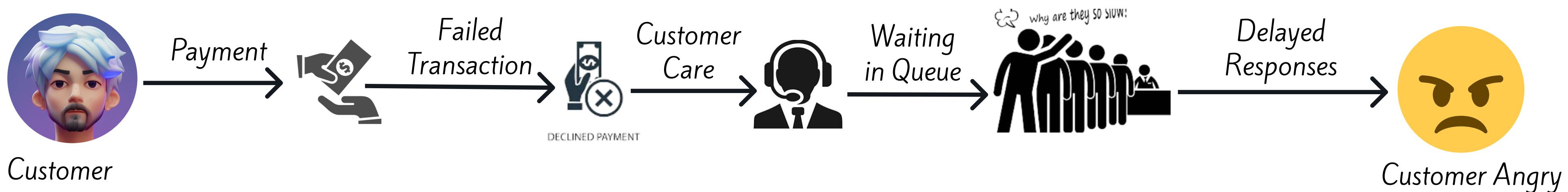


Need For ChatBot



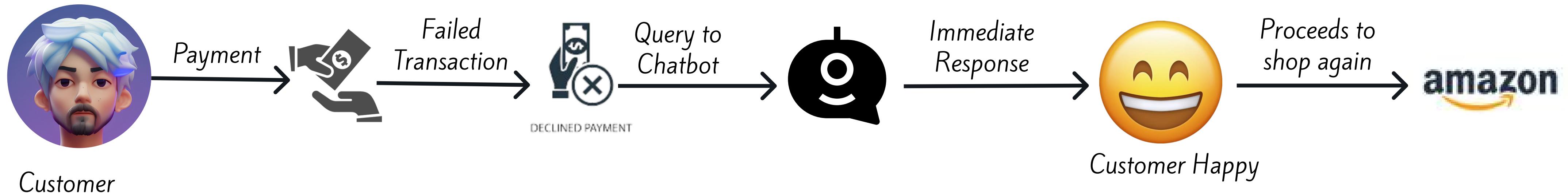
Traditional Method

In case of declined payments or customer queries about payment options, the traditional method is slow and often results in long wait times, which can lead to losing customers' trust.

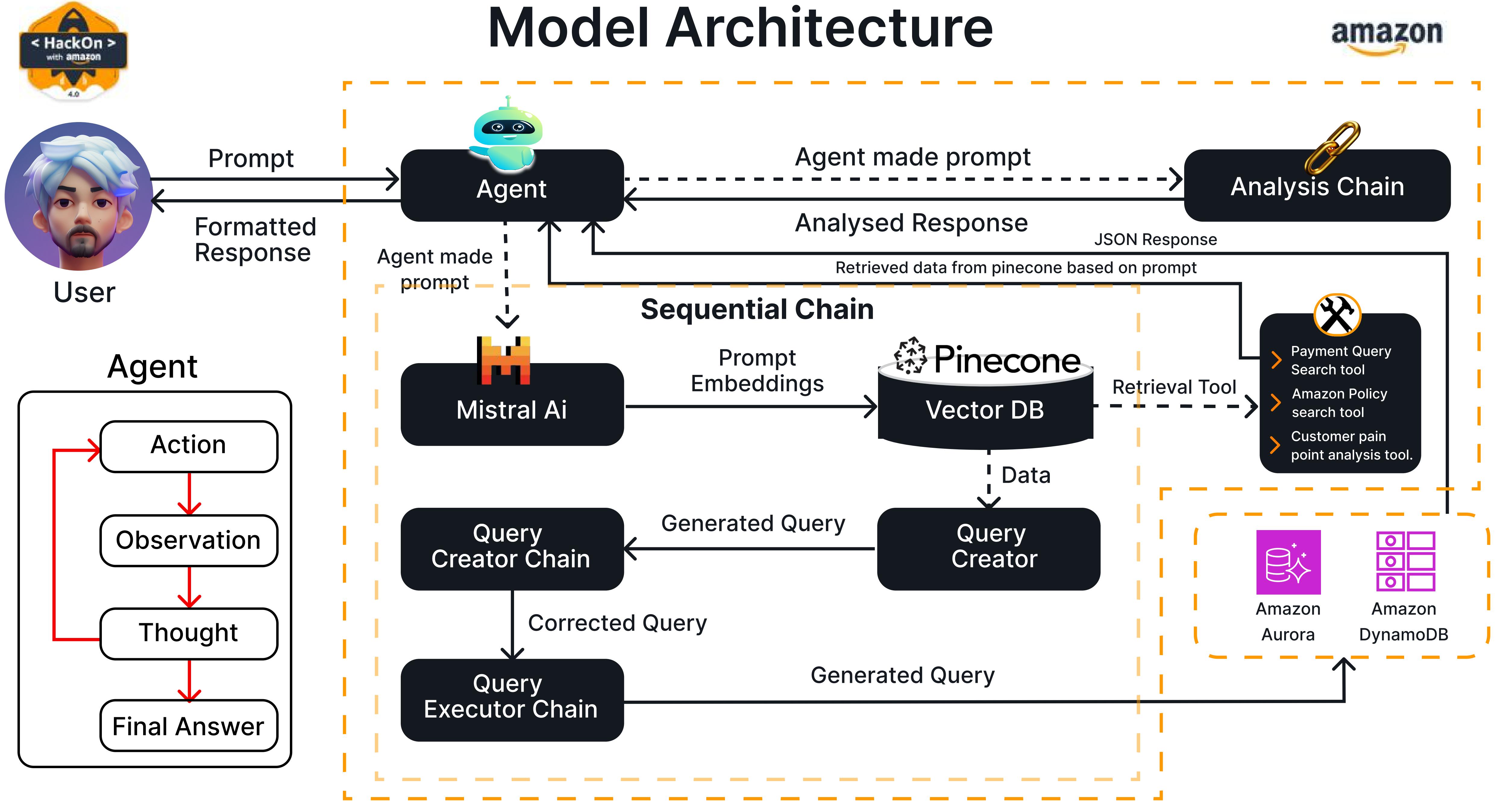


Using Our Chatbot

The chatbot responds to the customer's queries within seconds and solving the customer queries.



Model Architecture





Tool Description



Tool 1: Payment Query Search

Purpose

This tool is used to search for information related to payment queries. It provides answers and solutions to any questions about payments and payment methods.

Tool 3: Customer Pain Point Analysis

Purpose

This tool analyzes customer pain points to generate effective responses addressing their concerns.

Tool 4: Order Confirmation

Purpose

This tool verifies the transaction ID in the user's previous orders, providing order details and confirmation if found, or indicating the order is not confirmed if not found.

