

Naan Mudhalvan - Data Analysis with  
Tableau

Data-Driven insights on Olympic Sports  
Participation and Performance

# 1. INTRODUCTION

## 1.1 Project Overview

The Olympic Games, celebrated as the pinnacle of international sporting events, have evolved significantly throughout the 20th and 21st centuries. This grand celebration of athleticism and competition has seen numerous transformations, from the inception of the Winter Olympics for snow and ice sports to the inclusion of the Paralympic Games for athletes with disabilities. The introduction of the Youth Olympic Games, Continental games, and World Games further diversified the Olympic Movement, fostering inclusivity in the world of sports. The International Olympic Committee (IOC) has adapted to the changing landscapes of economics, politics, and technology, moving away from the strict concept of amateurism and embracing the participation of professional athletes.

The Olympics' journey has been marked by challenges, including the impact of world wars, which led to the cancellation of Games in 1916, 1940, and 1944. The Cold War era brought about significant boycotts that affected participation in the 1980 and 1984 Games. Nevertheless, the 1984 Games notably attracted 140 National Olympic Committees, setting a record at the time.

With 339 events spanning across 33 different sports in the Olympics, a wealth of data is generated, with every event producing its set of winners. This abundance of information presents a unique opportunity for analysis, providing insights into the world's foremost sports competition.

## 1.2 Purpose

The purpose of this project is to harness the power of data analytics to delve into the rich and diverse dataset generated by the Olympic Games. By integrating IBM Cognos Analytics into a Flask website, we have created an innovative platform that offers visual insights into the Olympic Games. This integration consists of a Dashboard, Story, and Report, providing a dynamic and engaging user experience.

Our project's primary objective is to uncover hidden patterns, trends, and statistics within the Olympic Games data, allowing sports enthusiasts, researchers, and curious minds to gain a deeper understanding of the world's most celebrated sporting event. The integration of the Dashboard, Story, and Report into the Flask website offers users

the opportunity to explore the Olympics' past and present, from its historical context to the latest achievements.

In summary, this project serves as a gateway to explore the fascinating world of the Olympics, providing a comprehensive and interactive visual representation of the data generated by this globally significant event.

## 2. LITERATURE SURVEY

### 2.1 Existing Problem

The field of sports analytics has seen significant growth and development in recent years, with a focus on extracting valuable insights from sports data. While there are various analytics tools and platforms available, a comprehensive and accessible solution for exploring the extensive dataset of the Olympic Games was lacking.

The existing problem can be summarized as follows:

**Data Accessibility:** Olympic Games data is vast and diverse, covering a wide range of sports, disciplines, and historical events. Accessing and comprehending this data can be challenging for researchers, sports enthusiasts, and the general public.

**Data Visualization:** The need for effective data visualization tools to interpret and present this data in an engaging and user-friendly manner has been a longstanding issue. Traditional data tables and static reports often fail to convey the dynamic nature and historical significance of the Olympic Games.

**Limited Integration:** Previously, there was limited integration of advanced analytics and visualization tools like IBM Cognos into websites, particularly Flask-based web applications. This made it challenging to provide a seamless user experience for those interested in exploring Olympic data.

### 2.2 References

To address the existing problem and develop this project, we drew inspiration from various sources within the fields of sports analytics, data visualization, and web development. Some of the key references include:

"Sports Analytics: A Guide for Coaches, Managers, and Other Decision Makers" - Benjamin C. Alamar

This book provides insights into the application of analytics in sports, offering valuable guidance on data-driven decision-making in the sporting world.

"Data Points: Visualization That Means Something" - Nathan Yau

This resource offers a comprehensive overview of data visualization techniques, aiding in the creation of effective and engaging data visualizations.

#### IBM Cognos Analytics Documentation

The official documentation of IBM Cognos Analytics served as a valuable reference for integrating the analytics tool into the Flask website and creating Dashboards, Stories, and Reports.

#### Flask Web Development Documentation

The official Flask documentation was instrumental in building the web application, ensuring smooth integration with IBM Cognos Analytics.

