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Department of INFORMATION Science & Engineering

Course – Big Data Analytics

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SMART RESTAURANT CHOICE

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C E R T I F I C A T E

This is to certify that the project entitled "***SMART RESTAURANT CHOICE***" is a bona-fide work carried out by **Nikhil S K(1BM18IS058), Pramila Dalavai(1BM18IS068)** in partial fulfilment for the award of degree of Bachelor of Engineering in **Information Science and Engineering** from **Visvesvaraya Technological University, Belgaum** during the year **2021-2022**. It is certified that all corrections/suggestions indicated for Internal Assessments have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

Contents

Chapter 1

Abstract

The concept of big data has been around for years; most organizations now understand that if they capture all the data that streams into their businesses, they can apply analytics and get significant value from it. But even in the 1950s, decades before anyone uttered the term “big data,” businesses were using basic analytics (essentially numbers in a spreadsheet that were manually examined) to uncover insights and trends.

The new benefits that big data analytics brings to the table, however, are speed and efficiency. Whereas a few years ago a business would have gathered information, run analytics and unearthed information that could be used for future decisions, today that business can identify insights for immediate decisions. The ability to work faster – and stay agile – gives organizations a competitive edge they didn’t have before.

Apache Cassandra is a free and open-source, distributed, wide-column store, NoSQL database management system designed to handle large amounts of data across many commodity servers, providing high availability with no single point of failure.

Chapter 2

Problem Statement

Bengaluru is the best place for foodies. The number of restaurants is increasing day by day. Currently it stands at approximately 12,000 restaurants. With such a high number of restaurants , the key issue that continues to pose a challenge for customers to decide menus , cuisine , cost etc.Our proposed project will help the users to find the right restaurant based on their inputs and also filter similarity between neighbourhoods of bangalore on the basis of food.
So , what is the problem here? The never ending choice of food that we have. Hence, we have come up with a solution where.
We are creating a Python application using a cassandra DB and helping the customer decide his choice of food based on a number of parameters.

Chapter 3

Introduction

In this project we have tried to implement Apache Cassandra, its purpose, usage, configuration, and setting up a cluster and how can we access it in our ‘Smart Restaurant Choice’ Python application.

https://www.kaggle.com/himanshupoddar/zomato-bangalore-restaurants

We have used the above link to get the dataset of Zomato restaurant and it's stats.

