INTELLIGENT GARBAGE CLASSIFICATION ON USING DEEP LEARNING

NAAN MUDHALVAN

PROJECT REPORT

Submitted By

KEERTHIVSAN N   (611220104070)

MEIROOPASHREE A R   (611220104084)

POORNASRI S   (611220104106)

REVATHI A   (611220104115)

in partial fulfilment for the award of the

degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

KNOWLEDGE INSTITUTE OF TECHNOLOGY,

SALEM-637504

ANNA UNIVERSITY::CHENNAI 600 025

NOVEMBER 2022

INTELLIGENT GARBAGE CLASSIFICATION ON USING DEEP LEARNING

NAAN MUDHALVAN

PROJECT REPORT

Submitted By

KEERTHIVSAN N	**(611220104070)**
MEIROOPASHREE A R	**(611220104084)**
POORNASRI S	**(611220104106)**
REVATHI A	**(611220104115)**

in partial fulfilment for the award of the

degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

KNOWLEDGE INSTITUTE OF TECHNOLOGY,

SALEM-637504

ANNA UNIVERSITY::CHENNAI 600 025

NOVEMBER 2022

BONAFIDE CERTIFICATE

Certified that this project report titled **"INTELLIGENT GARBAGE CLASSIFICATION ON USING DEEP LEARNING"** is the bonafide work of **"KEERTHIVSAN N (611220104070), MEIROOPASHREE A R (611220104084), POORNASRI S (611220104106), REVATHI A (611220104115)"** who carried out the project work under my supervision.

SIGNATURE

Dr. V. KUMAR M.E., Ph.D.,

HEAD OF THE DEPARTMENT

PROFESSOR

Department of Computer Science

and Engineering,

Knowledge Institute of Technology,

Kakapalayam,

Salem- 637 504.

SIGNATURE

Mr. J. MURUGESAN B.E., M.E.,

FACULTY MENTOR

ASSISTANT PROFESSOR

Department of Information

Technology,

Knowledge Institute of Technology,

Kakapalayam,

Salem- 637 504.

--- ---

SPOC   **HEAD OF THE DEPARTMENT**

ACKNOWLEDGEMENT

At the outset, we express our heartfelt gratitude to **GOD,** who has been our strength to bring this project to light.

At this pleasing moment of having successfully completed our project, we wish to convey our sincere thanks and gratitude to our beloved president **Mr. C. Balakrishnan,** who has provided all the facilities to us.

We would like to convey our sincere thanks to our beloved Principal **Dr. PSS. Srinivasan,** for forwarding us to do our project and offering adequateduration in completing our project.

We express our sincere thanks to our Head of the Department **Dr. V. Kumar,** Department of Computer Science and Engineering for fostering the excellent academic climate in the Department.

We express our pronounced sense of thanks with deepest respect and gratitude to our Faculty Mentor **Mr. J . Murugesan,** Department of Information Technology, for their valuable and precious guidance and for having amicable relation.

With deep sense of gratitude, we extend our earnest and sincere thanks to our SPOC **Mr. T. Karthikeyan,** Assistant Professor, Department of Computer Science and Engineering for his guidance and encouragement during this project.

We would also like express our thanks to all the faculty members of our Department, friends and students who helped us directly and indirect aspects of the project work to get completed successfully

TABLE OF CONTENTS

ABSTRACT

ABSTRACT

Indian cuisine consists of a variety of regional and traditional cuisines native to the Indian subcontinent. Given the diversity in soil, climate, culture, ethnic groups, and occupations, these cuisines vary substantially and use locally available spices, herbs, vegetables, and fruits. Indian food is also heavily influenced by religion, in particular cultural choices and traditions are given. Here we are going to see the analysis of these data and how can they be efficiently used by the restaurant and other regions.

NM2023TMID01894

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABBREVIATION	EXPANSION
HTML	HYPER TEXT MARKUP LANGUAGE
CSS	CASCADING STYLE SHEETS
EDA	EXPLORATORY DATA ANALYSIS
DB	DATABASE

INTRODUCTION

CHAPTER – 1
INTRODUCTION

1.1 PROJECT OVERVIEW

An overview of Indian food reveals a rich and diverse culinary landscape that's renowned for its flavors, ingredients, and regional variations such as Diversity, spices, vegan options, bread varieties, street foods, sweets and dessert, rice and pulses, health benefits, culinary art etc..

The first step is to collect a comprehensive dataset on Indian food. This dataset can be obtained from various sources such as recipe websites, food blogs, culinary books, or public repositories. The dataset should ideally include information such as the name of the dish, ingredients, cooking methods, region, popularity, and any other relevant attributes.

1.2 PURPOSE

The purpose of Indian food, like any cuisine, is multifaceted. Indian cuisine serves various purposes, heritage, medicinal, culinary, gastronomic exploration

Overall, the purpose of Indian food is to nourish, celebrate, and preserve cultural traditions while providing a sensory delight through its rich and diverse flavors.

CHAPTER – 2
LITERATURE SURVEY

1. EXPLORATORY DATA ANALYSIS OF INDIAN CUISINE INGREDIENTS" BY GUPTA ET AL. (2018):

This study focuses on analysing a dataset of Indian cuisine ingredients using EDA techniques. The authors explore the frequency and distribution of ingredients, identifying the most commonly used spices, herbs, and vegetables. They also investigate the regional variations in ingredient preferences, highlighting distinct flavour profiles in different Indian states.

2. EXPLORING REGIONAL VARIATIONS IN INDIAN FOOD: AN EDA APPROACH" BY SHARMA AND JAIN, 2019

This research delves into regional variations in Indian food by employing EDA techniques on a dataset comprising recipes from different states. The authors examine the prevalence of specific dishes, ingredients, and cooking methods within each region. They uncover regional specialties, uncovering the unique culinary traditions that define Indian cuisine.

3. EDA OF POPULAR INDIAN DISHES ON SOCIAL MEDIA" BY PATEL AND SHAH (2020)

This study utilizes EDA to analyze the popularity of Indian dishes on social media platforms. The authors collect data from various social media sources and explore metrics such as user ratings, reviews, and mentions. They identify popular dishes, trends, and emerging flavors, providing insights into the changing preferences of consumers.

4. NUTRITIONAL ANALYSIS OF INDIAN FOOD: AN EDA PERSPECTIVE BY CHATTERJEE AND SAHA (2021)

Focusing on the nutritional aspects of Indian cuisine, this research conducts EDA on a dataset comprising nutritional information of Indian dishes. The authors analyze the calorie content, macronutrient distribution, and common ingredients contributing to specific nutritional values. They highlight the balance and diversity of Indian food, providing valuable insights for health-conscious individuals.

