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Smart Fashion Recommendation Application

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ABSTRACT: Fast fashion has grown significantly in the textile and apparel industries during the past few years. A strong recommendation system is needed to organize, arrange, and effectively present users with pertinent product content or information in e-commerce platforms with a wide range of possibilities. In recent years, people and style have become increasingly connected. Making judgments is challenging for them since they must manage a wider product base. Because they give customers a personalized buying experience, image-based fashion recommendation systems (FRS) have garnered a lot of attention from fast fashion shops. This subfield of artificial intelligence has a lot of potential for image processing, analysis, classification, and segmentation because of technological improvements. Users can search through enormous product collections with the aid of recommender systems to identify appropriate items. Customers now face additional difficulties choosing the appropriate outfit as a result of the trend of overabundant clothing alternatives on e-shop websites. In addition, it might be challenging to find products that are similar because precise and thorough product information is sometimes unavailable. Instead of navigating through numerous screens, a user can book things immediately by utilizing a product chatbot in our intelligent fashion suggestion system. Using programs like Python, Flask, and Docker, we incorporate functionality like promotion, sending notifications, and so forth. Our algorithm can make recommendations for things that are suitable for you while also saving you a ton of time.

KEYWORDS: Smart recommender, e-commerce, Chat-bot, e-shop, save time

I. INTRODUCTION

The primary internet marketing strategy employed by e-commerce companies is fashion endorsement. The majority of recommendation engines are based on consumer evaluations and ratings of goods that have already been purchased. The elements that affect customer acceptance, forecasting and production, trend analysis of color palettes, and conversion agents known as chatbots have all been studied in studies involving artificial intelligence and fashion as a discipline. Chatbots can provide tailored purchasing experiences across both offline and online channels, all while promoting customer well-being. The popularity of e-commerce, particularly for fashion items, is facilitated by chatbots, which can be thought of as a natural user interface for users that enables a more intuitive connection with the computer through natural language.

II. OBJECTIVE

Create a chatbot-powered fashion recommendation software that gives people sage advice. Create a chatbot with IBM Watson Assistant that suggests clothing depending on user preferences. establishing the Python-Flask application environment. Create an interface for users to interact with the web application and build IBM DB2 with Python. To set up the application on IBM Cloud. Users of the software can get prompt and precise results. to create and employ a chatbot program. to perform a product search. to include items in the shopping basket. to provide product recommendations to users.

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III. LITERATURE SURVEY

[1] A summary of the User Attributes supported by attire Matching and Recommender Systems (Atharv Pandit, Kunal Goel, Manav Jain, Neha Katre, 2020-09-03).
In this paper, an in-depth examination is made of various systems developed for various functions that must be kept in mind whereas developing a strong system that finds matching user consumer goods and makes recommendations.
[2] an Interactive Knowledge-Based Recommender System for Fashion Product Style in a Big Data Environment (Min DONG).
To create this technique, measurement data and the designer's perception of body shapes were obtained using a 3D body scanning system and a sensory analysis procedure.
[3]. System for Recommending Fashion Outfits (by Nikita Ramesh, 2018).
Visually based recommendations have gained popularity in recent years thanks to this recommendation system.
[4]. Clothing Design and Realization Style Recommender System (Tariq Hussain).
Online shopping has grown faster in recent years. These referrals are used by both customers and Desired businesses, where the client can easily discover them.
[5]. Smart Shop Assistant - uses semantic technologies to improve online shopping. (German: "iD2010 – Informationsgesellschaft Deutschland 2010").

IV. METHODOLOGY

The investigation of consumer satisfaction with internet buying employed secondary data. Websites, periodicals, and pieces from literary reviews served as information sources. In order to collect primary data and conduct research among respondents who have experience with online buying, the author has compiled all the motivating aspects described below in a form.
The dynamic allocation of individual user data is managed by a cloud resource. The app provides case data for each zone and infection level. The app has a chatbot that answers questions.

