

AIML-based Chatbot for an E-Commerce

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Abstract—The e-business has completely changed the way of selling products and E-commerce is one of the e-business models which predominantly do business over the internet. This paper describes an e-commerce website along with aiml based chatbot and razor payment gateway facilities. The biggest problem of this field is the quality of customer service they provide. In all e-business models, customers have to wait a long time to get response from customer representative. Especially in live chat, where they talk to multiple customers at the same time. The answers may also be inconsistent as they copy the pre-written paste answers. Also, in this field of online services the slow response and the long wait time for the services agents is the biggest headache. However, including chatbot makes it easy to interact with the website. The bot understands and communicates with the user in simple language. This study proposes a smart chatbot system based on Artificial Intelligence Markup Language (AIML) that can be used as an e-commerce assistant. The created chatbot is linked to our e-commerce website. This website has a wide variety of products with different features. Chatbots can help users decide the right product that suits them.

Index Terms—E commerce, aiml, chatbot, payment-gatewaay

I. INTRODUCTION

Currently, the conventional market is starting to be replaced with many online markets. E-commerce (Electronic commerce) has become a revolution, influencing both marketers and the customers. This significant change in the business model has witnessed tremendous growth worldwide. The massive penetration internet has added to the growth of E-commerce and especially start-ups have been using this option as a divisive business model. E-commerce (electronic commerce) website provides a platform the activity of electronically buying or selling of products on online services or over the Internet. Send directly to customers via online shopping websites for retail and through mobile apps and conversation commerce via live chat, chatbot and voice assistant. It is another way to promote current business practices and is leading to a complete change in the traditional way of doing business. The e-business has massively increased their sales by attracting customers. The number of users of e-commerce sites is increasing day by day. Consumers can buy products anytime, anywhere. Therefore, customer service is a very difficult task for them. This service definitely requires a lot of money when done manually. Chatbots can be set up for small talk, or they can work as how to communicate with users, providing them with answers based on common questions. Conversation understands the context and conveys the answer

accordingly the given message. Chatbot is just one of many examples of AI. Chatbots was originally designed as a form of entertainment

Chatbots can be used as a solution to automate online purchases. Today many websites rely on menu-based navigation and search bar to provide user information. However websites with a lot of poor content and navigation can make it difficult for the user to find information easily and quickly. For example, if you are considering an online shopping site, it has a large catalog of products. Browsing through products can be challenging and time consuming if you are offered a variety of features that a product may have. In this case the chatbot makes it easier for the user to access the information. The user has the option to chat with the bot and ask common questions to get answers.

We use AIML because creating chats using NLP / ML / Deep Learning takes a long time, but AIML helps to create chatbots easily, but the only problem is that you need to feed more and more data so that the bot can learn. The data here is not only about the question and its category, but also the question pattern. We also included a payment gateway facility RAZORPAY, to our website where the website can take online payment for customer orders. The payment gateway securely verifies the customer's card details, verifies that funds are available and ultimately allows merchants to make payments.

In other words, the payment gateway acts as an intermediary between your customer and the merchant, ensuring that transactions are done securely and quickly. The RAZORPAY payment gateway facilitates Credit/Debit Cards (Domestic and International Credit Cards issued by banks and institutions that are part of the Visa, and Mastercard Network), Net Banking, Wallet, UPI and QR Code. Payment Basically our website ventures into bouquets, plants, chocolates and cake business in an organised fashion where users can cart, wishlist and order the products of their choice and also giving customers the various delivery options like same day delivery, online payment etc. The project is developed on Django Framework; the backend development is in Python. The frontend consists of HTML, CSS and Java.

II. PROBLEM STATEMENT

Creating an AIML-based chatbot for an e-commerce website with payment-gateway features.

A. Objectives:

- Creating a website for an ecommerce business .
- Building an AIML based chatbot to interact with customers.
- Integrating payment gateway.

III. LITERATURE REVIEW

[1] In this paper authors created An Ecommerce website based chatbot using MySQL database and chatterbot and they stored the chatbot responses for a better user interaction. To create an website they used HTML/CSS and PHP as the Scripting language.