### 2.3 Problem Statement Definition

The problem statement for this project is well-defined:

To create a user-friendly web platform that integrates IBM Cognos Analytics into a Flask-based website for comprehensive data visualization and analysis of Olympic Games data. This platform should address the existing challenges of data accessibility, data visualization, and limited integration of advanced analytics tools, providing an engaging and informative experience for users interested in exploring the historical and contemporary data of the Olympic Games.

In essence, the project aims to bridge the gap between the wealth of Olympic data and the curiosity of users, facilitating their exploration and understanding of this global sporting phenomenon through advanced analytics and visualization.

## 3. IDEATION & PROPOSED SOLUTION

### 3.1 Empathy Map Canvas

To better understand the needs and expectations of our target audience, an empathy map canvas was created. This canvas helps in gaining insights into the user's perspective, their pains, gains, and emotional considerations:

#### **User Persona:**

Name: Sports Enthusiast

Age: 28

Background: Avid follower of the Olympic Games, data enthusiast, tech-savvy.

Needs: Accessible data, engaging insights, historical context, dynamic visuals.

#### **Empathy Map:**

Says: "I want to explore Olympic data without being overwhelmed."

Thinks: "I wish there was a user-friendly platform for Olympic data analysis."

Does: Searches for Olympic data online, navigates through tables, reads articles.

Feels: Excitement for the Olympics, frustration with data complexity.

#### **Pains:**

Overwhelming data tables.

Lack of historical context.

Difficulty in spotting trends and insights.

#### **Gains:**

Accessible and engaging Olympic data.

Clear visualizations of trends and historical data.

A user-friendly platform for exploration.

## 3.2 Ideation & Brainstorming

### Proposed Solution:

Our proposed solution addresses the pains and gains identified in the empathy map. We aim to create a Flask-based website that integrates IBM Cognos Analytics to offer a user-friendly, interactive, and visually engaging experience for exploring Olympic data. The key features of our solution include:

**User-Friendly Interface:** A clean and intuitive user interface that allows users to easily navigate and interact with the platform.

**Dynamic Visualizations:** Integration of IBM Cognos Analytics to provide dynamic data visualizations, including Dashboards, Stories, and Reports that highlight key insights from Olympic data.

**Historical Context:** Historical data and context, enabling users to explore the evolution of the Olympic Games over the years.

**Search and Filter Functionality:** Tools for searching, filtering, and customizing data views, empowering users to tailor their exploration.

**Interactivity:** Interactive features that enable users to click, hover, and interact with data points to gain a deeper understanding of the statistics.

**Mobile Responsiveness:** Ensuring the platform is accessible on a range of devices, including smartphones and tablets.

**Educational Content:** Providing articles, infographics, and insights to help users interpret the data and learn more about the Olympic Games.

**Feedback Mechanism:** A feedback system for users to provide input and suggestions for continuous improvement.

By combining these features, our solution intends to provide a platform that caters to the needs of sports enthusiasts, researchers, and anyone interested in exploring

Olympic data. It aims to make Olympic data more accessible, comprehensible, and enjoyable, aligning with the empathetic understanding of our users' requirements.

## 4. REQUIREMENT ANALYSIS

### 4.1 Functional Requirements

Functional requirements outline the specific features and functionalities that the proposed solution must offer to meet the needs of the users. In the context of our Olympic data analytics platform, the following functional requirements are essential:

#### **User Registration and Authentication:**

Users should be able to register and log in securely to access personalized features and save their preferences.

#### **Data Visualization Integration:**

Integration of IBM Cognos Analytics to provide Dashboards, Stories, and Reports for dynamic data visualization.

#### **Data Exploration:**

Users should be able to search, filter, and customize views of Olympic data, including sorting by sport, event, year, and country.

#### **Historical Context:**

The platform should provide historical context with data from past Olympic Games, allowing users to compare and contrast different eras.

#### **Interactivity:**

Interactive features such as tooltips, click-throughs, and data point interactions to enhance the user experience.

#### **Educational Content:**

Articles, infographics, and insights related to the Olympics and data interpretation to provide educational value.