V. CLOUD DB2

A collection of data that is managed as a single entity is called a Db2 database. The goal of a database is to store, retrieve, and alter linked information. A database is a sizable structured collection of persistent data.

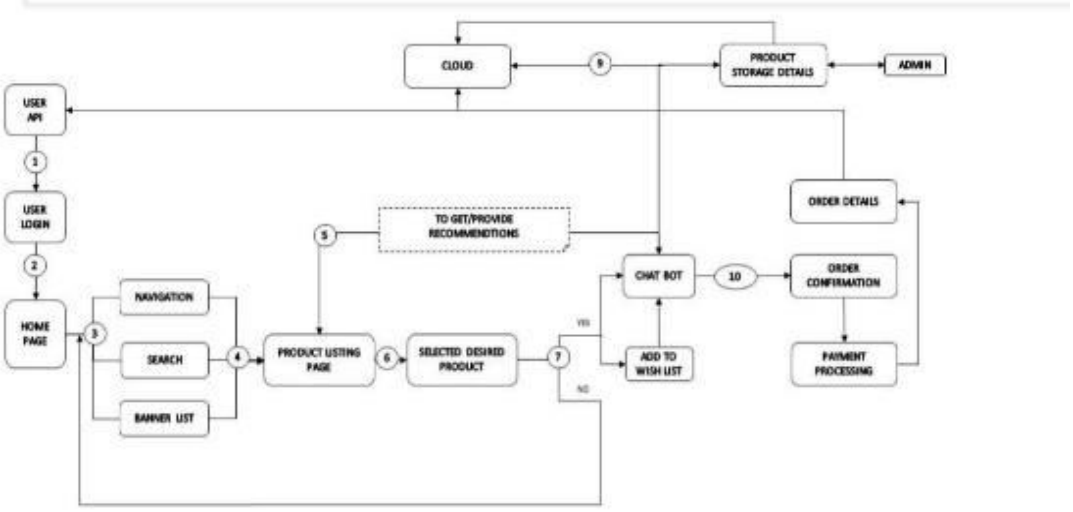

Fig 1

Access to logical storage structures can be controlled without impacting physical data storage. Data Definition Language, or DDL, statements are used to build Db2 databases, which are made up of table spaces, tables with rows and columns, views, indexes, stored procedures, and other supporting structures. Once constructed, a Db2 database and its underlying structures may be used by a database administrator or developer to create, read, update, and remove data to serve the business needs of an organization. Effective compression can reduce storage requirements without compromising performance. It is possible to evaluate several query predicates without first needing to decompress the data.

VI. KUBERNETES CLUSTER

It is possible to plan and automate the deployment, management, and scaling of containerized applications. Virtual machines are the foundational building blocks of modern cloud infrastructure and are maturing into a universal computing platform and ecosystem that rivals, if not surpasses, virtual machines as the foundational building blocks of modern cloud infrastructure.

VII. CONTAINERS

The operating system libraries and dependencies required to run the code in any context are combined with the application source code in containers, which are compact application components. Cloud containers isolate processes and regulate the amount of CPU, memory, and disc space that these programs have access to. This enables several applications to share a single instance of the operating system. A virtual instance of the application can be offered if you have a MySQL container. At the application level, containers establish an isolation border. If something goes wrong in that particular container, the process's high resource use will only have an impact on that one container and not the entire server. Amazon Elastic Container Service is one of the well-known cloud companies that provide containers as a service. Without the need for specialized products from a cloud provider, container deployment may be done on public or private cloud infrastructure.

VIII. CLUSTERS

The foundation of the Kubernetes design clusters. Nodes, which each represent a single compute host, make up clusters (virtual or physical machines). A master node acts as the cluster's control plane, while several worker nodes deploy, operate, and maintain containerized applications on each cluster. The scheduler service, which is executed by the master node, automates the deployment of containers depending on the developer-specified deployment criteria and the available computational capacity. A mechanism for managing containers is present on each worker node.