Authors in [2] proposed the technical presentation of Artificial Linguistic Internet Computer Entity (A.L.I.C.E.) as well as Artificial Intelligence Markup Language (A.I.M.L.) and created an chatbot that is able to interact with users.

[3] In this paper authors created Appropriate SDLC Model and Testing techniques have been used in the development process. Each step of the SDLC Model (Iterative Model) is described thoroughly and respective ER Diagrams and Flow Charts have been shown and project works as an Educational cum E-Commerce Website and thus students can donate or sell their old books too.

IV. METHODOLOGY

Creating this website involves HTML, CSS ,Javascript and Bootstrap in front end and Django framework is used in backend.The technologies used in this project are discussed briefly in the following sections.

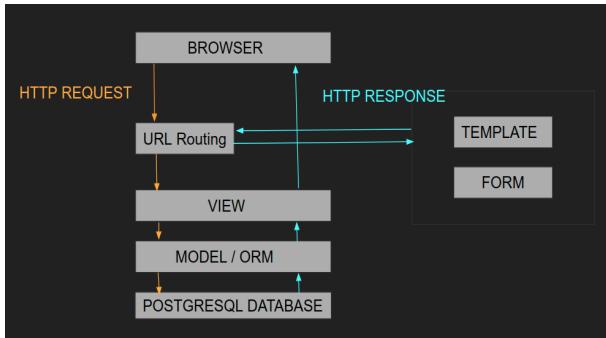


Fig. 1. Django Architecture diagram

A. Front End Technologies

HTML stands for Hypertext Markup Language, and is the language most widely used to write Web Pages. Hypertext refers to how Web pages (HTML documents) are linked. As its name suggests, HTML is Mark-up Language which means you can use HTML to simply "make-up" a text document with tags that tell the Web browser how it is to organize to

display.

CSS represents Cascading style spreadsheets. CSS describes how HTML objects will be displayed on screen, paper, or other media. CSS saves a lot of work. It can control multiple web page layouts all at once.

JavaScript (JS) is a high-level, interpreted system language. JavaScript has curly-bracket syntax, model-based object-orientation, and first-class functions. Combined with HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is a crucial part of web applications. Most websites use it, and major web browsers have a dedicated JavaScript engine to execute it. JavaScript supports event-driven and imperative styles (including prototype and object-oriented based).

Bootstrap is a free and open source CSS source dedicated to responsive, advanced web responses. Contains CSS and JavaScript(optional) typed design templates, forms, buttons, navigation, and other interface components. To use bootstrap, we need to install it in our system or use a CDN. The CDN is short for content delivery network. A CDN system is a distributed server system that delivers pages and other web content to a user, depending on user geographic locations, origin the webpage and content delivery server.

B. Chatbot

Chatbot can be used as a solution to give responses to the user queries automatically in online. Then the bot will provide the response based on the query given by the customer. Here we are creating an intelligent chatbot system based on Artificial Intelligence Markup Language (AIML) which can be used as an e-commerce assistant.

The purpose of AIML language is to simplify the work of chat modeling, in the process of "refresher response". It also markup language based on XML and depends on tags which are the identifiers that make snippets of codes to send commands into the Chatbot. The data object category says defined in AIML, as an AIML object, and the responsibility of these items measure conversation patterns. Each AIML object is the language tag that associates with a language command using patterns. The function of the category tag describes the various patterns and their templates based on the answers. Input questions from users will be processed through three stages, namely, parsing, pattern matching and crawling data using AIML. The task of parsing is to parse the input in such a way that the pattern can recognize the query. The pattern tag identifies input from the user and the function of the template tag to respond to a specific input from the user, these are the most common tags and foundations for building AIML Chatbots with intelligent responses to native language conversations.

C. Back End Technologies

This website is developed using the django framework where all the backend and the functionalities associated with it are coded in python. Our ecommerce website consists of four categories: Chocolates, cakes, plants and bouquets and for the same “Item” model represents all the characteristics associated with it. Attributes of Item model consist of title(storing the name of item).price, discounted price(price after applying discount), description and item image.