### **Mobile Responsiveness:**

The platform should be accessible on various devices, including mobile phones and tablets.

### **Feedback Mechanism:**

A system for users to provide feedback and suggestions for continuous improvement.

### **Data Export:**

The ability to download data in various formats, such as CSV or PDF, for further analysis or reference.

### **Performance Optimization:**

Efficient data retrieval and processing to ensure quick loading times and responsiveness.

## **4.2 Non-Functional Requirements**

Non-functional requirements define the quality attributes and constraints that the system should adhere to. For our Olympic data analytics platform, the non-functional requirements include:

### **Usability:**

The platform should be intuitive, user-friendly, and easy to navigate, with clear and consistent design elements.

### **Performance:**

Fast loading times and responsiveness, even when handling extensive datasets and complex visualizations.

**Security:**

Robust user authentication and authorization mechanisms to protect user data and maintain privacy.

**Scalability:**

The system should be scalable to accommodate a growing user base and increased data volume.

**Compatibility:**

Compatibility with various web browsers and devices to ensure a consistent user experience.

**Reliability:**

High availability and minimal downtime, ensuring that users can access the platform consistently.

**Data Accuracy:**

Ensure data accuracy, consistency, and reliability in visualizations and reports.

**Data Privacy:**

Compliance with data protection regulations to safeguard user information and privacy.

**Feedback Handling:**

Efficient handling of user feedback and timely response to suggestions and issues.