Tool 2: Amazon Policy Search

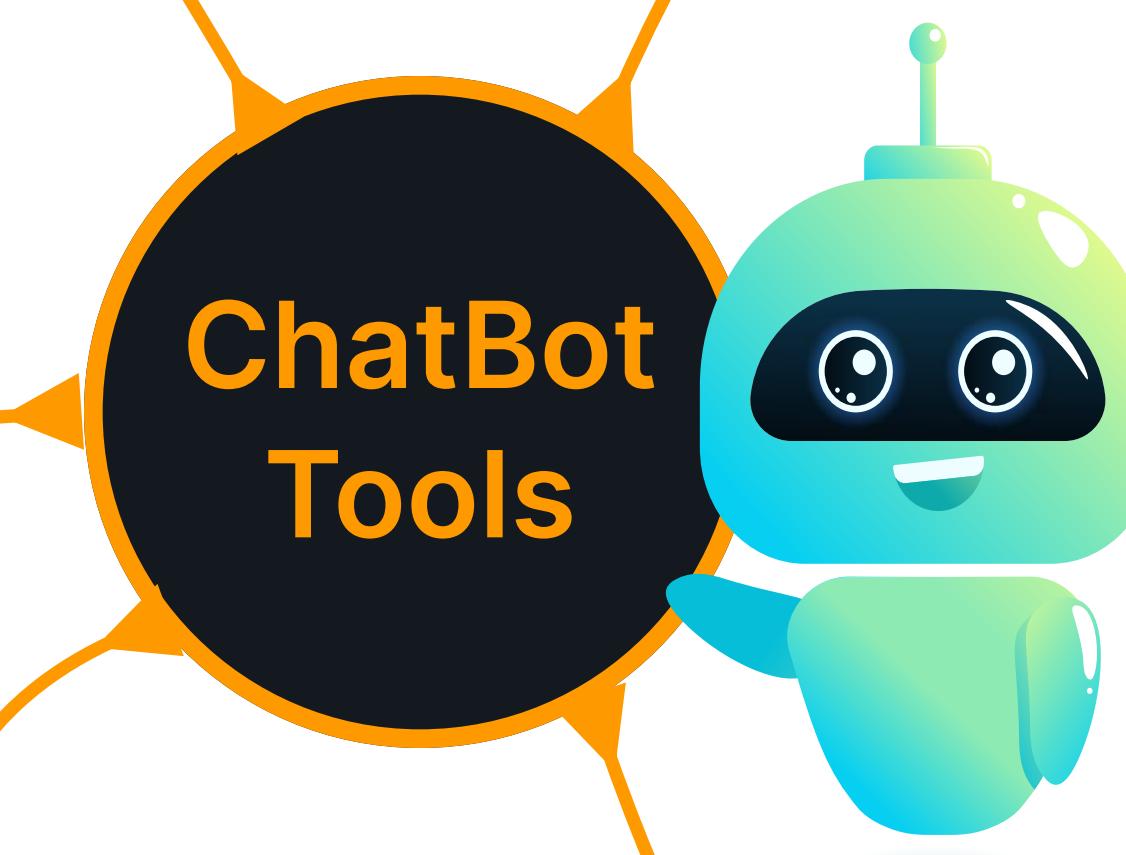
Purpose

This tool searches Amazon policies for topics like refunds, returns, replacements, privacy notices, conditions of use, safe online shopping, and payment methods, helping users find specific details quickly.

Tool 5: Financial Management

Purpose

This tool retrieves user financial data, including spending on item categories, savings, and order details, from a SQL database, offering comprehensive insights on order IDs, products, prices, and payment methods.





Improvement in Response



User Query: I have already paid the payment but my order is still not confirmed. Why ?

Without Tools

I'm sorry to hear about your issue. There could be several reasons why your order isn't confirmed yet:

1. **Payment Processing:** Sometimes, it may take a while for the payment to be processed and confirmed by the system.
2. **Technical Issues:** There might be a technical glitch or server issue at the company's end which is causing the delay.
3. **Verification:** The company might be verifying your payment or order details which can take some time.
4. **Order Volume:** During high volume periods, like sales or holidays, it might take longer than usual for orders to be confirmed.

I would suggest waiting for a few hours. If the problem persists, contact the customer service of the company you've made the purchase with. They can provide more specific information about your order.

Personalization

Addresses the user by name and acknowledges their specific issue, making the interaction feel personal and attentive.

Proactive Problem-Solving

Requests the transaction ID to investigate the issue, demonstrating a proactive approach to solving the problem rather than just providing generic advice.

Detailed Explanation and Reassurance

Requests the transaction ID to investigate the issue, demonstrating a proactive approach to solving the problem rather than just providing generic advice.

Comprehensive Assistance

Addresses the immediate issue and suggests additional tools and solutions to enhance the user's future shopping experience, showing a commitment to overall satisfaction.

Empathy and Understanding

Expresses understanding of the user's concern and shows empathy, significantly improving customer satisfaction and trust.

With Tools

Hello Rishav, I understand your concern about your order not being confirmed despite making the payment. I'll do my best to assist you.

Firstly, I would like to confirm the transaction ID for the payment you made. Once I have this information, I can check the status of your order and provide you with an update.

Please provide me with the transaction ID for the payment you made, and I will get back to you with the order status as soon as possible.

In the meantime, here are some possible reasons why your order might not be confirmed yet:

- It can take some time for the payment to be processed and for the order to be confirmed, especially during peak shopping periods.
- If you paid using a credit or debit card, your bank might be holding the payment for verification purposes. In this case, you may need to contact your bank to confirm the payment.
- If you paid using Amazon Pay, there might be an issue with your account that needs to be resolved before the payment can be processed.

Once I have the transaction ID, I can investigate further and provide you with a more specific answer. Thank you for your patience, and I look forward to resolving your issue promptly.

This is my transaction ID : 8aa2c964-4dd6-4e06-9fa0-fc5218cade1c

Thank you for providing the transaction ID, Rishav. I have checked the status of your order, and I can confirm that it has been successfully processed.

Here are the details of your order:

- Item Name: Headphones
- Cost: Rs 5000
- Payment Method: Debit Card
- Additional Cost: Rs 100
- Cashback: Rs 200
- Transaction ID: 8aa2c964-4dd6-4e06-9fa0-fc5218cade1c

If you have any further questions or concerns, please let me know.