Chapter 4

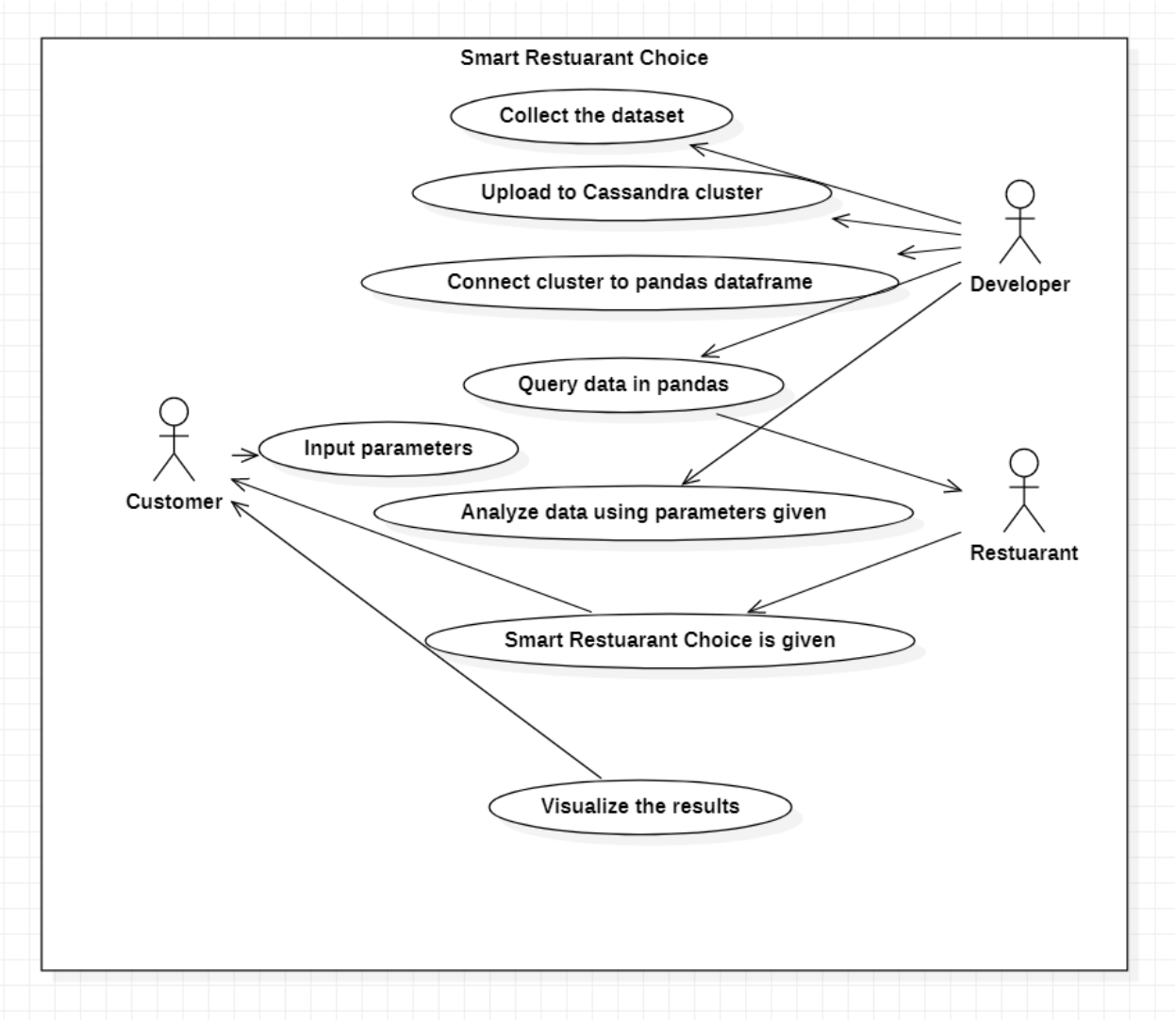
Overview of the project

The basic idea of analyzing the Zomato dataset is to get a fair idea about the factors affecting the aggregate rating of each restaurant, establishment of different types of restaurant at different places, Bengaluru being one such city has more than 12,000 restaurants with restaurants serving dishes from all over the world.

Thus, we are using this data to predict the restaurant/s that the customer should visit based on his requirements/inputs.

Chapter 5

High Level Design - Use case diagram



Chapter 6

Tools Used:

- JUPYTER NOTEBOOK
- PANDAS FOR DATA ANALYSIS
- IPYWIDGETS
- INTERACT WIDGET
- SEABORN AND MATPLOTLIB FOR VISUALISATION
- CASSANDRA BIG DATA TOOL FOR DATABASE

Chapter 7

Implementation

- ❏ Download the zomato dataset from this link
    - ❏ https://www.kaggle.com/himanshupoddar/zomato-bangalore-restaurants
- ❏ Upload the dataset to the cassandra server by creating a cluster and then creating a table inside the cluster.
- ❏ All queries were done using CQL.
- ❏ Open Jupyter notebook and connect cassandra cluster to python.
- ❏ Connection between python and cassandra is established.
- ❏ Load the cassandra data onto a pandas dataframe
- ❏ Using the pandas dataframe, data can be displayed in rows and columns
- ❏ Import ipywidgets into the notebook. Use them to make the queries interactive and thus make it possible for the user to filter efficiently and quickly.
- ❏ To create the main application, we have used 7 columns namely costfor2, book_table,order_online, cuisine, votes, rating, location
- ❏ Both lower range and upper range could be set for attributes like costfor2,rating and votes
- ❏ The user can now filter from 7 different attributes and get his restaurant choice.
- ❏ Thus, all these parameters entered by the end user is taken into consideration and the application gives the right restaurant choice/s based on his/her filters.
- ❏ We have also done statistical analysis on the zomato dataset and plotted graphs on them using seaborn and matplotlib.