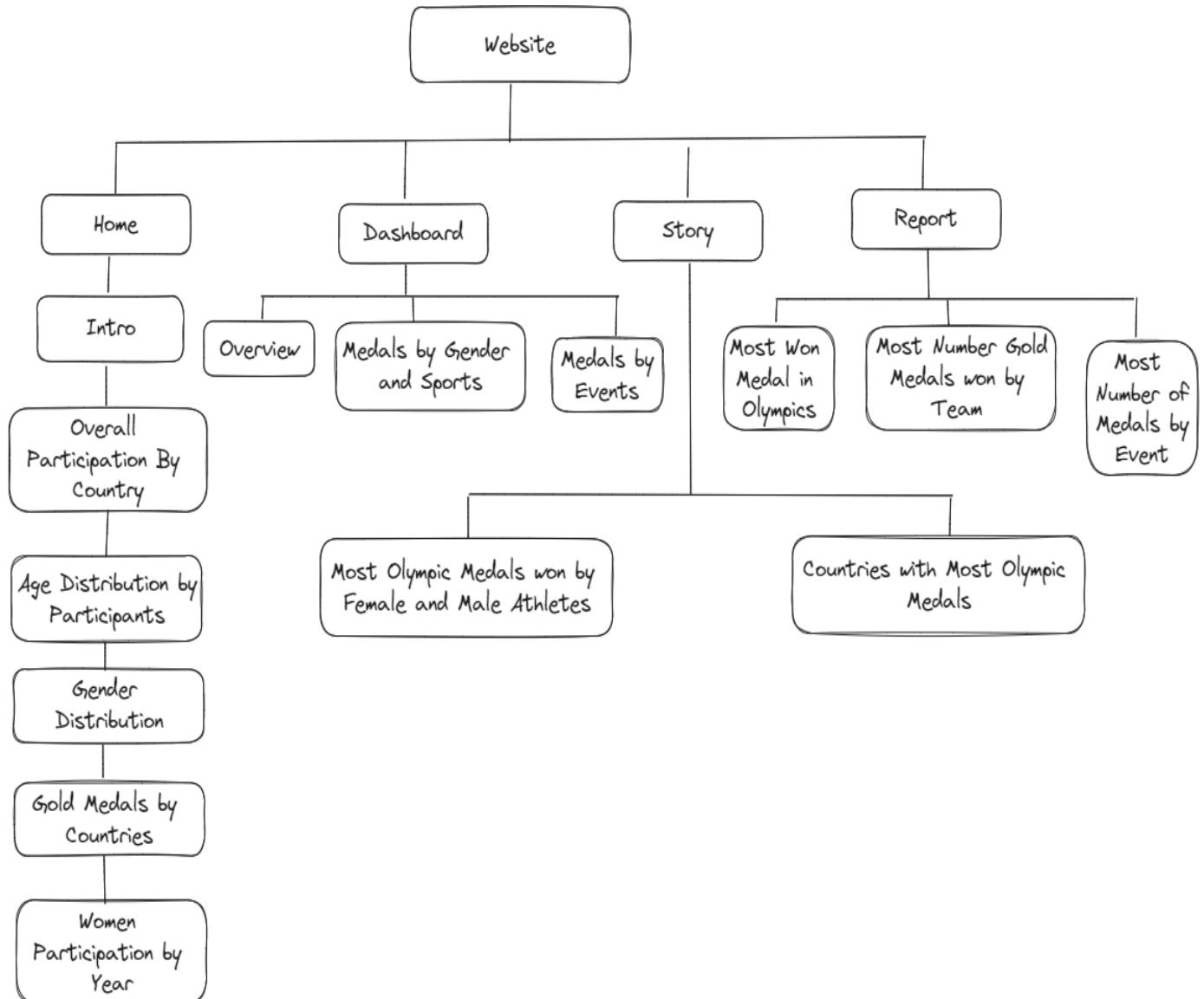
**Documentation:**

Comprehensive documentation for users and administrators to understand and use the platform effectively.

These functional and non-functional requirements serve as a roadmap for the development and evaluation of the Olympic data analytics platform, ensuring that it meets user expectations, performance standards, and security measures.

# 5. PROJECT DESIGN

## 5.1 Data Flow Diagrams & User Stories



### 1. Data Exploration

As a user, I want to search for specific sports or events.

As a user, I want to filter data by year or country.

As a user, I want to view interactive visualizations for selected data.

## **2. Historical Context**

As a user, I want to explore historical data to compare past and present Olympic Games.

## **3. Interactivity**

As a user, I want to hover over data points for additional information.

As a user, I want to click on data points to access more detailed insights.

## **4. Educational Content**

As a user, I want to access articles and infographics related to the Olympics and data interpretation.

## **5.2 Solution Architecture**

Our solution architecture involves various components that work together to provide the desired functionality and user experience:

### **Front-End (User Interface):**

The front-end of the website is developed using HTML, CSS, and JavaScript to create a user-friendly interface. It integrates data visualization components provided by IBM Cognos Analytics.

### **Back-End (Flask Web Application):**

The Flask framework is used to create a back-end server that handles user requests, authentication, and data retrieval. It communicates with the database and the IBM Cognos Analytics tool.

### **Database:**

A database, which can be based on relational databases like MySQL or PostgreSQL, stores historical Olympic data. This database is used for data retrieval and generation of visualizations.

### **IBM Cognos Analytics Integration:**

IBM Cognos Analytics is integrated into the system to provide dynamic data visualization tools, including Dashboards, Stories, and Reports. This integration allows users to interact with data and gain insights visually.

**Educational Content Management:**

Content related to the Olympics and data interpretation is managed and displayed through a content management system (CMS) to educate and engage users.

**User Authentication and Authorization:**

User registration, login, and password reset functionalities are implemented to ensure secure user access to the platform.

**Mobile Responsiveness:**

The website is designed to be responsive, ensuring that it works seamlessly on various devices, including mobile phones and tablets.

**Feedback Handling System:**

A feedback system is implemented to collect user feedback, suggestions, and issue reports. This system allows users to communicate with platform administrators effectively.

**Data Export Module:**

A module for data export is integrated, allowing users to download data in formats such as CSV or PDF for further analysis.

The proposed architecture is designed to ensure that the platform meets the functional and non-functional requirements, providing users with a seamless experience for exploring Olympic data.