5. EDA AND VISUALIZATION OF INDIAN STREET FOOD: A DATA-DRIVEN PERSPECTIVE BY DAS AND MOHANTY (2022)

This study employs EDA and visualization techniques to analyze data on Indian street food. The authors explore the regional variations, popularity, and ingredients of street food across different Indian cities. Through visualizations, they highlight the street food culture and its unique culinary offerings, uncovering hidden gems and trends.

CHAPTER - 3
IDEATION & PROPOSED SOLUTION

3.1 PROBLEM STATEMENT DEFINITION

A proposed solution for exploring and understanding Indian food, including its preparation, appreciation, and cultural significance, could involve the following components like recipe database, cultural context, cooking tutorials, Menu planning etc,.

Indian food EDA can be a valuable resource for both enthusiasts of Indian cuisine and professionals in the food industry.. It can help users discover new recipes, restaurants, and food trends while offering insights into the rich culinary traditions of India.

3.2 EMPATHY MAP CANVAS

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviors and attitudes. It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges
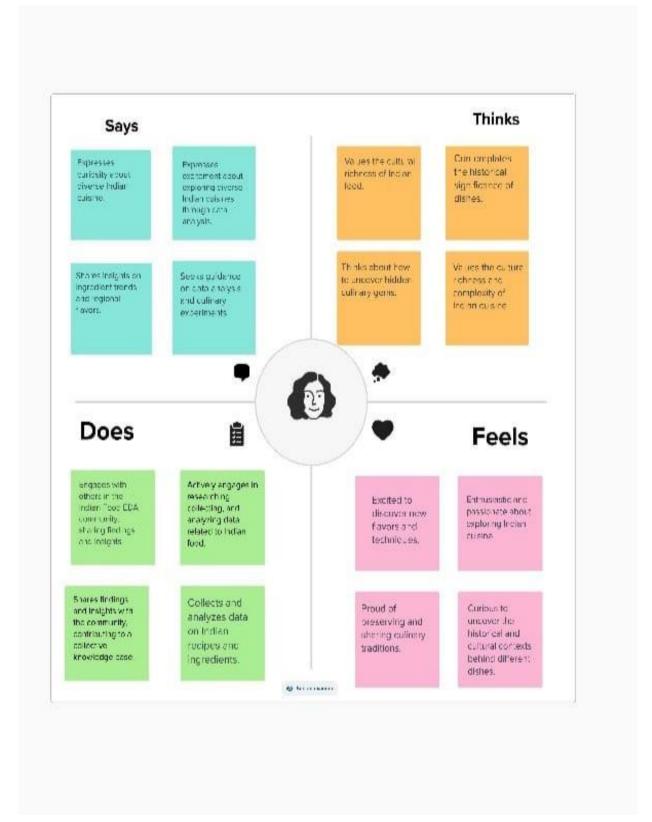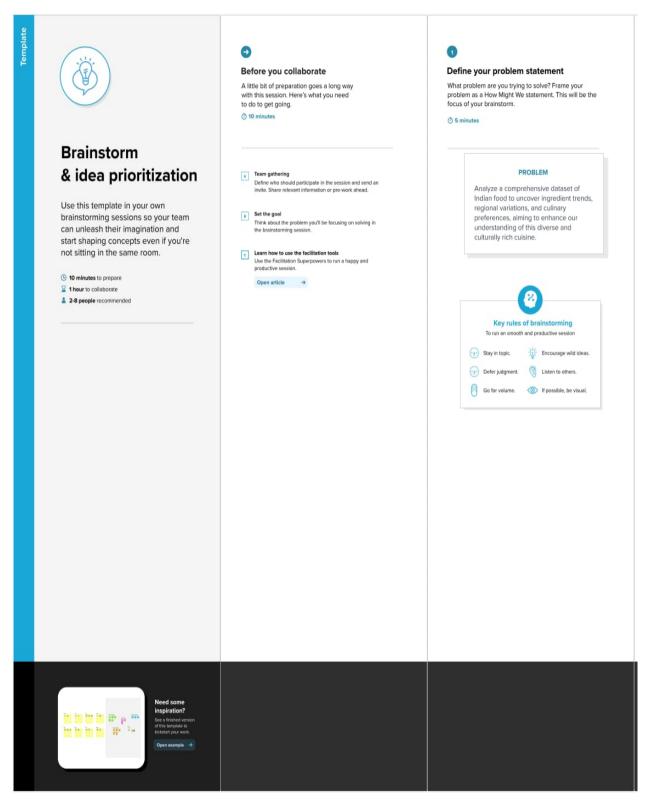
Fig. 3.2 EMPATHY MAP

