SMART FASHION RECOMMENDER APPLICATION

INTRODUCTION

We have come up with a new innovative solution through which you can directly do your online shopping based on your choice without any search. It can be done by using the chatbot. The role of the admin is to check out the database about the stock and have a track of all the things that the users are purchasing. The user will login into the website and go through the products available on the website. Instead of navigating to several screens for booking products online, the user can directly talk to Chatbot regarding the products. Get the recommendations based on information provided by the user.

Create a project and follow the flask documentation. Flask is a lightweight Python web framework that provides useful tools and features for creating web applications in the Python Language. It gives developers flexibility and is an accessible framework for new developers because you can build a web application quickly using only a single Python file. Flask will allow you to quickly create web applications in Python.

The IBM Cloud platform combines platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses. Globally deployed across data centers around the world, the solution you build on IBM Cloud spins up fast and performs reliably in a tested and supported environment you can trust!. Then install IBM CLI on your laptops by following the reference link Enable rapid application development and deployment by generating template applications that you can run immediately or customize as the starter for your own solutions.

To master Docker you need to start with a clear understanding of its architecture, and how each component of the Docker system interacts with the others. Let's look at Docker and its architecture and its various components in

detail. Let us first compare containers to their closest cousin – Virtual Machines. Then Create an account in Sendgrid. We use the services as email integration to our application for sending emails. SendGrid provides two ways to send email: through our SMTP relay or through our Web API. SendGrid provides client libraries in many languages. This is the preferred way to integrate with SendGrid. If you choose to use SendGrid without a client library, the Web API is recommended in most cases as it is faster, provides some beneft with encoding, and tends to be easier to use. SMTP provides many features by default, but is harder to setup.

Develop skills for recommendation in IBM Watson Assistant and Build a chatbot with IBM Watson Assistant to recommend the fashion based on the taste of the users. A chatbot is a software or computer program that simulates human conversation or "chatter" through text or voice interactions. Users in both business-to-consumer (B2C) and business-to-business (B2B) environments increasingly use chatbot virtual assistants to handle simple tasks. Adding chatbot assistants reduces overhead costs, uses support staff time better and enables organizations to provide customer service during hours when live agents aren't available. Chatbots have varying levels of complexity, being either stateless or stateful. Stateless chatbots approach each conversation as if interacting with a new user. In contrast, stateful chatbots can review past interactions and frame new responses in context. Adding a chatbot to a service or sales department requires low or no coding. Many chatbot service providers allow developers to build conversational user interfaces for third-party business applications. A critical aspect of chatbot implementation is selecting the right natural language processing (NLP) engine. If the user interacts with the bot through voice, for example, then the chatbot requires a speech recognition engine.

Implementation is the process of building the web according to its design. A web implementor creates hypertext markup language (HTML), Common Gateway Interface (CGI) programs, and/or Java scripts and/or applets.The implementation process resembles software development because it involves using a specific syntax for encoding web structures or a programming language in a formal

language in computer files. Although there are automated tools to help with the construction of HTML documents, a thorough grounding in HTML enriches the web implementor's expertise.

Containerize a Flask application by using Docker and deploy it to the IBM Cloud Kubernetes Service. It was build enterprise-ready mobile and web applications in IBM Cloud® and take advantage of cloud extensions that are hosted by IBM Cloud. You have several options for getting started. Create an app with a starter kit that manages the process for you, or if you know what you want, start from scratch and build your app with the resources you need. Or, use your existing repository and bring your own code.

PROBLEM SOLUTION FIT

- Using chatbot we can manage user's choices and orders.
- The chatbot can give recommendations to the users based on their interests.
- It can promote the best deals and offers on that day.
- It will store the customer's details and orders in the database.
- The chatbot will send a notification to customers if the order is confirmed.
- Chatbots can also help in collecting customer feedback.