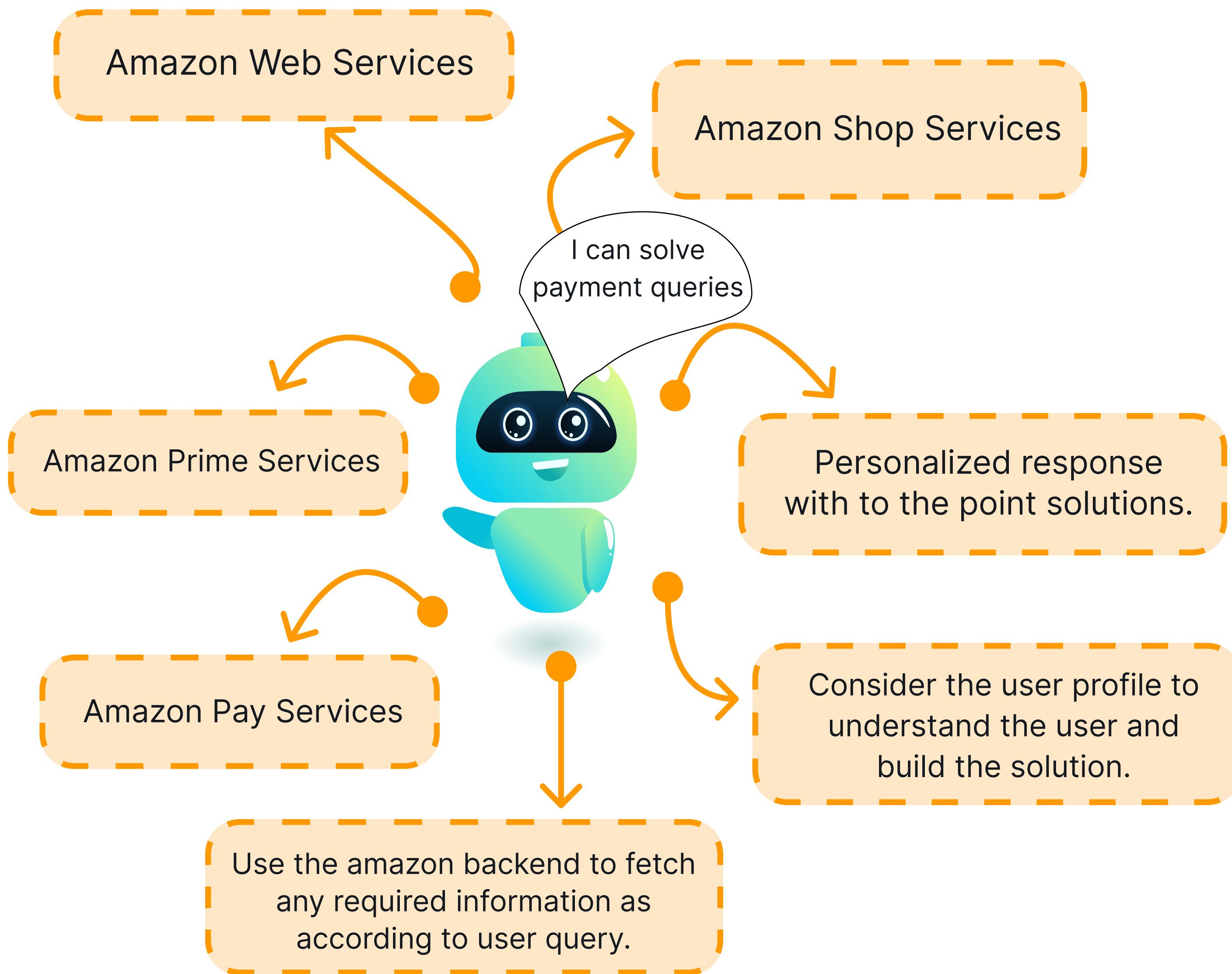
As a valued customer, we want to ensure that you have a seamless shopping experience. Here are some payment solutions and tools that might be helpful to you:

- Comprehensive financial dashboards to manage your expenses and track your spending.
- Integrated payment solutions for a hassle-free checkout experience.
- Innovative payment solutions such as mobile wallets and buy now, pay later options.
- Financial education and budgeting tools to help you make informed decisions.
- Easy-to-use payment options and loyalty rewards and cashback offers to save money on your purchases.
- Budget tracking and management tools to help you stay on top of your finances.

Thank you for choosing Amazon, Rishav. If you have any other questions, feel free to ask.



ChatBot Features



Business Relevance

- › The chatbot provides instant responses to user queries at any time, leading to higher customer satisfaction and increased usage of Amazon services.
- › In today's era, many users are accustomed to using chatbots for quick information. This familiarity makes it easier for users to adopt and rely on the chatbot for their needs, enhancing their overall experience.
- › It handles multiple queries simultaneously and efficiently, supporting more users without requiring a proportional increase in customer service staff.
- › Automating routine queries reduces the need for a large customer support team, resulting in significant cost savings for Amazon.
- › The chatbot can proactively suggest relevant Amazon services, such as Amazon Pay, Prime, and shopping deals, based on user interactions. This can drive cross-service adoption and increase revenue.