3.3 IDEATION & BRAINSTORMING
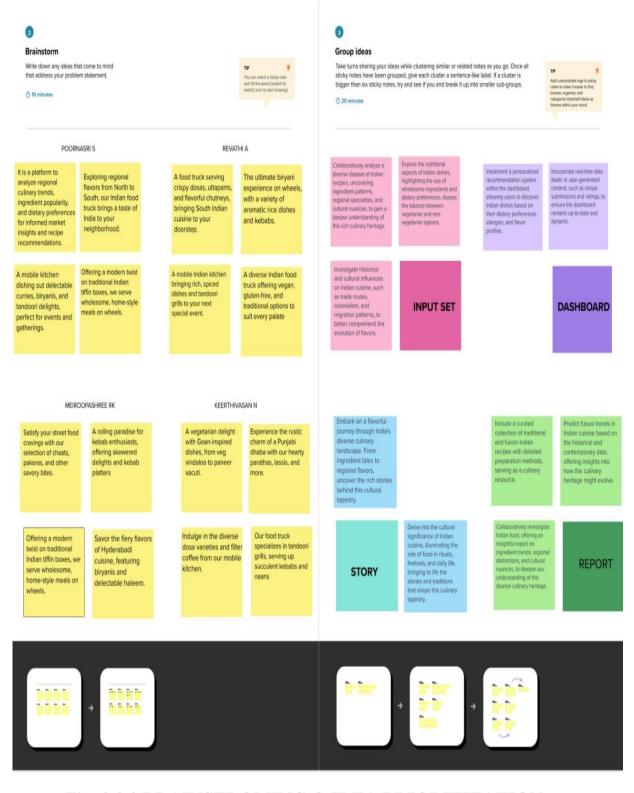

Fig. 3.3.1 BRAINSTROMING & IDEA PRIORITIZATION

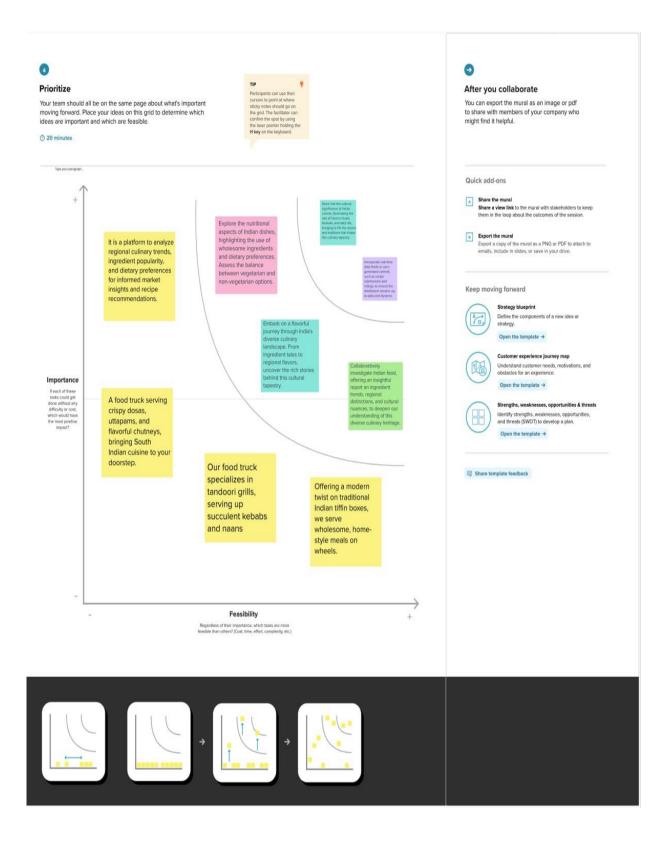**Fig. 3.3.2 BRAINSTROMING & IDEA PRIORITIZATION**

Fig 3.3.3 BRAINSTROMING & IDEA PRIORITIZATION

3.4 PROPOSED SOLUTION

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The objective of this EDA is to analyze and explore data related to Indian food consumption patterns. This involves examining factors such as regional variations, popular ingredients, cooking methods, dietary preferences, and seasonal variations..
2.	Idea / Solution description	Exploratory Data Analysis (EDA) has become an essential tool in understanding and extracting insights from large datasets. In the context of Indian food, EDA plays a crucial role in unraveling the complexities of this diverse and rich culinary heritage. This literature review explores existing research and studies that have employed EDA techniques to analyze Indian food datasets, shedding light on the ingredients, regional variations, popularity, and nutritional aspects of Indian cuisine.
3.	Social Impact / Customer Satisfaction	Health and Nutrition Awareness: EDA on Indian food datasets facilitates the exploration of nutritional aspects, enabling individuals to make informed dietary choices. By analysing calorie content, macronutrients, and ingredient

		compositions, EDA promotes health and nutrition awareness. This knowledge empowers individuals to adopt healthier eating habits and make informed decisions about their diet.
4.	Business Model (Revenue Model)	Restaurant Menu Planning: EDA on Indian food datasets helps restaurants and food establishments understand customer preferences and adapt their menus accordingly. By analyzing popular dishes, regional variations, and emerging trends, businesses can tailor their offerings to meet consumer demands. This improves customer satisfaction and drives business growth.
5.	Scalability of the Solution	It can be easily deployed and analyze the data across different locations and can continuously learn

REQUIREMENT ANALYSIS

CHAPTER – 4
REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

FR.NO	Functional Requirement (Epic)	Sub Requirement (Story Sub-Task)
FR.1	Data Collection:	The first step is to collect a comprehensive dataset on Indian food. This dataset can be obtained from various sources such as recipe websites, food blogs, culinary books, or public repositories. The dataset should ideally include information such as the name of the dish, ingredients, cooking methods, region, popularity, and any other relevant attributes.
FR.2	Data Cleaning and Preprocessing	Once the dataset is obtained, it needs to be cleaned and preprocessed before analysis. This involves handling missing values, removing duplicates, standardizing formats, and transforming the data into a suitable structure for analysis.

PROJECT DESIGN

PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

A Data Flow Diagram (DFD) serves as a conventional visual tool for illustrating the flow of information within a system. A well-structured and concise DFD provides a graphical representation of the system's requirements. It highlights the pathways through which data enters and exits the system, identifies points of data transformation, and indicates locations where data is stored.
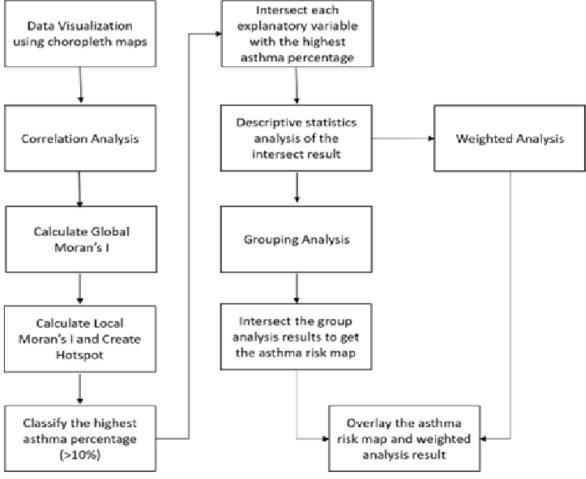

Fig. 5.1 DATA FLOW DIAGRAMS
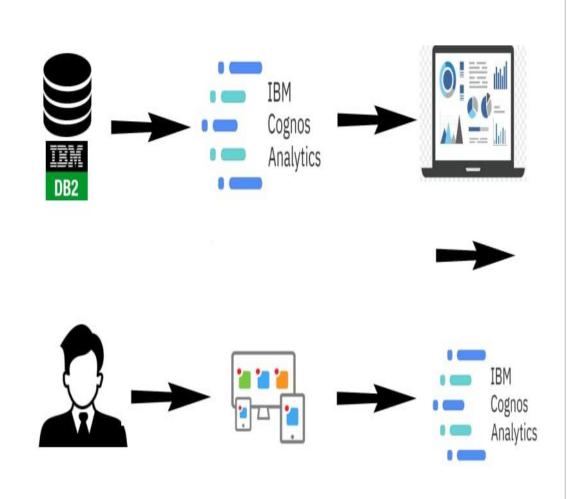
5.2 SOLUTION & TECHNICAL ARCHITECTURE