IX. ASSITANT CHATBOT

Across any messaging platform, app, device, or channel, Watson Assistant's virtual agent provides clients with quick, dependable, and accurate replies. Watson Assistant improves its problem-solving abilities by learning from client discussions using artificial intelligence and natural language processing. By integrating a conversational interface into any app, device, or channel, we can do so for the first time while removing the annoyance of protracted delays, tiresome searches, and pointless chatbots. The majority of virtual assistants attempt to simulate human interactions, but Watson Assistant is intelligent enough to recognize when to ask for clarification, when to search the knowledge base for an answer, and when to refer a user to a person. The virtual assistant your design works with your clients to execute tasks and respond to inquiries much like a human personal assistant would. You provide activities for assistance to do this. The interaction may then continue as the assistant seeks out further details before coming to an end when the customer's request is fulfilled or a query is resolved.

X. ALGORITHM

Environments using Kubernetes are becoming widely dispersed. They may be set up in several on-site data centres, public clouds, and edge locations. Organizations wishing to deploy Kubernetes at scale or in production will need to effectively manage many clusters spread across environments, such as those for development, testing, and production. The IT team controls a collection of Kubernetes clusters using Kubernetes cluster management.Your jobs are executed by Kubernetes by putting containers in Pods that operate on Nodes. Depending on the cluster, a node may be a real or virtual machine. Each node includes the services required for the operation of the modules and is managed by the control plane. In a cluster, there are often numerous nodes; in a learning or resource-constrained context, there can only be one node. The API server receives all API usage from nodes (or the modules they run). The other parts of the control plane shouldn't expose any remote services. For the cluster to securely connect to the API server with valid client credentials, nodes need to be furnished with a public root certificate. It's a good idea to give the kubelet client credentials in the form of client certificates. The control plane (API server) and the nodes are connected by two main communication channels. The first is from the kubelet process, which is running on each node in the cluster, to the API server. The other is via the API proxy function from the API server to any node, pod, or service. To secure the communication pathways from the control plane to the nodes, Kubernetes offers SSH tunnels. In this setup, the API server connects to an SSH server listening on port 22 and initializes an SSH tunnel to each node in the cluster. All communication going to the kubelet, node, pod, or service is then routed through the tunnel. This tunnel makes sure that no traffic is accessible to networks other than the one the nodes are connected to.

XI. FLASK INTEGRAGION IN CLOUD

Simplified procedure for designing web applications. Flask gives us the ability to concentrate on user requests, decide what type of answer to provide them, and create a local host URL. It refers to this local computer, 27.0.0.1. The essential notion is that 127.0.0.1 and localhost relate to this local computer if you don't know what it means (as I didn't when I started; this article is incredibly instructive).

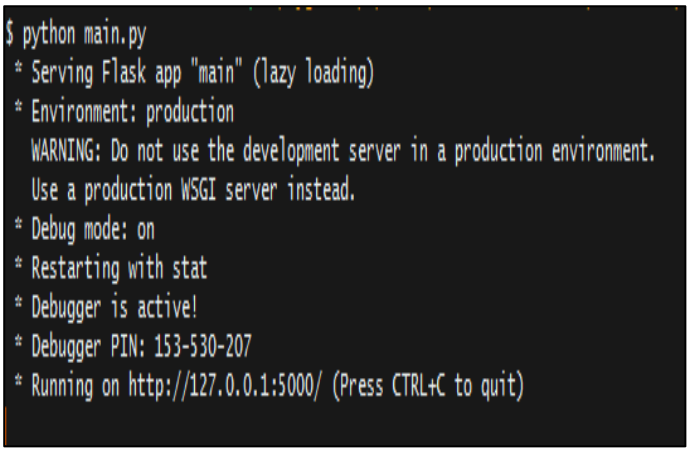

Fig 11.1

XII. RESULT

The Kubernetes cluster is utilized to train the application used for the Smart Fashion Recommender utilizing a cloud database. To update the data every day, several cluster nodes carry out this operation. If there are any changes, the Kubernetes cluster will update the database after comparing the new data with the old data. Every day, the procedure would be repeated.