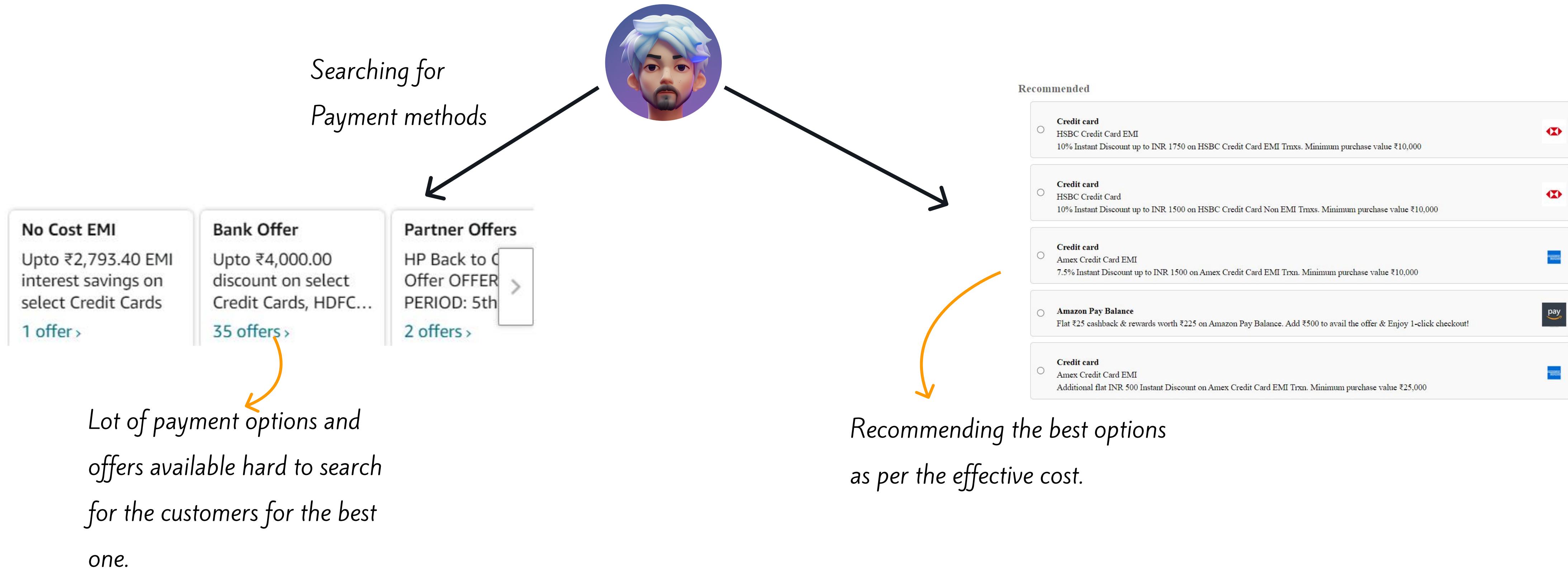


Payment Recommendation



Recommendation engine suggests the best payment method for each customer purchase based on their past payment history, available cashbacks, and the costs of different payment options.

- Evaluates available cashback offers to recommend the most beneficial payment method for the customer.
- Considers the costs associated with different payment methods to ensure cost-effective choices for customers.