Fig. 5.2.1. TECHNIICAL ARCHITECTURE

CHAPTER - 6
CODING & SOLUTIONING

6.1 FEATURE 1

Exploratory Data Analysis (EDA) for Indian food is a fascinating endeavor that involves a multitude of distinctive features and characteristics specific to this culinary domain. One of the defining features is the remarkable diversity within Indian cuisine. With its myriad dishes, ingredients, and cooking styles, EDA must encompass this richness, examining the broad spectrum of flavors and regional influences. Recipe complexity is another facet that cannot be overlooked. Indian dishes can range from relatively simple to incredibly intricate, and EDA can reveal patterns in recipe structures and the use of various cooking techniques

6.2 FEATURE 2

Nutritional content is of growing interest in today's health-conscious society, and EDA can contribute by assessing the calorie counts, macronutrient profiles, and potential health benefits or concerns associated with Indian dishes. Cultural significance, seasonal variations, and cooking methods are all essential aspects that EDA should incorporate, offering a holistic view of Indian food. With its multifaceted nature, Indian food EDA is a captivating journey into a world of flavors, traditions, and culinary artistry, providing valuable insights for both food enthusiasts and the food industry. the distinction between vegetarian and non-vegetarian cuisine in India is a critical feature, reflecting cultural, religious, and dietary preferences. By exploring the prevalence of these two categories, it can highlight these influences.

CHAPTER – 7
RESULTS

7.1 PERFORMANCE METRICS

In the exploratory data analysis (EDA) of Indian food data, it's crucial to assess several performance metrics to ensure the quality and effectiveness of the analysis. First, evaluate data completeness by calculating the percentage of missing values, striving for lower percentages. Data quality should be examined, with particular attention to outliers, especially in numerical features. Provide summary statistics and visualize data distributions through histograms, box plots, and density plots to gain insights into central tendencies and spread. For categorical variables, create frequency tables and bar plots to understand category distribution. Correlation analysis, involving correlation matrices and scatter plots, uncovers relationships between numerical features. It's essential to explore feature relationships with scatter plots and pair plots, which reveal patterns and trends. Moreover, assess class distribution to identify any data imbalances. If needed, apply data scaling for numerical variables. Consider the aesthetics and labeling of your visualizations, making sure they are clear and informative. Finally, document the entire EDA process, highlighting insights, patterns, and any preprocessing requirements, to ensure transparency and reproducibility in the analysis.

ADVANTAGES & DISADVANTAGE

CHAPTER - 8
ADVANTAGES & DISADVANTAGES

8.1ADVANTAGES :

Diverse and Flavorful: Indian cuisine is known for its diverse range of flavors, owing to the use of various spices and herbs. Each region in India has its unique culinary traditions, resulting in a vast array of dishes that cater to different tastes.

Health Benefits: Many Indian dishes are made with fresh ingredients, including a variety of vegetables, legumes, and whole grains. These components are rich in essential nutrients and fiber, making Indian food a healthy choice.

Spices and Herbs: Indian cuisine uses a wide array of spices and herbs, many of which have potential health benefits. For example, turmeric has anti-inflammatory properties, and spices like cumin and coriander can aid digestion.

Vegetarian Options: India has a significant vegetarian population, and as a result, Indian cuisine offers an extensive range of vegetarian and vegan dishes. This can be an advantage for people looking to reduce or eliminate animal products from their diets.

Cultural Heritage: Indian food reflects the country's rich cultural heritage. Each dish often has a story or history associated with it, which adds an extra layer of enjoyment to the dining experience.

Balance of Flavors: Indian cuisine is known for its balance of flavors. Dishes often incorporate sweet, sour, spicy, and savory elements, creating a harmonious blend that appeals to various taste preferences.

8.2 DISADVANTAGES:

High Caloric Content: Some Indian dishes can be high in calories due to the

use of ghee (clarified butter) and heavy creams, which can lead to weight gain if consumed in excess.

Allergens: Indian cooking often uses a variety of nuts and dairy products, which can be problematic for individuals with allergies or dietary restrictions.

Complex Preparation: Some Indian recipes can be complex and time-consuming to prepare, requiring a significant amount of effort and numerous ingredients.

Overeating: The flavors and variety of Indian dishes can sometimes lead to overeating, as it can be tempting to try multiple items at once, potentially leading to excessive calorie consumption.

Acquired Taste: The rich and diverse flavors of Indian food may not be appealing to everyone, especially those who are not accustomed to the use of certain spices and seasonings.

Health Choices: While there are many healthy Indian dishes, there are also those that are high in sugar and unhealthy fats, which can be less suitable for those looking to maintain a balanced diet.

Cultural Differences: Understanding the cultural context of Indian food can be challenging for those unfamiliar with it. The customs and traditions associated with Indian dining may differ from one's own culture.

CONCLUSION

CHAPTER - 9
CONCLUSION

In conclusion, The literature review demonstrates the growing interest in applying EDA techniques to explore Indian food datasets. These studies have provided valuable insights into the ingredients, regional variations, popularity, and nutritional aspects of Indian cuisine. EDA has proven instrumental in unraveling the intricacies of Indian food, shedding light on the diversity, flavors, and cultural significance associated with this culinary heritage. Future research can further leverage EDA to explore new dimensions of Indian food, such as the impact of globalization, dietary preferences, and the fusion of traditional and modern culinary practices.

EDA on Indian food datasets has a profound social and business impact. It promotes the preservation of culinary heritage, encourages cultural exchange, and raises awareness of health and nutrition. In the business realm, EDA drives menu planning, product development, marketing strategies, and supply chain optimization