Chapter 8

Results

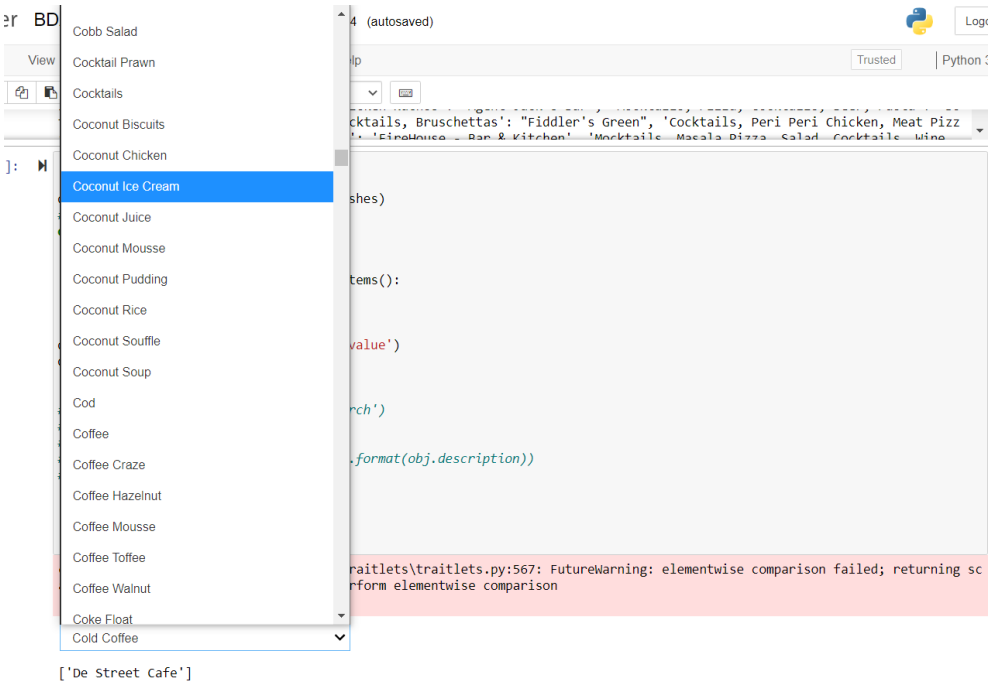


Fig 1.1 List of dish names to choose from

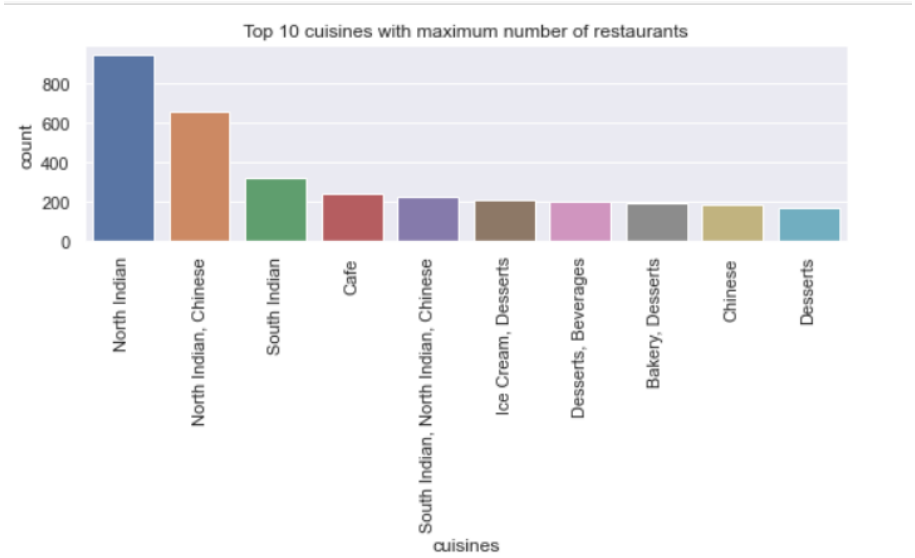


Fig 2.1 Visualization of the data(count vs cuisines)