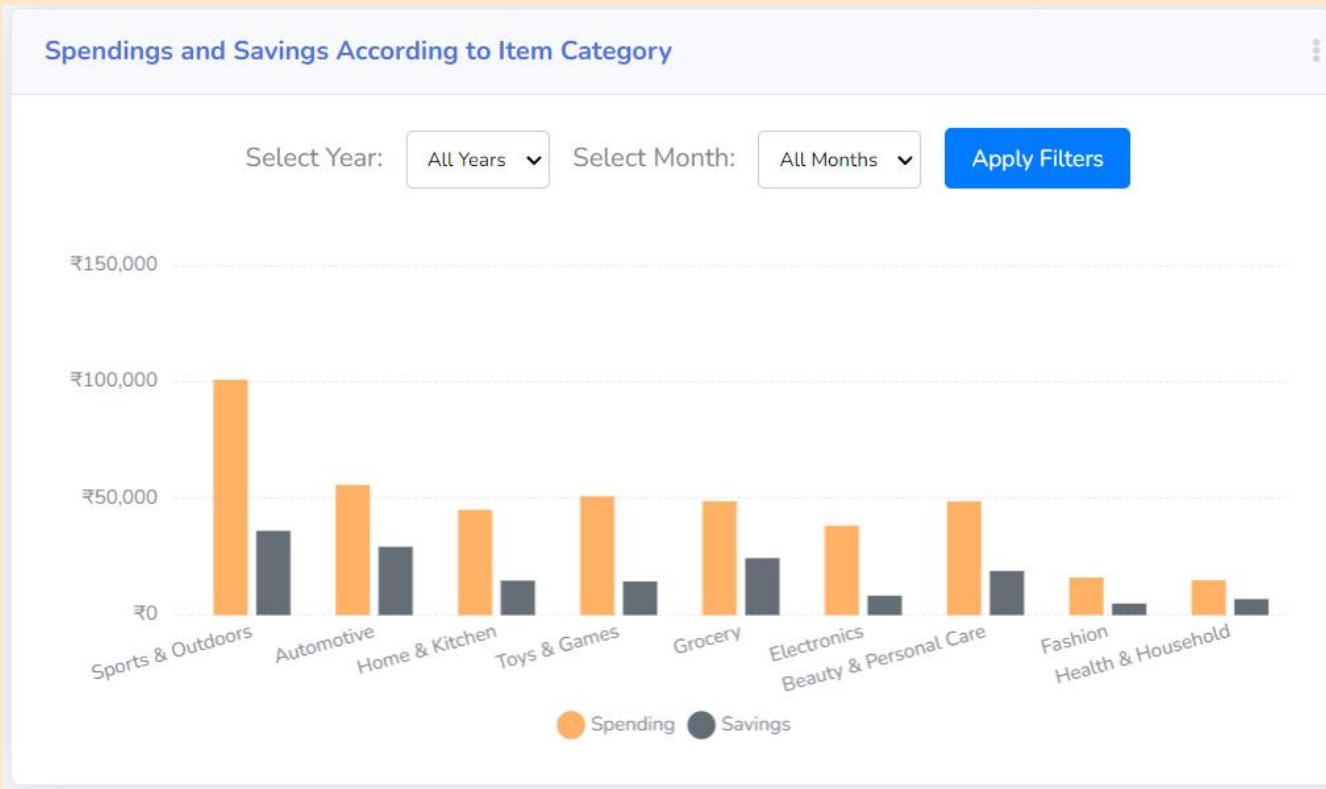


Financial Manager

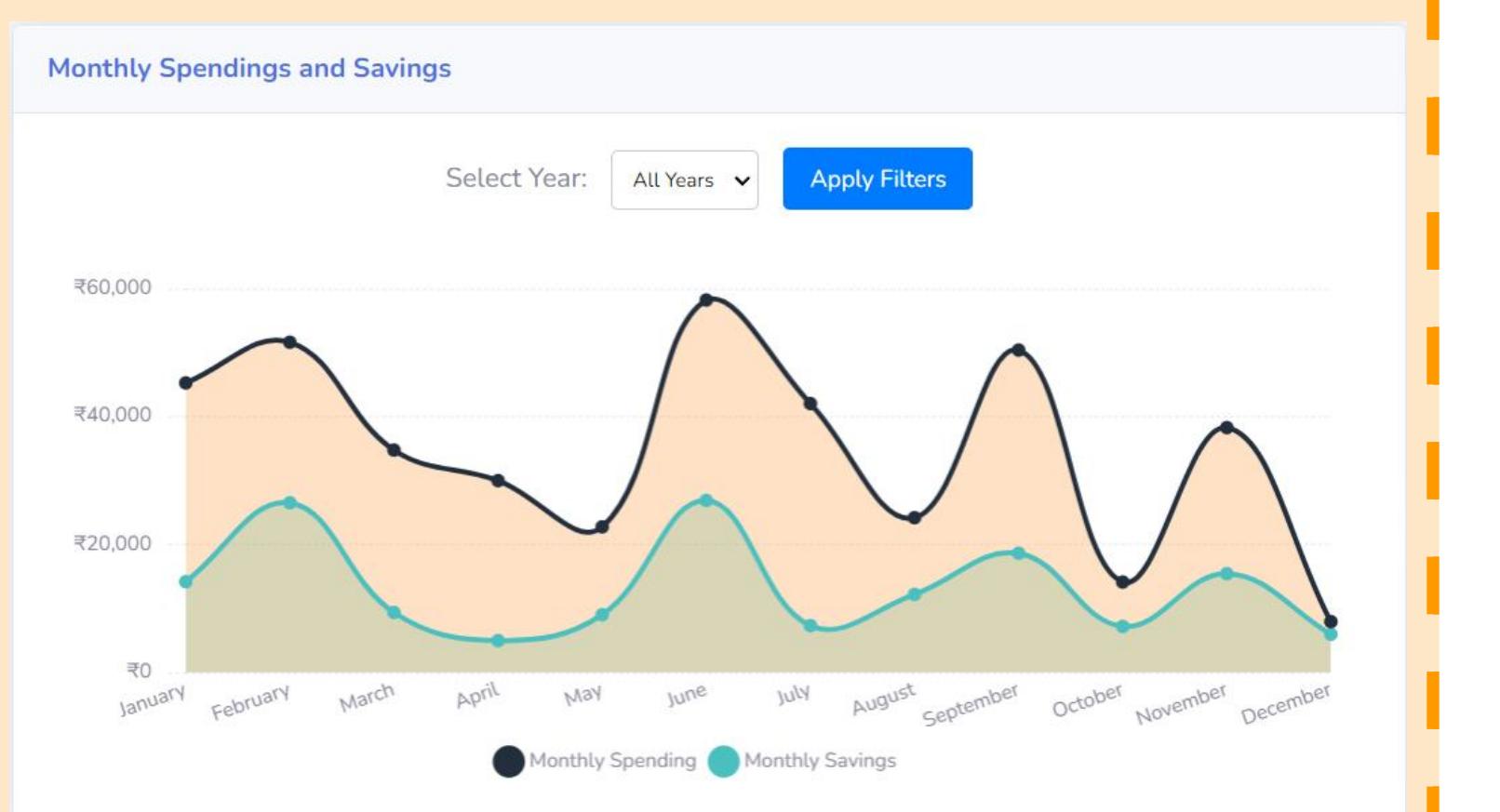


Spendings and Savings Analysis

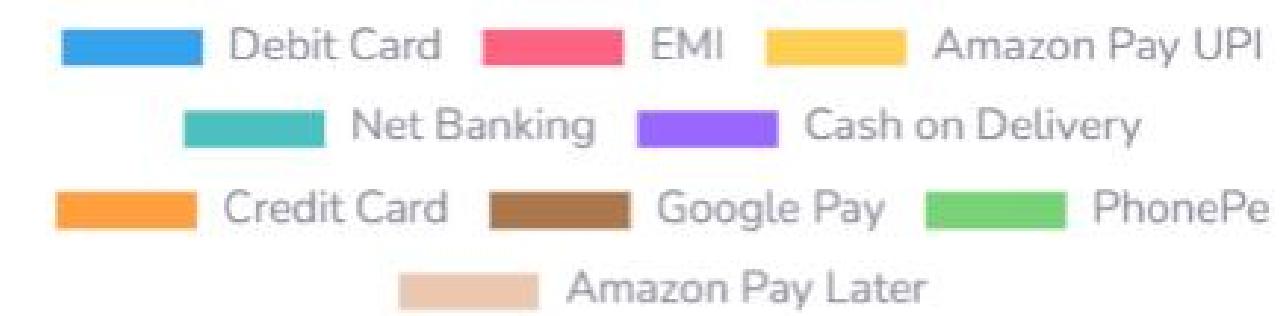
Spendings and Savings by Item Category



Monthly Spendings



Spendings through payment methods



- > A spending plot provides visual clarity on where money is being spent, helping to identify patterns and trends in various categories like food, entertainment, and utilities.
- > It assists in effective budget allocation and goal setting by showing which categories consume most of the budget, thereby helping to plan and control expenses better.
- > For better insights a user can apply filters as per his/her convenience.
- > Easily identify spending patterns and trends over time, helping to understand when and why spending increases.
- > It assists in effective budget allocation and goal setting by aiding in planning for future expenses, savings goals, and debt repayment, providing a clearer overall financial picture.



Financial Manager



Spendings Rewards and Milestones



Customers no longer need to worry about spending. Now, they can spend and unlock exciting rewards!

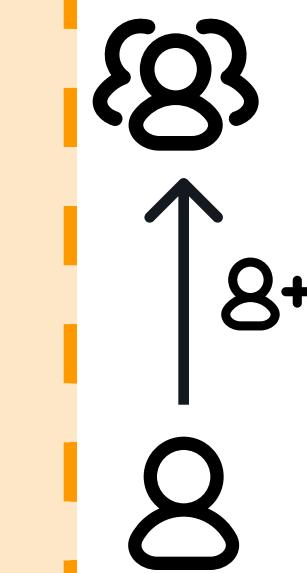
Business Relevance

Now customers when think about buying anything will first consider Amazon as the option because on spending then are getting exciting prices which also include prime subscription.