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency

APPENDIX

CHAPTER - 11

APPENDIX

SOURCE CODE

Index.html

```html
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="utf-8">
  <meta content="width=device-width, initial-scale=1.0" name="viewport">


  <title>Indian Food Eda</title>
  <meta content="" name="description">
  <meta content="" name="keywords">


  <!-- Favicons -->
  <link href="/assets/img/favicon.png" rel="icon">
  <link href="/assets/img/apple-touch-icon.png" rel="apple-touch-icon">


  <!-- Google Fonts -->
  <link
href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|
Playfair+Display:ital,wght@0,400;0,500;0,600;0,700;1,400;1,500;1,600;1,700|Poppins:300,300i,
400,400i,500,500i,600,600i,700,700i" rel="stylesheet">


  <!-- Vendor CSS Files -->
  <link href="assets/vendor/animate.css/animate.min.css" rel="stylesheet">
  <link href="assets/vendor/aos/aos.css" rel="stylesheet">
  <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
  <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
```

```
<link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
<link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
<link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">


<!-- Template Main CSS File -->
<link href="assets/css/style.css" rel="stylesheet">



</head>

<body>


<!-- ======= Top Bar ======= -->
<div id="topbar" class="d-flex align-items-center fixed-top">
  <div class="container d-flex justify-content-center justify-content-md-between">


    </div>
    </div>
  </div>
</div>


<!-- ======= Header ======= -->
<header id="header" class="fixed-top d-flex align-items-cente">
  <div class="container-fluid container-xl d-flex align-items-center justify-content-lg-between">
    <img src="/Restaurantly/assets/img/Daco_4970973.png" alt="" class="rounded-circle"
width="50px" height="50px">
    <h1 class="logo me-auto me-lg-0"><a style="align-items: center;" href="index.html">Indian
Food Eda</a></h1>
    <!-- Uncomment below if you prefer to use an image logo -->
    <!-- <a href="index.html" class="logo me-auto me-lg-0"><img src="assets/img/logo.png"

alt="" class="img-fluid"></a>-->
    <nav id="navbar" class="navbar order-last order-lg-0">
```

```html
      <ul>

        <li><a class="nav-link scrollto active" href="#hero">Home</a></li>

        <li><a class="nav-link scrollto" href="#about">About</a></li>

        <li><a class="nav-link scrollto" href="#menu">Menu</a></li>

        <li><a class="nav-link scrollto" href="#gallery">Gallery</a></li>

        <li><a class="nav-link scrollto" href="#contact">Contact</a></li>


      </ul>

      <i class="bi bi-list mobile-nav-toggle"></i>

    </nav><!-- .navbar -->


  </div>

</header><!-- End Header -->


<!-- ======= Hero Section ======= -->

<section id="hero" class="d-flex align-items-center">

  <div class="container position-relative text-center text-lg-start" data-aos="zoom-in" data-aos-delay="100">

    <div class="row">

      <div class="col-lg-8">

        <h1>Welcome to <span>Indian Food Eda</span></h1>

        <h2> Indian cuisine consists of a variety of regional and traditional cuisines native to the Indian subcontinent. </h2>


        <div class="btns">

          <a href="#menu" class="btn-menu animated fadeInUp scrollto">Our Menu</a>

        </div>

      </div>

      <div class="col-lg-4 d-flex align-items-center justify-content-center position-relative" data-aos="zoom-in" data-aos-delay="200">

        <a href="https://www.youtube.com/watch?v=u6BOC7CDUTQ" class="glightbox play-btn"></a>
```

```
        </div>


      </div>

    </div>

  </section><!-- End Hero -->


  <main id="main">


    <!-- ======= About Section ======= -->
    <section id="about" class="about">
      <div class="container" data-aos="fade-up">


        <div class="row">
          <div class="col-lg-6 order-1 order-lg-2" data-aos="zoom-in" data-aos-delay="100">
            <div class="about-img">
              <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2F
Indian%2BFood%2BEda%2BDashboard&amp;closeWindowOnLastView=true&amp;ui_appbar=
false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=dashbo
ard" width="600" height="500" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>


            </div>
          </div>
          <div class="col-lg-6 pt-4 pt-lg-0 order-2 order-lg-1 content">
            <h2>INDIAN FOODS</h2>
            <p class="fst-italic">

            The aim of this project is to perform Exploratory Data Analysis (EDA) on a dataset
related to Indian food. Exploratory Data Analysis is a crucial step in data analysis that helps in
understanding the dataset, discovering patterns, and extracting insights. In this project, we will
explore various aspects of Indian cuisine, such as ingredients, recipes, regional variations, and


 popularity.
            </p>
            <ul>
```

```html
<li><i class="bi bi-check-circle"></i> Ingredients Analysis</li>
<li><i class="bi bi-check-circle"></i> Nutrition Analysis</li>
<li><i class="bi bi-check-circle"></i> Discrete Statistics</li>
</ul>
<h3>DATA COLLECTION</h3>
<p>
```

The first step is to collect a comprehensive dataset on Indian food. This dataset can be obtained from various sources such as recipe websites, food blogs, culinary books, or public repositories. The dataset should ideally include information such as the name of the dish, ingredients, cooking methods, region, popularity, and any other relevant attributes.

```html
</p>
</div>
</div>


</div>
</section><!-- End About Section -->


<!-- ======= Why Us Section ======= -->
<section id="why-us" class="why-us">
  <div class="container" data-aos="fade-up">


    <div class="section-title">
      <h2>Why Indian Foods</h2>
      <p>Why Choose Our Indian Foods</p>
    </div>


    <div class="row">
     <div class="col-lg-4">


       <div class="box" data-aos="zoom-in" data-aos-delay="100">
        <span>01</span>
        <h4>INGREDIENTS</h4>
         <p>The most important and frequently used spices and flavourings in Indian cuisine are
```

whole or powdered chilli pepper (mirchi), black mustard seed (sarso), cardamom (elaichi), cumin (jeera), turmeric (haldi), asafoetida (hing), ginger (adrak), coriander (dhania), and garlic</p>

        </div>

        </div>

        <div class="col-lg-4 mt-4 mt-lg-0">

        <div class="box" data-aos="zoom-in" data-aos-delay="200">

        02

        <h4>CONSUMERS</h4>

        <p>Indian consumption pattern is diversifying towards high value agricultural

        products in search of a nutritious and healthier diet.Diversity in Taste,Preference for Spices and Flavors,Diverse Food Industry, Changing Dietary Habits, Festive Foods.</p>

        </div>

        </div>

        <div class="col-lg-4 mt-4 mt-lg-0">

        <div class="box" data-aos="zoom-in" data-aos-delay="300">

        03

        <h4> HEALTH BENEFITS</h4>

        <p>Variety of ingredients like vegetables etc which has essential vitamins,fibre,minerals etc.Rich in Nutrients,Digestive Health(curd),Cancer Prevention(Turmeric),Balanced Nutrition(Wheat,plant foods),Weight Management(carbohydrates, proteins, and fats).</p>