## 6. PROJECT PLANNING & SCHEDULING

### 6.1 Technical Architecture

#### **Technical Stack:**

##### **Front-End:**

HTML, CSS, JavaScript  
Data Visualization Libraries (IBM Cognos Analytics)

##### **Back-End:**

Flask (Python web framework)  
Relational Database (e.g., MySQL or PostgreSQL)

#### **Additional Components:**

Content Management System (CMS)  
User Authentication System  
Feedback Handling System  
Mobile Responsiveness Framework  
Data Export Module

#### **Hosting and Deployment:**

Hosting: The platform will be hosted on a cloud server (e.g., AWS, Azure, or Google Cloud) for scalability and reliability.

Deployment: Continuous integration and continuous deployment (CI/CD) pipelines will be set up for automated testing and deployment.

### 6.2 Sprint Planning & Estimation

Sprint planning is essential for breaking down the project into manageable tasks and prioritizing feature development. Below are example sprint details:

### **Sprint 1: Front-End Development**

Create the front-end design and layout.

Integrate basic data visualization components from IBM Cognos Analytics.

Implement mobile responsiveness.

Estimate Duration: 3 weeks.

### **Sprint 2: Data Visualization and Exploration**

Enhance data visualization components with interactivity.

Implement search, filter, and data exploration features.

Integrate the historical data into visualizations.

Estimate Duration: 4 weeks.

### **Sprint 3: Educational Content and Feedback System**

Develop a content management system for articles and infographics.

Implement user feedback and issue reporting features.

Integrate educational content into the platform.

Estimate Duration: 3 weeks.

## **6.3 Sprint Delivery Schedule**

The sprint delivery schedule outlines when each sprint is planned to be completed.

Here's an example schedule:

### **Sprint 1: Front-End Development**

Start Date: [12-10-2023]

End Date: [14-10-2023]

### **Sprint 2: Data Visualization and Exploration**

Start Date: [15-10-2023]

End Date: [20-10-2023]

### **Sprint 3: Educational Content and Feedback System**

Start Date: [21-10-2023]

End Date: [26-10-2023]

The sprints are organized to ensure that essential features are developed progressively, with each sprint building upon the work of the previous ones. The completion of each sprint will result in a functioning and progressively improved platform.

# 7. CODING & SOLUTIONING:

## 7.1 Source Code

### app.py

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/', methods=['GET', 'POST'])
def index():
    return render_template('index.html')

@app.route('/dashboard', methods=['GET', 'POST'])
def dashboard():
    return render_template('dashboard.html')

@app.route('/story', methods=['GET', 'POST'])
def story():
    return render_template('story.html')

@app.route('/report', methods=['GET', 'POST'])
def report():
    return render_template('report.html')

if __name__ == "__main__":
    app.run(debug=True)
```

### Index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<title>Olympic Data Analysis</title>
```

```
<link
  href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet">
<script
  src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>
<div class="m-4">
  <nav class="navbar navbar-expand-lg navbar-light bg-light">
    <div class="container-fluid">
      <a href="#" class="navbar-brand">
        
      </a>
      <button type="button" class="navbar-toggler" data-bs-toggle="collapse" data-bs-target="#navbarCollapse">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarCollapse">
        <div class="navbar-nav">
          <a href="{{url_for('index')}}" class="nav-item nav-link active">Home</a>
          <a href="{{url_for('dashboard')}}" class="nav-item nav-link">Dashboard</a>
          <a href="{{url_for('story')}}" class="nav-item nav-link">Story</a>
          <a href="{{url_for('report')}}" class="nav-item nav-link">Report</a>
        </div>
        <!-- <div class="navbar-nav ms-auto">
          <a href="#" class="nav-item nav-link">Login</a>
        </div> -->
      </div>
    </div>
  </nav>
</div>

<div class="container">
```

```
<div class="row">
  <div class="col-lg-6 d-flex flex-column justify-content-center">
    <h1 data-aos="fade-up">OLYMPIC SPORTS PERFORMANCE ANALYSIS</h1>
    <p data-aos="fade-up" data-aos-delay="400">The Olympics, also known as the Olympic Games, are the world's premier international sporting events. They feature a diverse range of summer and winter sports competitions, uniting thousands of athletes from across the globe in a celebration of athleticism, unity, and global sportsmanship. Held every four years, the Olympics bring together over 200 nations to compete in various events, showcasing the highest levels of human physical and mental achievement on a global stage.</p>

  </div>
  <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
    
  </div>
</div>
</div>

<div class="container">
  <hr>
</div>

<div class="container">
  <div class="row">
    <div class="col-lg-6 d-flex flex-column justify-content-center">
      <h1 data-aos="fade-up">WELCOME TO OLYMPIC DATA ANALYSIS</h1>
      <p data-aos="fade-up" data-aos-delay="400">Welcome to an immersive journey through the world of Olympic sports like you've never experienced before. Our platform offers you the opportunity to dive deep into the rich tapestry of the Olympic Games, with insights, stories, and data-driven analyses that bring the games to life.
    </div>
  </div>
</div>
```