ARCHITECTURE
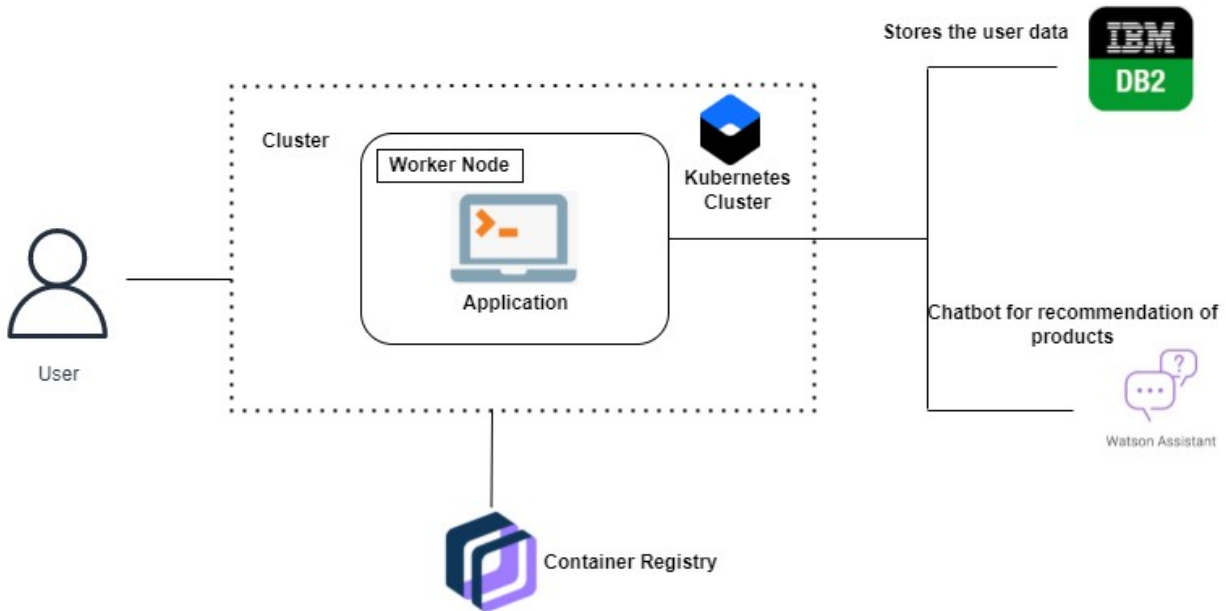
LITERATURE SURVEY

1. Chen, L., Yang, F., Yang, H.: Image-based product recommendation system with convolutional neural networks (2017)

   We are gather from this paper, It present a smart search engine for online shopping. Basically it uses images as its input, and tries to understand the information about products from these images. We first use a neural network to classify the input image as one of the product categories. Then use another neural network to model the similarity score between pair images, which will be used for selecting the closest product in our e-item database. We use Jaccard similarity to calculate the similarity score for training data. We collect product information data (including image, class label etc.) from Amazon to learn these models. Specifically, our dataset contains information about 3.5 million

products with image, and there are 20 categories in total. Our method achieves a classification accuracy of 0.5. Finally we are able to recommend products with similarity higher than 0.5, and offer fast and accurate on-line shopping support.

2. Häubl, G., Murray, K.B.: Double agents: assessing the role of electronic product recommendation systems. MIT Sloan Manag. Rev. 47(3), 8–12 (2006)

We are gather from this paper, Electronic information can easily overwhelm people with large volumes of data. An abundance of information often strains human limits: attention, memory, motivation, or other factors. In response to this challenge, software tools that assist humans in filtering and organizing information into more digestible amounts and formats have appeared. This article focuses on tools that provide online shoppers with personalized product recommendations and the benefits and potential difficulties consumers may experience when using such tools.

3. He, R., McAuley, J.: VBPR: visual Bayesian personalized ranking from implicit feedback. In: AAAI, pp. 144–150 (2016)

We are gather from this paper, Modern recommender systems model people and items by discovering or `teasing apart' the underlying dimensions that encode the properties of items and users' preferences toward them. Critically, such dimensions are uncovered based on user feedback, often in implicit form (such as purchase histories, browsing logs, etc.); in addition, some recommender systems make use of side information, such as product attributes, temporal information, or review text.However one important feature that is typically ignored by existing personalized recommendation and ranking methods is the visual appearance of the items being considered. In this paper we propose a scalable factorization model to incorporate visual signals into predictors of people's opinions, which we apply to a selection of large, real-world datasets. We make use of visual features extracted from product images using (pre-trained) deep networks, on top of which we learn an additional layer that uncovers the visual dimensions that best explain the variation in people's feedback. This not only leads to significantly more accurate personalized

ranking methods, but also helps to alleviate cold start issues, and qualitatively to analyze the visual dimensions that influence people's opinions.