        </div>

        </div>

      </div>

    </div>

  </section><!-- End Why Us Section -->

  <!-- ======= Menu Section ======= -->

  <section id="menu" class="menu section-bg">

  <div class="container" data-aos="fade-up">

```html
<div class="section-title">
  <h2>Menu</h2>
  <p>Check Our Tasty Menu</p>
</div>

<div class="row" data-aos="fade-up" data-aos-delay="100">
  <div class="col-lg-12 d-flex justify-content-center">
    <ul id="menu-flters">
      <li data-filter="*" class="filter-active">All</li>
      <li data-filter=".filter-starters">Starters</li>
      <li data-filter=".filter-specialty">Specialty</li>
    </ul>
  </div>
</div>

<div class="row menu-container" data-aos="fade-up" data-aos-delay="200">

  <div class="col-lg-6 menu-item filter-starters">
    <img src="/assets/img/roast.png" class="menu-img" alt="">
    <div class="menu-content">
      <a href="#">Ghee Roast Dosa</a><span>₹75</span>
    </div>
    <div class="menu-ingredients">
      Ghee, parboiled rice, ural dhal, fenugreek seeds, rock salt
    </div>
  </div>

  <div class="col-lg-6 menu-item filter-specialty">
    <img src="/assets/img/chicken bir.jpg" class="menu-img" alt="">
    <div class="menu-content">
      <a href="#">Chicken Biryani</a><span>₹180</span>
    </div>
```

```html
        <div class="menu-ingredients">

        Rice, curd, chicken, turmeric powder, chilli powder, salt, garam masala, ginger garlic
paste, lemon juice

        </div>

      </div>


      <div class="col-lg-6 menu-item filter-starters">

        <img src="/assets/img/alu-parotha.png" class="menu-img" alt="">

        <div class="menu-content">

          <a href="#">Aloo Paratha</a><span>₹15</span>

        </div>

        <div class="menu-ingredients">

        Maida & Wheat dough, aloo(potato), coriander, turmeric, chilli powder, chat masala,
green chilli, salt, kasuri methi

        </div>

      </div>

      <div class="col-lg-6 menu-item filter-salads">

        <img src="/assets/img/tandoori.jpg" class="menu-img" alt="">

        <div class="menu-content">

          <a href="#">Tandoori Chicken</a><span>₹400</span>

        </div>

        <div class="menu-ingredients">

        Marinate Chicken with yogurt, turmeric, garam masala, salt, chilli powder, corriander
powder, lemon juice, oil and grill it

        </div>

      </div>


      <div class="col-lg-6 menu-item filter-specialty">

        <img src="/assets/img/butter-chicken.png" class="menu-img" alt="">

        <div class="menu-content">

          <a href="#">Butter Chicken</a><span>₹300</span>

        </div>

        <div class="menu-ingredients">
```

Boneless Chicken, butter, tomato, corriander leaves, kasuri methi, chilli powder, garam masala, cashew cream, turmeric, salt

```
      </div>

    </div>


    <div class="col-lg-6 menu-item filter-starters">

      <img src="/assets/img/palak.jpg" class="menu-img" alt="">

      <div class="menu-content">

        <a href="#">Palak Paneer</a><span>₹160</span>

      </div>

      <div class="menu-ingredients">
```

Spinach, paneer, butter, garlic, capsicum, tomato, kasuri methi, chilli powder, garam masala, salt, fresh cream

```
      </div>

    </div>

    <div class="col-lg-6 menu-item filter-salads">

      <img src="/assets/img/malai.png" class="menu-img" alt="">

      <div class="menu-content">

        <a href="#">Malai Kofta</a><span>₹150</span>

      </div>

      <div class="menu-ingredients">
```

Potato, paneer, cashew paste, corriander leaves, onion, tomato, cardamom, salt, chilli powder

```
      </div>

    </div>


    <div class="col-lg-6 menu-item filter-salads">

      <img src="/assets/img/Dal-Makhani.jpg" class="menu-img" alt="">

      <div class="menu-content">

        <a href="#">Dal Makhani</a><span>₹130</span>

      </div>

      <div class="menu-ingredients">
```

Lentils, red kidney beans, fresh cream(malai), kasuri methi, salt, chilli

```html
      </div>

    </div>


    <div class="col-lg-6 menu-item filter-specialty">

     <img src="/assets/img/sambar.jpg" class="menu-img" alt="">

     <div class="menu-content">

      <a href="#">Sambar</a><span>₹80</span>

     </div>

     <div class="menu-ingredients">

      Lentils, mixed vegetables, tamarind, herbs, spices, salt

     </div>

    </div>


   </div>


  </div>

 </section><!-- End Menu Section -->


 <!-- ======= Specials Section ======= -->

 <section id="specials" class="specials">

  <div class="container" data-aos="fade-up">

   <div class="section-title">

    <h2>Specials</h2>


    <p>Check Our Specials</p>

   </div>

   <div class="row" data-aos="fade-up" data-aos-delay="100">

    <div class="col-lg-3">

     <ul class="nav nav-tabs flex-column">

      <li class="nav-item">

       <a class="nav-link active show" data-bs-toggle="tab" href="#tab-1">Pani Puri</a>

      </li>
```

```html
        <li class="nav-item">

         <a class="nav-link" data-bs-toggle="tab" href="#tab-2">Vada Pav</a>

        </li>

        <li class="nav-item">

         <a class="nav-link" data-bs-toggle="tab" href="#tab-3">Chicken 65</a>

        </li>

        <li class="nav-item">

         <a class="nav-link" data-bs-toggle="tab" href="#tab-4">Tawa Fish</a>

        </li>

        <li class="nav-item">

         <a class="nav-link" data-bs-toggle="tab" href="#tab-5">Egg bhurji</a>

        </li>

       </ul>

      </div>

      <div class="col-lg-9 mt-4 mt-lg-0">

       <div class="tab-content">

        <div class="tab-pane active show" id="tab-1">

         <div class="row">

          <div class="col-lg-8 details order-2 order-lg-1">

           <h3>Plate of Pani Puri</h3>

           <p class="fst-italic">This popular street food doesn't need any introduction! Potato,
onion, chickpeas, coriander chutney stuffed crispy puri drenched in sour and spicy mint flavored


 water (pudina pani) easily fills ones mouth and takes taste buds on a journey of heaven and it is
no wonder that its a popular street snack along the length and breadth of India and known as gol
gappa, puchka, pakodi, Pani Puri,</p>

          </div>

          <div class="col-lg-4 text-center order-1 order-lg-2">

           <img src="/assets/img/pani.jpeg" alt="" class="img-fluid">

          </div>

         </div>

        </div>

        <div class="tab-pane" id="tab-2">
```

```
<div class="row">

  <div class="col-lg-8 details order-2 order-lg-1">

  <h3>Vada pav: a small bite with a big taste</h3>

  <p class="fst-italic">Vada Pav is a savory and spicy soft dinner rolls or fluffy buns,
```
referred to as Pav, stuffed with a fried batter coated potato dumpling fritter called Batata Vada and laced with spicy and sweet chutneys.This dish is filling, delish, full of flavors and has various textures!. It is served with fried green chillies and lemon. </p>

```
  </div>

  <div class="col-lg-4 text-center order-1 order-lg-2">

  <img src="/assets/img/vad.jpeg" alt="" class="img-fluid">

  </div>

  </div>

  </div>

  <div class="tab-pane" id="tab-3">

  <div class="row">

  <div class="col-lg-8 details order-2 order-lg-1">

  <h3>spice up your taste buds with Chicken 65</h3>

  <p class="fst-italic">Chicken 65 is a popular chicken dish across India.Chicken 65 is
```
a spicy dish that can be served as appetiser, snacks or side dish.Chicken 65 is bite size pieces of chicken coated in spicy masala marination consists of chilli powder, turmeric, garam masala powder, lemon juice, ginger, garlic, eggs, rice flour. Marinated chicken is then deep fried till cooked and crispy. </p>

```
  </div>


  <div class="col-lg-4 text-center order-1 order-lg-2">

  <img src="/assets/img/65.JPG" alt="" class="img-fluid">

  </div>

  </div>

  </div>

  <div class="tab-pane" id="tab-4">

  <div class="row">

  <div class="col-lg-8 details order-2 order-lg-1">

  <h3>Tasting the oceans</h3>

  <p class="fst-italic">Spicy Fish Fry, a popular family favorite recipe that will turn
```
into a treat for your tastebuds. The fish marination is made with spices, ginger, garlic, curry