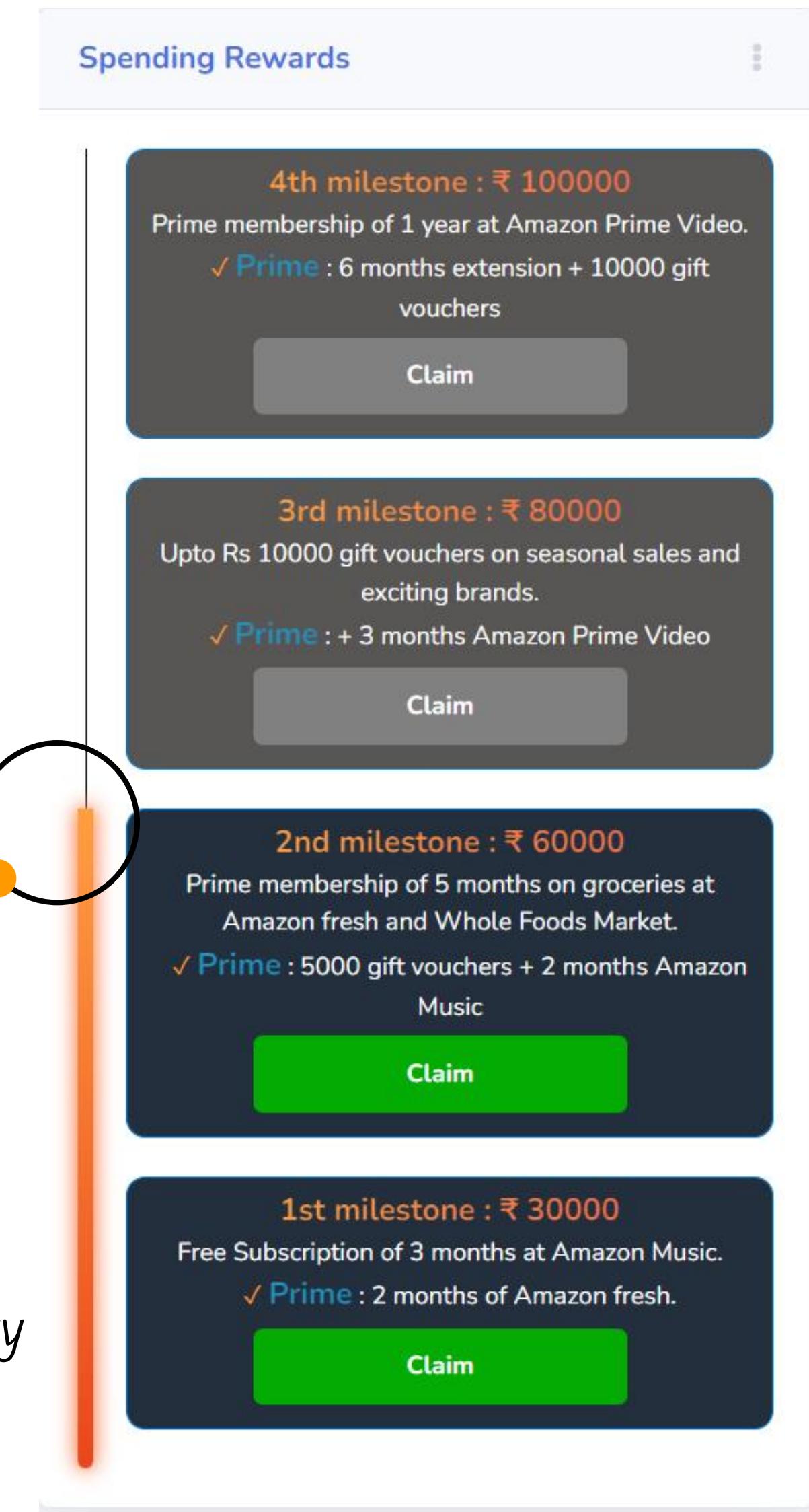
This will increase the customer traffic on amazon.

How will Dashboard help ?

Customer can spend without keeping the track because the dashboard is keeping track of the spending and as soon as a reward unlocks it notifies the user. Making the spending process hassle free.



This shows the spending indicator for the users and unlocks each reward at every step.





Financial Manager



Customer Purchases



Apple iPhone 14 (128 GB) - Blue

₹62,800

Buy Again

Suggestions

- Similar product : Iphone 15 pro
- Get this product : Extra 20% off(On Sale)
- Offers applied : 6 offers applied

Shop Now

Suggests similar products or price drops on the products and also updated versions of the products available like mentioned here for Iphone.



NIKE Mens Full Force LoRunning Shoe

₹6,626

frequently bought

Buy Again

Suggestions

- Similar product: Nike Mens Jordan 1 Retro High Sneaker
- Get this product: Extra 40% off on Axis Bank credit card
- Offers applied : 3 offers applied

Shop Now

Provides a tag of frequently bought if a customer has bought the items multiple times.

Business Relevance

- Keeps customers engaged with price drops and new product versions. Increases transaction value by suggesting complementary products.
- Reinforces customer loyalty by recommending brands they trust. Makes customers feel valued with personalized suggestions. Higher likelihood of purchase from trusted brands.
- Encourages purchases by showcasing popular items. Helps customers quickly identify trusted products. Helps in understanding demand and managing stock efficiently.

We recommend shoes from the same company, as the customer frequently buys their products and trusts the brand. Additionally, take advantage of our special offers that significantly reduce the price of the current order.