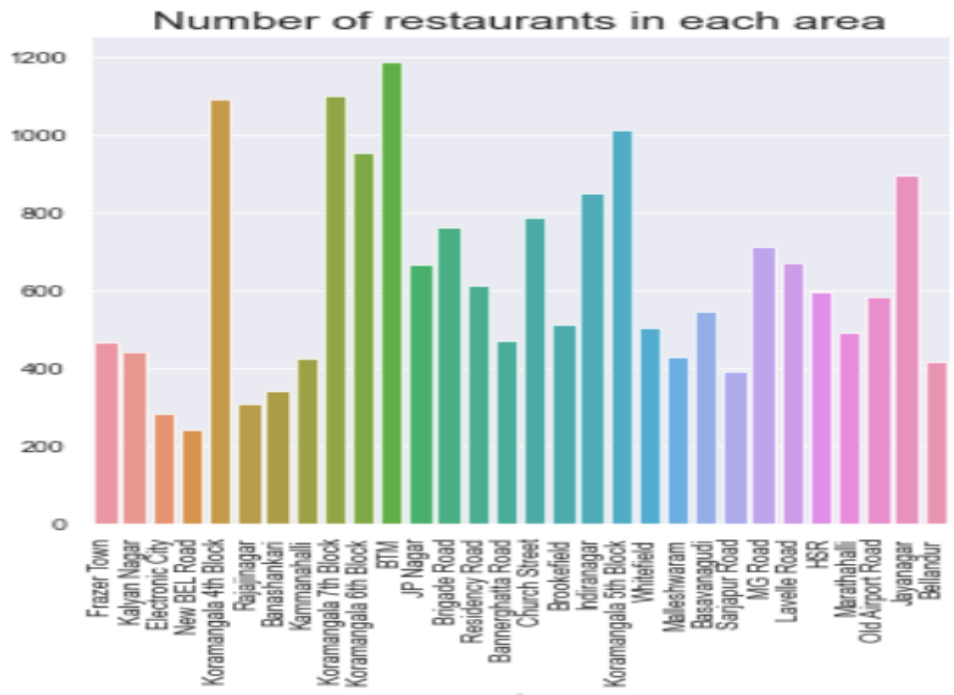


Fig 2.2 Visualization of number of restaurants(area wise)

SMART RESTAURANT CHOICE APPLICATION

Before we get started, let us get to know your details!!
Enter name
nikhil sk
Enter age
21
Enter your budget range, you can either slide through the slider or type in your budget

545

545

1990

1990

Filter by rating(0-5)

0.00

5.00

Filter by votes

20

16345

Tell us where you wish to travel to snack up

Jayanagar

Do you want the restaurant to have a table booking option

Yes

Do you want the restaurant to have online ordering option

Yes

What type of food do you want to eat??
96 cuisines to choose from

Biryani

Fig 3.1 User filtering data based on his choice

```
Hey nikhil sk ,
Thank you for using our application
Your details:
Budget range:  545  -  1990
Rating range:  0.0  -  5.0
Votes range:  20  -  16345
Destination point:  Jayanagar
Table booking option:  Yes
Online ordering option:  Yes
Cuisine selected  Biryani
```

Fig 3.2 Displaying user parameters

```
['Desi Rasoi' 'The Yellow Chilli' 'Andhra Ruchulu' "Dadi's Dum Biryani"
 'Malabar Bay' 'Savoury - Sea Shell Restaurant' 'Naati Manae'
 'Salt - Indian Restaurant Bar & Grill' 'Sea Spice by 7 Star']
```

Fig 3.3 Smart restaurant choices by our application

Chapter 9

References

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https://ipywidgets.readthedocs.io/en/latest/examples/Using%20Interact.html