leaves, lemon. Marinated fish is fried in coconut oil and gets a smoky charred flavour from the frying. Serve it as an appetizer with lemon wedges and lacha onion rings or serve it for lunch with steamed kerala matta rice, tomato rasam or Fish curry.</p>

```
      </div>

      <div class="col-lg-4 text-center order-1 order-lg-2">

        <img src="/assets/img/fish.jpg" alt="" class="img-fluid">

      </div>

     </div>

    </div>

    <div class="tab-pane" id="tab-5">

     <div class="row">

      <div class="col-lg-8 details order-2 order-lg-1">

       <h3>Nothing like simple spicy egg bhurji</h3>

       <p class="fst-italic">Egg Bhurji (Anda Bhurji) is nothing but Indian spiced
```
scrambled eggs. A spicy onion tomato-based masala paste is made and eggs are scrambled along with the masala.The street vendors add a secret ingredient to their recipe that takes it to another level and that ingredient is Pav Bhaji Masala.This anda bhurji recipe comes together in under 20 minutes using minimal ingredients and can be served any time of the day with roti, paratha, bread, or pav.</p>

```
      </div>

      <div class="col-lg-4 text-center order-1 order-lg-2">


        <img src="/assets/img/egg.jpg" alt="" class="img-fluid">

      </div>

     </div>

    </div>

   </div>

  </div>

 </section><!-- End Specials Section -->


 <!-- ======= Events Section ======= -->

 <section id="events" class="events">
```

```html
<div class="container" data-aos="fade-up">


    <div class="section-title">

      <h2>Stories</h2>

      <p>Organizing our statistics</p>

    </div>

    <div class="swiper-slide">

        <div class="row event-item">

        <div class="col-lg-6">

         <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2FINDI
AN%2BFOOD%2BEDA%2FINDIAN%2BFOOD%2BEDA%2BStory&amp;closeWindowOnLa
stView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;act
ion=view&amp;sceneId=model0000018b3c494697_00000002&amp;sceneTime=0" width="600"
height="400" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>


        </div>

        <div class="col-lg-6 pt-4 pt-lg-0 content">

         <h3>Statistics</h3>

         <p class="fst-italic">


         </p>

         <ul>

          <li><i class="bi bi-check-circled"></i> When selecting an individual from the
sample or adding a new individual through an experiment, the probability of choosing the Spicy
flavor is 56.7% and of choosing Sour is 0.6%.</li>

          <li><i class="bi bi-check-circled"></i> 50% of all Indian dishes are prepared in less
than or equal to 10 minutes.79% of all Indian dishes are prepared in less than or equal to 20
minutes.87% of all Indian dishes are prepared in less than or equal to 30 minutes.</li>

          <li><i class="bi bi-check-circled"></i> 100% of all orders from the Central region
are on a vegan diet.</li>

         </ul>

         <p>

          For our purposes, we picked some fabulus Indian Food dishes from Food-101 dataset,
because we considered them to have the most distinct and
```

representative properties. This dataset consists of 101 categories and each category has 255 rows, in total 9 columns.