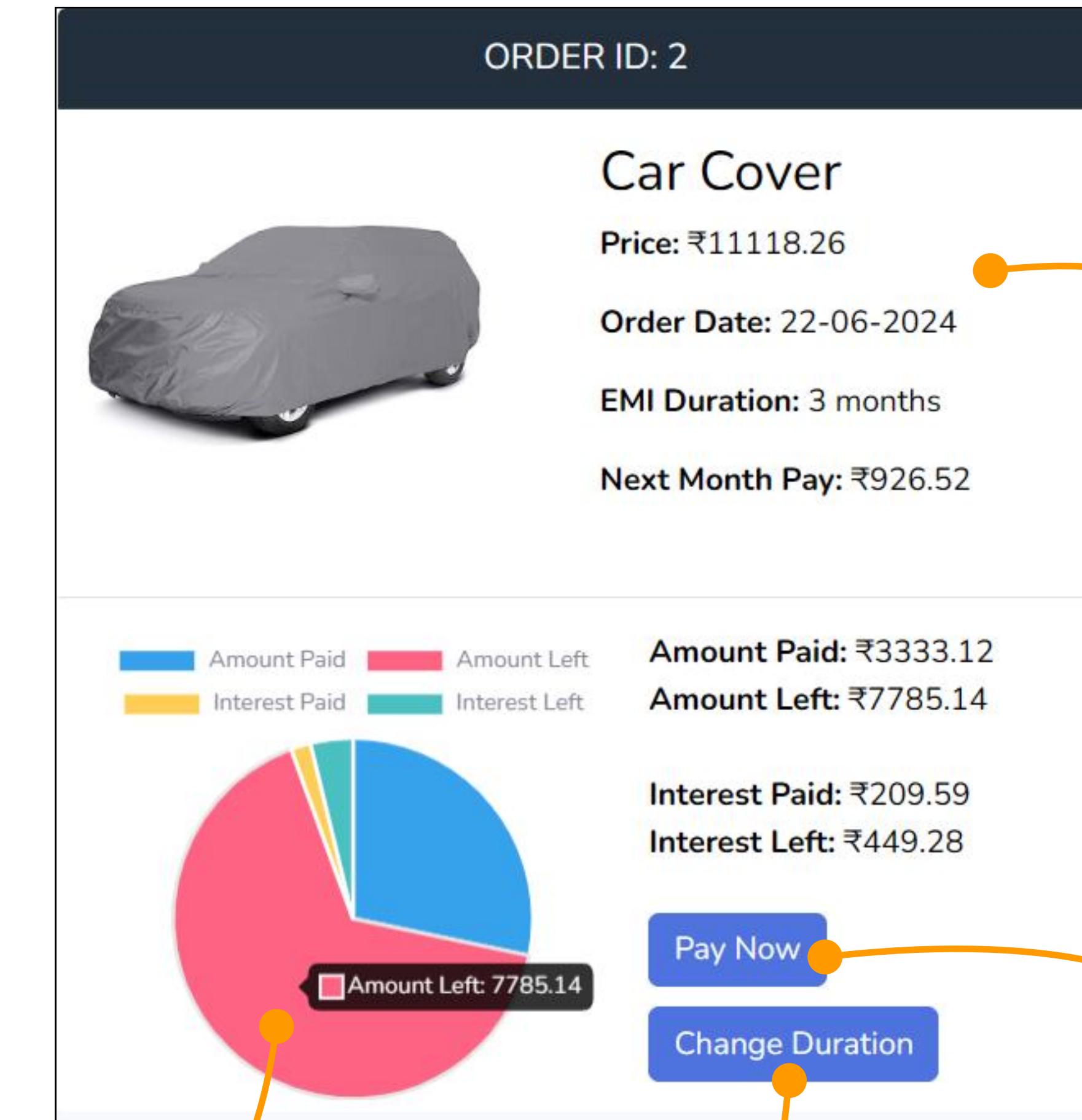
Financial Manager

EMI Track and Analysis

Business Relevance

- › People do not hesitate to do multiple EMIs because all the EMIs are managed by the Dashboard service so they can rely on spending on products and then pay later.
- › This will increase the business of Amazon Pay. Because this service provides the most easiest way to avail EMI along with providing latest offers.
- › The pay now and change duration option provides a free hand to the customers to pay as per their need so now the customer can rely completely on EMIs for payment so this will definitely rise the sale.

Graphical representation of the amount paid, amount left, interest paid, interest left. This visualization makes the user aware of the amount left at a glance.



Provided all the EMI information with EMI duration and next month pay. Providing all the relevant information to the user which all the user intended.

This button allows the user to pay the full amount immediately, provided they have the necessary funds available.

This button enables the user to change the duration of the EMI and the interest will be adjusted accordingly.



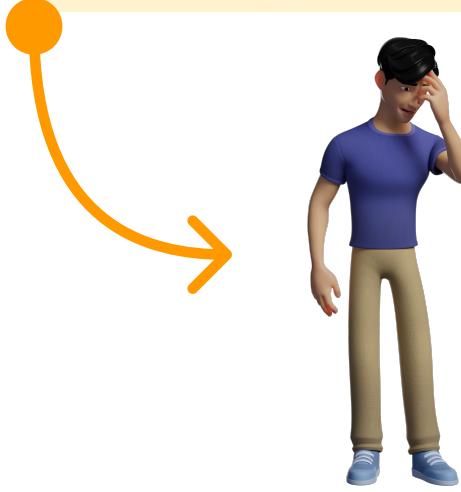
Financial Manager



Budget Manager

Notify the user on budget limit

Warning: You have reached 70% of your budget limit.



Worried about budget

Now no need to worry, here we have solution for the customers.

Don't Worry Rishav 😊 !!

Amazon is here to help you manage the budget and continue your shopping.

- You can continue buying products with the Amazon Pay Later feature.
 - EMI options available from different banks with varying interest rates:
 1. HDFC Bank credit card: 6% per annum
 2. ICICI Bank: 7% per annum
 3. Axis Bank: 8% per annum



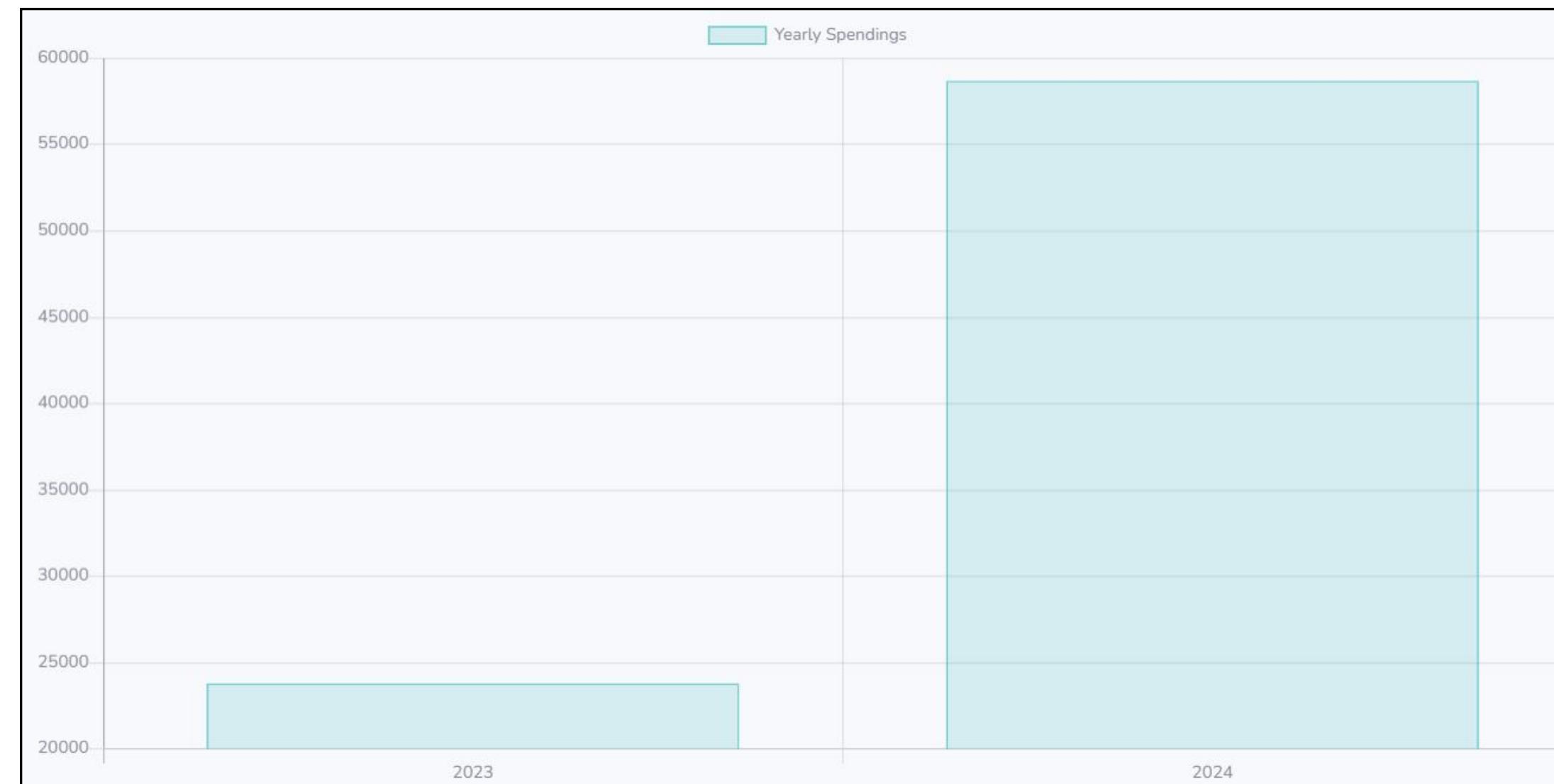
Business Relevance

A budget manager tool is designed to provide convenience to customers to set their budget limit and be aware of their spendings. Because customer emotions are first priority !!