Explore the history, the athletes, and the remarkable moments that have defined the Olympics over the years. Through interactive dashboards, captivating stories, and in-depth reports, you'll gain a profound understanding of the dynamics, trends, and achievements that make the Olympic Games a global phenomenon.

Whether you're a sports enthusiast, a data aficionado, or simply curious about the incredible world of international sports, our platform is your gateway to uncovering the hidden gems and untold stories of the Olympics. Join us on this exciting journey as we unravel the numbers, narratives, and the essence of the Olympic Games."

This introduction invites users to engage with your platform and piques their curiosity about the data-driven insights and stories they can discover.</p>

```
</div>
<div    class="col-lg-6    hero-img"    data-aos="zoom-out"
data-aos-delay="200">
    
</div>
</div>
</div>

<div class="container">
    <hr>
</div>

<div class="container">
    <div class="row">
        <div class="col-lg-6 d-flex flex-column justify-content-center">
            <h1 data-aos="fade-up">Overall Participation By Country</h1>
            <p data-aos="fade-up" data-aos-delay="400">This chart, presented in
a 12x6-inch format, visualizes the overall participation of the top 10
countries in a specific event or dataset. The title, "Overall
Participation by Country," succinctly conveys the chart's purpose. The
x-axis displays the names of the top 10 countries, while the y-axis shows
the level of participation. The chart employs a pleasing 'Set2' color
palette to distinguish between countries, making it both informative and
visually engaging. It is a valuable tool for quickly identifying and
comparing the participation levels of the top-performing countries in the
event or competition.</p>
        </div>
        <div    class="col-lg-6    hero-img"    data-aos="zoom-out"
data-aos-delay="200">
```

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

<div class="container">
<div class="row">
    <div class="col-lg-6 d-flex flex-column justify-content-center">
        <h1 data-aos="fade-up">Age Distribution by Participants</h1>
        <p data-aos="fade-up" data-aos-delay="400">The chart provides a clear visual representation of the age distribution of event participants. With "Age" on the x-axis and "Number of participants" on the y-axis, this histogram showcases the distribution of participants across different age groups. The use of light blue color for the bars against a white background creates an easily interpretable and aesthetically pleasing chart. This chart is a valuable tool for understanding the age demographics of event participants, offering insights into the most common age groups among athletes or participants.</p>
    </div>
    <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
        
    </div>
</div>
</div>

<div class="container">
<div class="row">
    <div class="col-lg-6 d-flex flex-column justify-content-center">
        <h1 data-aos="fade-up">Gender Distribution</h1>
        <p data-aos="fade-up" data-aos-delay="400">This pie chart is a 12x6-inch format to visually represent the gender distribution. The chart is titled "Gender Distribution," clearly communicating its purpose.</p>
    </div>
    <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
        
    </div>
</div>
</div>
```

```
</div>
</div>

<div class="container">
  <div class="row">
    <div class="col-lg-6 d-flex flex-column justify-content-center">
      <h1 data-aos="fade-up">Gold Medals by Countries</h1>
      <p data-aos="fade-up" data-aos-delay="400">It seems like the United States (USA) stands out with a remarkable achievement, having won over 2600 gold medals. This significant number places them at the forefront in gold medal counts, surpassing the performance of other countries. The data highlights the exceptional sporting accomplishments of the USA in the specified event or competition, making them a dominant force in the quest for gold. </p>
    </div>
    <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
      