Cart model and Wishlist model helps in storing information about items which are added to cart and wishlisted respectively. Cart model forms a parent child relationship with Item and predefined User model(provided by django) along with the quantity of a particular item added to cart. Functionalities like remove from cart, incrementing or decrementing the quantity of product have been deployed along with the integration of razorpay payment gateway for checkout purposes.

And the wishlist model, same as the cart model, forms a parent child relationship with Item and User model. This includes the functionality of moving the product to the bag or removing it from wishlist.

Website also provides authentication facilities and also allows the customers logged in from the same credentials to enter different addresses and select one of them while dispatching. Addresses for customers are stored using a Customer model which provides information relating to name, gender , phone number, address and forming a parent child relationship with the User model.

Finally Order Status model depicts order history by storing the details of products which are ordered along with the ordered date and the customer details who ordered it from the same id. This also provides information relating to order status such as dispatched, delivered, pending, packed, on the way. By default it is considered to be pending. We have created our own database which for now consists of 21 instances for each category.

CONCLUSION

In this project, we have created a website-based chatbot which is able to interact with users along with the payment-gateway. Chatbot is useful for the users to ask queries based on the website and the current date and time and it will even redirect to the categories which we want. And by Using an online payment gateway, customers can make payment through online, thus ensures security by encrypting data like card and bank details that have been provided by the user thereby accepting payments through various payment modes. In the future, we can make a chatbot using AIML and LSA, which allows the communication between client and chatbot in a more natural way. We can enhance conversation by adding and changing patterns and templates for client client questions

using AIML and the correct answer is given more often than the LSA and can add more items in the database.

RESULT AND ANALYSIS

Below are the snapshots of our e-commerce website integrated with chatbot along with payment gateway (RAZOR-PAY).