But here we could increase the business !!

We highly recommend **Amazon Pay services**, which offer EMI solutions with exciting offers. This is a perfect solution for users who need to make urgent purchases but are constrained by budget limitations.

Yearly Spendings Tracker



Monthly Spendings Tracker





Success Metrics For ChatBot



Business Metrics

Total Number of Customers

The personalized and efficient support provided by the chatbot is likely to attract and retain more users, leading to an increase in the number of customers using Amazon's payment services.

Customer Lifetime Value (CLV)

By addressing customer issues more effectively and enhancing the overall user experience, the chatbot can increase the average CLV. Satisfied customers are more likely to make repeat purchases and remain loyal to Amazon.

Sales Metrics

Lead to Customer Conversion Rates

By resolving payment issues quickly and accurately, the chatbot helps in converting potential leads into paying customers.

Customer Acquisition Cost

Automating customer support with the chatbot reduces the need for extensive human intervention, lowering acquisition costs.

Customer Success Metrics

Net Promoter Score (NPS)

A well-designed, responsive chatbot that resolves queries efficiently can significantly boost customer satisfaction and loyalty, reflected in a higher NPS.

Customer Retention Rate

Personalized interactions tailored to user categories can improve retention rates by ensuring customers feel valued and understood.

Customer Feedback

Positive feedback and testimonials about the chatbot's performance can serve as qualitative evidence of its impact.

Customer Churn Rate

Efficient resolution of payment queries reduces frustration and prevents customers from leaving, thereby lowering the churn rate.

Human Resource Metrics

Employee Satisfaction

Reducing the workload on human customer service agents by automating responses to common queries can lead to higher employee satisfaction and retention.

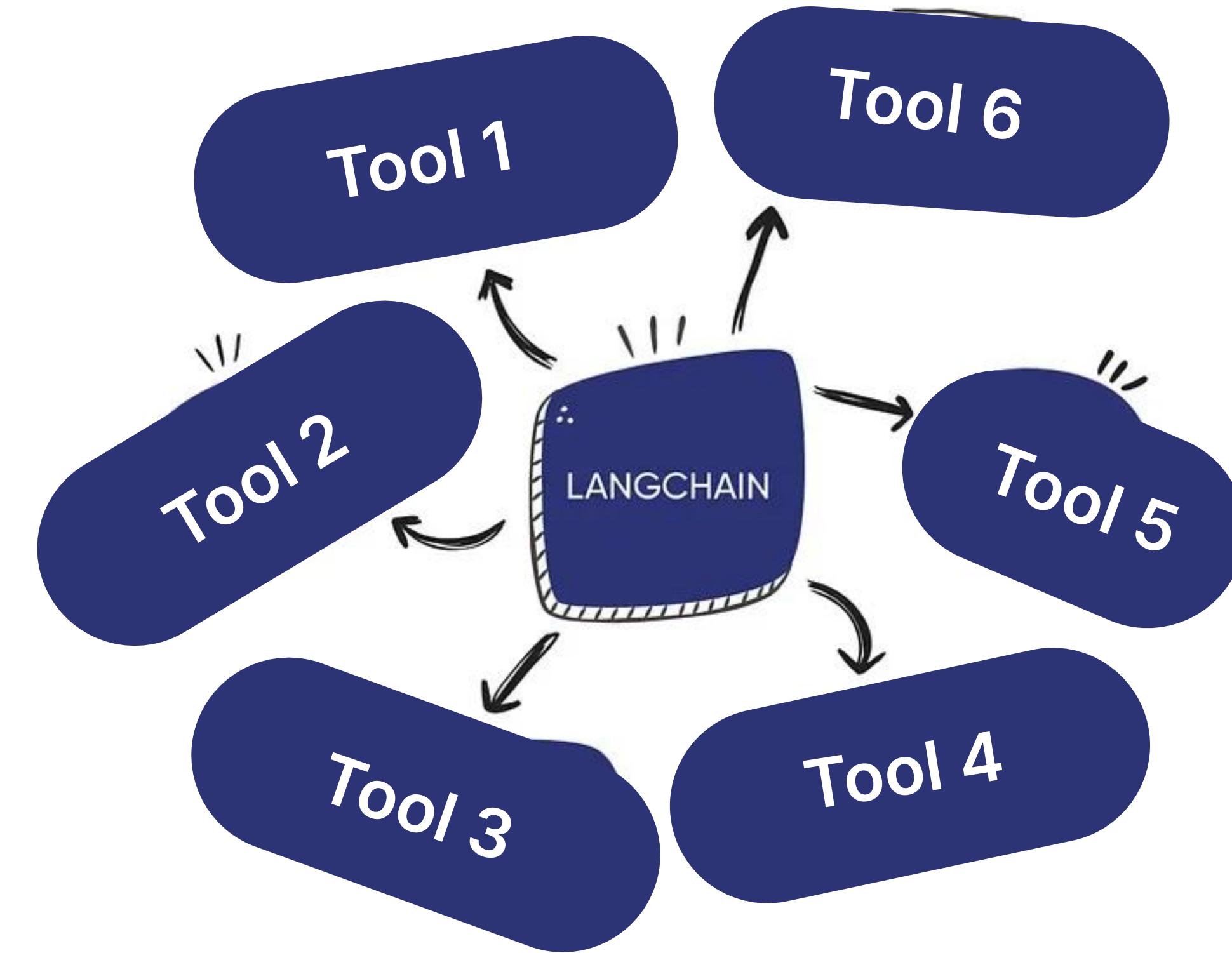


Scalability



ChatBot Model

- Break down the chatbot functionalities into microservices. Separate the query handling, session memory, backend data fetch, and other services. This ensures that individual components can scale independently.
- Utilize scalable cloud infrastructure like AWS. Services like AWS Lambda can help in handling varying loads with serverless architectures.
- Use managed database services like Amazon RDS, DynamoDB, to ensure scalability and high availability.
- Implement caching using Redis or Memcached to store frequently accessed data and reduce database load.
- Ensure efficient and quick search capabilities using Elasticsearch for fast and relevant query results.
- Regularly update the NLP models and system components based on the latest data and user feedback to improve accuracy and performance.



Langchain is highly scalable. For company like amazon which is delivering new services every next day it becomes very important to tune the chatbot. So langchain provides the ease to create the tools for the respective services and provide it to the langchain to solve queries on the particular service.



Thank You !!