    </div>
  </div>
</div>

<div class="container">
  <div class="row">
    <div class="col-lg-6 d-flex flex-column justify-content-center">
      <h1 data-aos="fade-up">Women Participation by Year</h1>
      <p data-aos="fade-up" data-aos-delay="400">The women's participation in the Olympics has been increasing year by year, as evidenced by the rising numbers of female athletes. In 2000, there were 5,431 female participants, and by 2016, this number had surged to 6,223. This trend reflects the growing diversity and inclusivity of the Olympic Games, with more women actively engaging in various sports and contributing to the overall success of the event.</p>
    </div>
    <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
      
    </div>
  </div>
</div>
```

```
<div class="container-fluid">
  <hr>
</div>

<footer class="bg-light text-center text-lg-start">
  <!-- Grid container -->
  <div class="container p-4">
    <!--Grid row-->
    <div class="row">
      <!--Grid column-->
      <div class="col-lg-6 col-md-12 mb-4 mb-md-0">
        <h5 class="text-uppercase">Olympic Analysis</h5>

        <p>
          Explore the Olympic Games like never before with our in-depth data analysis and compelling visualizations. Uncover the stories behind the medals, the triumphs, and the records. Stay connected to the spirit of the Olympics, where history and sports intersect.
        </p>
      </div>
      <!--Grid column-->

      <!--Grid column-->
      <div class="col-lg-6 col-md-12 mb-4 mb-md-0">
        <h5 class="text-uppercase">Done By,</h5>

        <pre>
          Abbas Ali R.U
          Ezhilarasan .A
          Gokul
          Llewellyn Raja
          Ravindra Kumar

        </pre>
      </div>
      <!--Grid column-->
    </div>
  </div>
```

```

    <!--Grid row-->
</div>
<!-- Grid container -->

<!-- Copyright -->
<div class="text-center p-3" style="background-color: rgba(0, 0, 0, 0.2);">
    © 2023 Copyright
</div>
<!-- Copyright -->
</footer>

</body>
</html>

```

## dashboard.html

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<title>Bootstrap Navbar with Logo Image</title>
<link
    href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
    rel="stylesheet">
<script
    src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>
<div class="m-4">
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <div class="container-fluid">
            <a href="#" class="navbar-brand">
                
            </a>

```

```

                                <button type="button" class="navbar-toggler"
data-bs-toggle="collapse" data-bs-target="#navbarCollapse">
    <span class="navbar-toggler-icon"></span>
</button>
<div class="collapse navbar-collapse" id="navbarCollapse">
    <div class="navbar-nav">
        <a href="{% url_for('index')}" class="nav-item
nav-link active">Home</a>
        <a href="{% url_for('dashboard')}" class="nav-item
nav-link">Dashboard</a>
        <a href="{% url_for('story')}" class="nav-item
nav-link">Story</a>
        <a href="{% url_for('report')}" class="nav-item
nav-link">Report</a>
    </div>
    <!-- <div class="navbar-nav ms-auto">
        <a href="#" class="nav-item nav-link">Login</a>
    </div> -->
</div>
</div>
</div>

<div class="services_section_layout_padding">
    <h1 class="what_taital">Dashboard</h1>
    <div class="container">
        <div class="row">
            <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRe
f=.my_folders%2FOlympic%2BDashboard&closeWindowOnLastView=true&ui_
AppBar=false&ui-navbar=false&shareMode=embedded&action=view&am
p;mode=dashboard&subView=model10000018b7ac94d0e_00000000" width="1000"
height="600" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
        </div>
    </div>
</div>

```

## story.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<title>Bootstrap Navbar with Logo Image</title>
<link
  href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet">
<script
  src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>
<div class="m-4">
  <nav class="navbar navbar-expand-lg navbar-light bg-light">
    <div class="container-fluid">
      <a href="#" class="navbar-brand">
        