4. Liu, Z., Luo, P., Qiu, S., et al.: DeepFashion: powering robust clothes recognition and retrieval with rich annotations. In: CVPR, pp. 1096–1104 (2016)

We are gather from this paper ,clothes recognition have been driven by the construction of clothes datasets. Existing datasets are limited in the amount of annotations and are difficult to cope with the various challenges in real-world applications. In this work, we introduce DeepFashion, a large-scale clothes dataset with comprehensive annotations. It contains over 800,000 images, which are richly annotated with massive attributes, clothing landmarks, and correspondence of images taken under different scenarios including store, street snapshot, and consumer. Such rich annotations enable the development of powerful algorithms in clothes recognition and facilitating future researches. To demonstrate the advantages of DeepFashion, we propose a new deep model, namely FashionNet, which learns clothing features by jointly predicting clothing attributes and landmarks. The estimated landmarks are then employed to pool or gate the learned features. It is optimized in an iterative manner. Extensive experiments demonstrate the effectiveness of FashionNet and the usefulness of DeepFashion.

5. Schafer, J.B., Konstan, J.A., Riedl, J.: E-commerce recommendation applications. Data Min. Knowl. Discov. 5(1–2), 115–153 (2001)

We are gather from this paper, Recommender systems are being used by an ever-increasing number of E-commerce sites to help consumers find products to purchase. What started as a novelty has turned into a serious business tool. Recommender systems use product knowledge—either hand-coded knowledge provided by experts or "mined" knowledge learned from the behavior of consumers—to guide consumers through the often-overwhelming task of locating products they will like. In this article we present an explanation of how recommender systems are related to some traditional database analysis techniques. We examine how recommender systems help E-commerce sites increase sales and analyze the recommender systems at six market-leading sites. Based on these examples, we create a taxonomy of recommender systems, including the inputs required from the consumers, the additional knowledge

required from the database, the ways the recommendations are presented to consumers, the technologies used to create the recommendations, and the level of personalization of the recommendations. We identify five commonly used E-commerce recommender application models, describe several open research problems in the field of recommender systems, and examine privacy implications of recommender systems technology.

6. Ghimire, Devndra Comparative study on Python web frameworks: Flask and Django (2020)

We are gather from this paper, it was found that the most significant advantages of Flask were that it provides simplicity, flexibility, fine-grained control and quick and easy to learn. On the other hand, Django was easy to work with because of its extensive features and support for libraries. Another main advantage of Django is its scalability. It is best fit for a large-scale application. Each framework has its limitations and radiates a fair share of disadvantages. For example, Django is a bit cumbersome for smaller sized applications. However, Flask is too simple to not have the necessary features within the framework.

7. Parag Sunil Shukla, Dr. Priti V. Nigam E- Shopping using Mobile Apps and the Emerging Consumer in the Digital Age of Retail Hyper personalization: An Insight (2018)

We are gather from this paper ,the development of mobile applications (App) has been gradually become the focal point which the enterprises pay attention. Since the "mobile applications" owns the characteristics of entertainment, functionality, information, socialization as well as intellectual stimulation and so on, therefore it gradually becomes the emerging innovative marketing tools for marketing. In this research paper, an attempt has been made to understand the key linkages between experiential value and usage attitude of the shoppers' who prefer to use shopping applications. In this study an attempt has been made conceptually understand the complicated courtship between the connected consumers in today's digital age and the emergence online shopping using mobile apps. This research paper aims to provide a valuable reference for enterprises which are initiating or conducting the implementation of mobile shopping applications, and for researchers interested in the technological innovations in the future.