Most of the data is about popular Indian food.

```
      </p>

    </div>

   </div>

  </div><!-- End testimonial item -->

 <!-- ======= Book A Table Section ======= -->

 <section id="book-a-table" class="book-a-table">

  <div class="container" data-aos="fade-up">


   <div class="section-title">

    <h2>Report</h2>

    <p>Reports for the Indian Foods</p>

   </div>

   <iframe
src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FINDIAN%2BFOOD%2BED
A%2FIndian%2BFood%2BEda%2BReport&amp;

closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=e
mbedded&amp;action=run&amp;prompt=false" width="1280" height="600" frameborder="0"

 gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>


 <!-- ======= Gallery Section ======= -->

 <section id="gallery" class="gallery">


  <div class="container" data-aos="fade-up">

   <div class="section-title">

    <h2>Gallery</h2>

    <p>Some photos of the Indian Cuisine</p>

   </div>

  </div>


  <div class="container-fluid" data-aos="fade-up" data-aos-delay="100">
```

```html
<div class="row g-0">

 <div class="col-lg-3 col-md-4">
  <div class="gallery-item">
   <a href="/assets/img/aa.jpg" class="gallery-lightbox" data-gall="gallery-item">
    <img src="/assets/img/aa.jpg" alt="" class="img-fluid">
   </a>
  </div>
 </div>
 <div class="col-lg-3 col-md-4">
  <div class="gallery-item">
   <a href="/assets/img/bb.jpg" class="gallery-lightbox" data-gall="gallery-item">
    <img src="/assets/img/bb.jpg" alt="" class="img-fluid">
   </a>
  </div>
 </div>

 <div class="col-lg-3 col-md-4">
  <div class="gallery-item">
   <a href="/assets/img/cc.jpeg" class="gallery-lightbox" data-gall="gallery-item">
    <img src="/assets/img/cc.jpeg" alt="" class="img-fluid">
   </a>
  </div>
 </div>
 <div class="col-lg-3 col-md-4">
  <div class="gallery-item">
   <a href="/assets/img/dd.jpg" class="gallery-lightbox" data-gall="gallery-item">
    <img src="/assets/img/dd.jpg" alt="" class="img-fluid">
   </a>
  </div>
 </div>
```

```html
<div class="col-lg-3 col-md-4">
  <div class="gallery-item">
    <a href="/assets/img/ee.jpeg" class="gallery-lightbox" data-gall="gallery-item">
      <img src="/assets/img/ee.jpeg" alt="" class="img-fluid">
    </a>
  </div>
</div>

<div class="col-lg-3 col-md-4">
  <div class="gallery-item">
    <a href="/assets/img/ff.jpg" class="gallery-lightbox" data-gall="gallery-item">
      <img src="/assets/img/ff.jpg" alt="" class="img-fluid">
    </a>
  </div>
</div>

<div class="col-lg-3 col-md-4">
  <div class="gallery-item">
    <a href="/assets/img/gg.jpg" class="gallery-lightbox" data-gall="gallery-item">
      <img src="/assets/img/gg.jpg" alt="" class="img-fluid">
    </a>
  </div>
</div>

<div class="col-lg-3 col-md-4">
  <div class="gallery-item">
    <a href="/assets/img/hh.jpg" class="gallery-lightbox" data-gall="gallery-item">
      <img src="/assets/img/hh.jpg" alt="" class="img-fluid">
    </a>
  </div>
</div>
```

```
        </div>

      </div>

    </section><!-- End Gallery Section -->


    <!-- ======= Contact Section ======= -->
    <section id="contact" class="contact">
      <div class="container" data-aos="fade-up">
        <div class="section-title">
          <h2>Contact</h2>
          <p>Contact Us</p>
        </div>
      </div>


      <div class="container" data-aos="fade-up">
        <div class="row mt-5">


          <div class="col-lg-4">
            <div class="info">
              <div class="address">
                <i class="bi bi-geo-alt"></i>
                <h4>Location:</h4>
                <p>Salem-Tamilnadu</p>
              </div>
              <div class="email">
                <i class="bi bi-envelope"></i>
                <h4>Email:</h4>
                <p>poorna20sri@gmail.com</p>
              </div>
              <div class="phone">
                <i class="bi bi-phone"></i>
                <h4>Call:</h4>
                <p>6374222546</p>
```

```html
          </div>

        </div>

      </div>

      <div class="col-lg-8 mt-5 mt-lg-0">

        <form action="forms/contact.php" method="post" role="form" class="php-email-form">

          <div class="row">

            <div class="col-md-6 form-group">

              <input type="text" name="name" class="form-control" id="name" placeholder="Your Name" required>

            </div> <div class="col-md-6 form-group mt-3 mt-md-0">


<input type="email" class="form-control" name="email" id="email" placeholder="Your Email" required>

            </div>

          </div>


            <div class="form-group mt-3">

              <input type="text" class="form-control" name="subject" id="subject" placeholder="Subject" required>

            </div>

            <div class="form-group mt-3">

              <textarea class="form-control" name="message" rows="8" placeholder="Message" required></textarea>

            </div>

            <div class="my-3">

              <div class="loading">Loading</div>

              <div class="error-message"></div>

              <div class="sent-message">Your message has been sent. Thank you!</div>

            </div>

            <div class="text-center"><button type="submit">Send Message</button></div>

        </form>

      </div>

    </div>
```

```html
      </div>

  </section><!-- End Contact Section -->

</main><!-- End #main -->

<!-- ======= Footer ======= -->

<footer id="footer">

  <div class="footer-top">

    <div class="container">

      <div class="row">

<div class="col-lg-3 col-md-6">

        <div class="footer-info">


          <h3>INDIAN FOOD EDA</h3>

          <p>

            Salem-Tamilnadu-India<br>


            <strong>Phone:</strong> 6374222546<br>

            <strong>Email:</strong> poorna20sri@gmail.com<br>

          </p>

          <div class="social-links mt-3">

            <a href="#" class="twitter"><i class="bx bxl-twitter"></i></a>

            <a href="#" class="facebook"><i class="bx bxl-facebook"></i></a>

            <a href="#" class="instagram"><i class="bx bxl-instagram"></i></a>

            <a href="#" class="google-plus"><i class="bx bxl-skype"></i></a>

            <a href="#" class="linkedin"><i class="bx bxl-linkedin"></i></a>

          </div>

        </div>

      </div>


      <div class="col-lg-2 col-md-6 footer-links">

        <h4>Useful Links</h4>

        <ul>

          <li><i class="bx bx-chevron-right"></i> <a href="#">Home</a></li>
```

```html
      <li><i class="bx bx-chevron-right"></i> <a href="#">About us</a></li>

      <li><i class="bx bx-chevron-right"></i> <a href="#">Services</a></li>

      <li><i class="bx bx-chevron-right"></i> <a href="#">Terms of service</a></li>

      <li><i class="bx bx-chevron-right"></i> <a href="#">Privacy policy</a></li>

    </ul>

  </div>

  </div>

  </div>

 </div>

 <div id="preloader"></div>

 <a href="#" class="back-to-top d-flex align-items-center justify-content-center"><i class="bi bi-arrow-up-short"></i></a>




 <!-- Vendor JS Files -->

 <script src="assets/vendor/aos/aos.js"></script>

 <script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

 <script src="assets/vendor/glightbox/js/glightbox.min.js"></script>

 <script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>

 <script src="assets/vendor/swiper/swiper-bundle.min.js"></script>

 <script src="assets/vendor/php-email-form/validate.js"></script>


 <!-- Template Main JS File -->

 <script src="assets/js/main.js"></script>


</body>


</html>
```

GITHUB & PROJECT VIDEO DEMO LINK

GITHUB LINK:

https://github.com/revstar03/NaanMudhalvan_DataAnalytics_NM2023TMID01894

PROJECT VIDEO DEMO LINK:

https://drive.google.com/file/d/13XTOK6j-ISwasbtAvQJV0y7Qg5EmDyNA/view?usp=sharing

REFERENCES

CHAPTER – 12
REFERENCES

- https://www.kaggle.com/code/upadorprofzs/indian-food-eda-data-visualization

- https://jovian.com/prathameshpy555/python-eda-indian-food-dishes-analysis

- https://www.linkedin.com/pulse/indian-food-eda-aakib-shaikh/?trk=public_profile_article_view