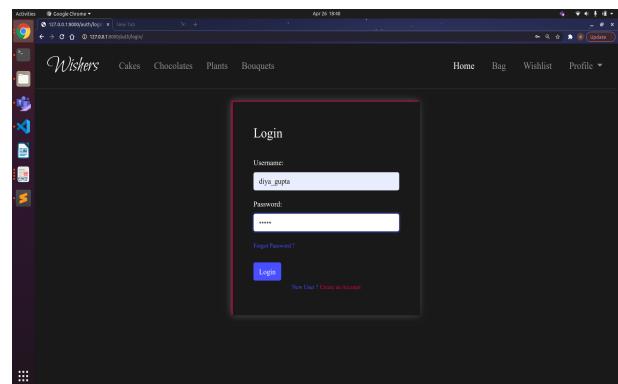


Fig. 2. Login page

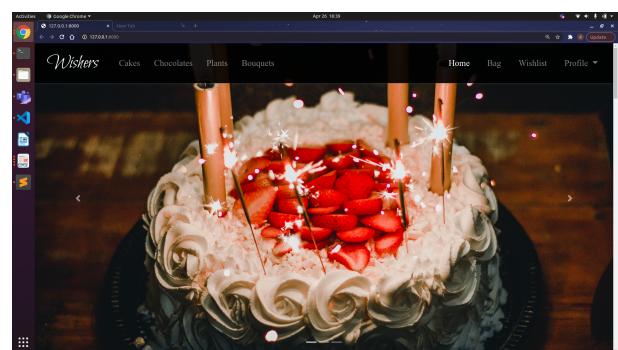


Fig. 3. Home page

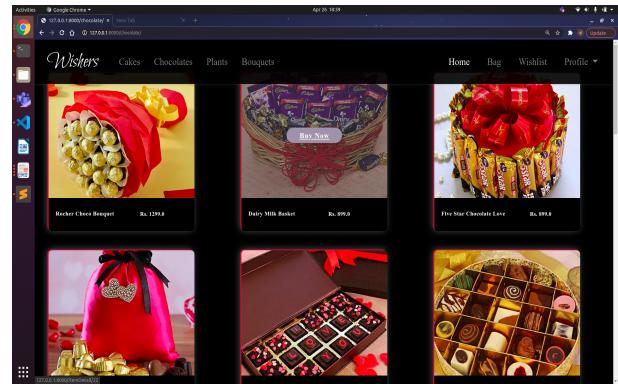


Fig. 4. Product page

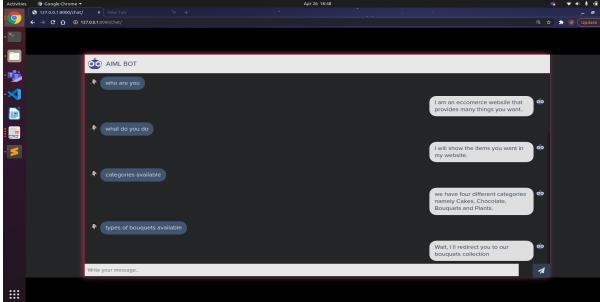


Fig. 5. Chat bot

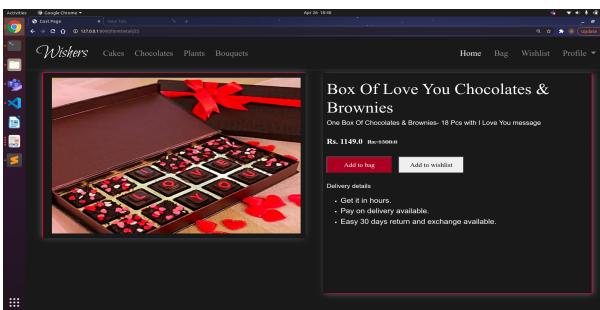


Fig. 6. Product details page

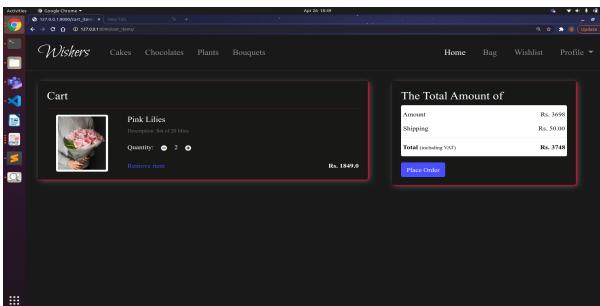


Fig. 7. Add to Cart page

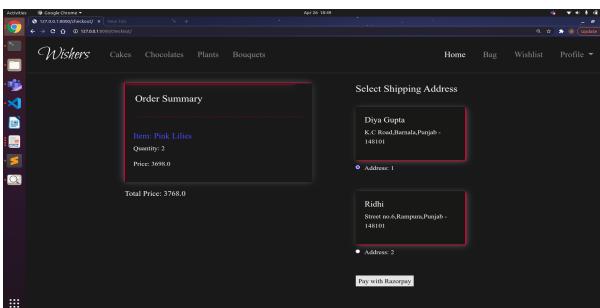


Fig. 8. Check out

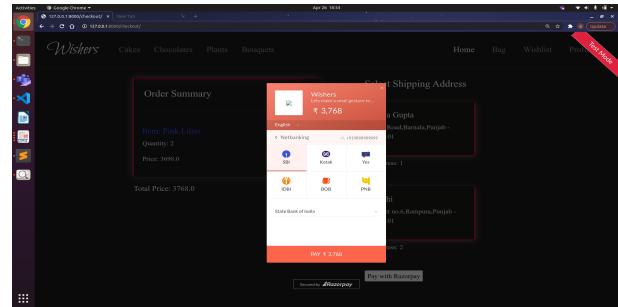


Fig. 9. Payment Gateway

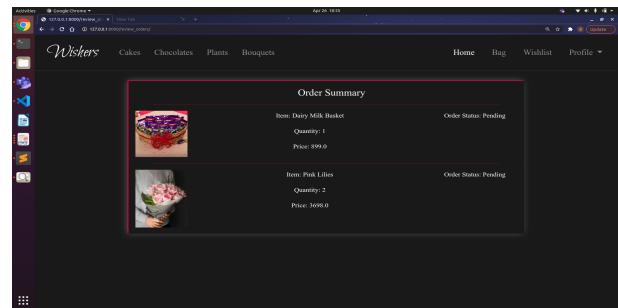


Fig. 10. Order Summary

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