XIII. OUTPUT

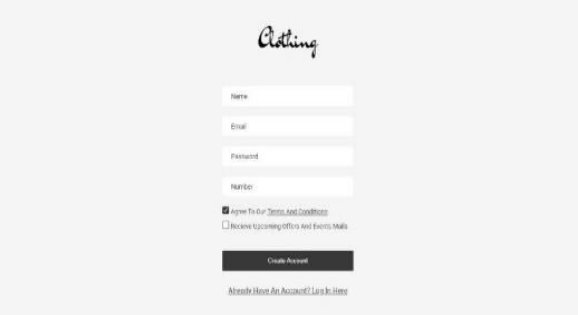

Fig 13.1

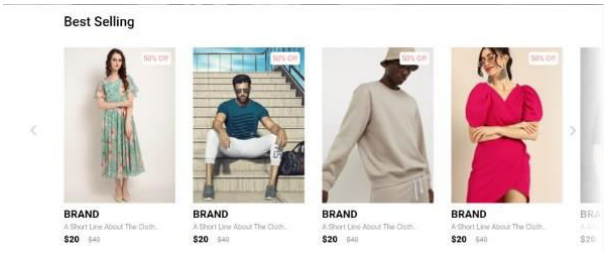

Fig 13.2

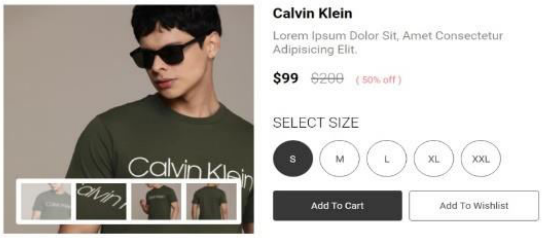

Fig 13.3

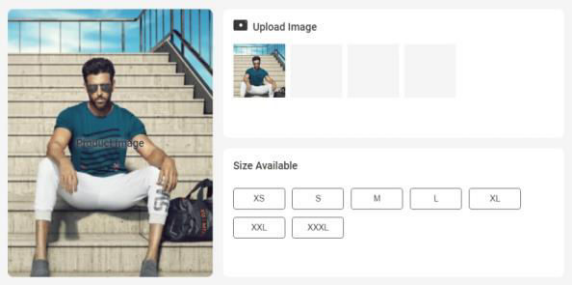

Fig 13.4

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XIV. USER CHATBOT

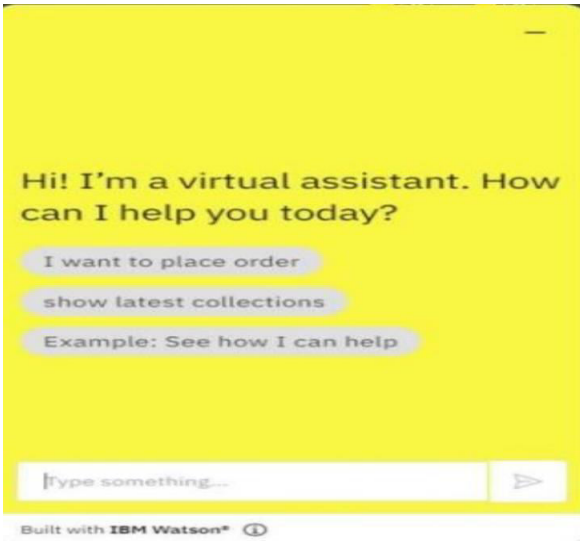

Fig 14.1

XV. CONCLUSION

In this project, we introduced a new framework for fashion recommendations that is data-driven, aesthetically relevant, and a straightforward and efficient recommendation system for the generation of fashion product images. The suggested method employs a two-stage process. Our suggested solution, for example, enables users to input any random fashion image from any e-commerce website and afterward create images identical to the provided image based on photos and textures. Initially, our proposed approach extracts image attributes using a CNN classifier. input picture to increase the effectiveness of suggestions and enhance the entire fashion research experience for both direct and indirect customers, such a study must continue.

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