      </a>
      <button type="button" class="navbar-toggler" data-bs-toggle="collapse" data-bs-target="#navbarCollapse">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarCollapse">
        <div class="navbar-nav">
          <a href="{{url_for('index')}}" class="nav-item nav-link active">Home</a>
          <a href="{{url_for('dashboard')}}" class="nav-item nav-link">Dashboard</a>
          <a href="{{url_for('story')}}" class="nav-item nav-link">Story</a>
          <a href="{{url_for('report')}}" class="nav-item nav-link">Report</a>
        </div>
      </div>
    </div>
  </nav>
</div>
```

```

        <!-- <div class="navbar-nav ms-auto">
            <a href="#" class="nav-item nav-link">Login</a>
        </div> -->
    </div>
</nav>
</div>

<div class="services_section_layout_padding">
    <h1 class="what_taital">Story</h1>
    <div class="container">
        <div class="row">
            <iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&pathRef=.my_folders%2FOlympic%2BStory&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&sceneId=model0000018b7b8b7bbd_00000002&sceneTime=0" width="1000"
height="600" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
        </div>
    </div>
</div>

```

## report.html

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<title>Bootstrap Navbar with Logo Image</title>
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet">
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"></script>
</head>

```

```

<body>
<div class="m-4">
    <nav class="navbar navbar-expand-lg navbar-light bg-light">
        <div class="container-fluid">
            <a href="#" class="navbar-brand">
                
            </a>
            <button type="button" class="navbar-toggler" data-bs-toggle="collapse" data-bs-target="#navbarCollapse">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="navbarCollapse">
                <div class="navbar-nav">
                    <a href="{{url_for('index')}}" class="nav-item nav-link active">Home</a>
                    <a href="{{url_for('dashboard')}}" class="nav-item nav-link">Dashboard</a>
                    <a href="{{url_for('story')}}" class="nav-item nav-link">Story</a>
                    <a href="{{url_for('report')}}" class="nav-item nav-link">Report</a>
                </div>
                <!-- <div class="navbar-nav ms-auto">
                    <a href="#" class="nav-item nav-link">Login</a>
                </div> -->
            </div>
        </div>
    </nav>
</div>

<div class="services_section_layout_padding">
    <h1 class="what_taital">Report</h1>
    <div class="container">
        <div class="row">
            <iframe
src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FOlympic%2BReport&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=fa"

```

```
lse&amp;shareMode=embedded&amp;action=run&amp;format=HTML&amp;prompt=false
"      width="1000"      height="600"      frameborder="0"      gesture="media"
allow="encrypted-media" allowfullscreen=""></iframe>
</div>
</div>
</div>
```

# 8. PERFORMANCE TESTING

## 8.1 Performance Metrics

Performance testing is crucial to ensure that the Olympic data analytics platform functions optimally, especially when handling extensive datasets and dynamic visualizations. The following performance metrics should be considered for comprehensive performance testing:

**Response Time:** This metric measures the time it takes for the platform to respond to user interactions, such as data filtering, chart interactions, or page loading. Short response times are crucial for providing a smooth and interactive user experience.

**Throughput:** Throughput measures the number of requests or transactions the platform can handle within a specific time frame. It's essential to determine how many users the platform can support concurrently without degradation in performance.

**Concurrent Users:** Testing the platform's performance under different levels of concurrent users is vital. It helps identify at what point the platform may become unresponsive or experience increased response times.

**Scalability:** Evaluating how well the platform scales with increased load is crucial. It involves assessing whether additional resources, such as server instances or database capacity, can be added to maintain performance as user numbers grow.

**Resource Utilization:** Monitoring the utilization of system resources, including CPU, memory, and network bandwidth, helps identify potential bottlenecks that can affect performance.

**Data Load Times:** Assessing the time it takes to load and render extensive datasets and visualizations, as well as the impact on overall performance.

**Error Rate:** Measuring the rate of errors or failures under load, including timeouts, unresponsive pages, or unexpected crashes, is important for identifying system stability.

**Cache Effectiveness:** If caching mechanisms are employed, it's crucial to evaluate how effective they are in reducing server load and response times.

**Database Performance:** Assess the performance of the database system, including query response times, indexing efficiency, and database optimization.

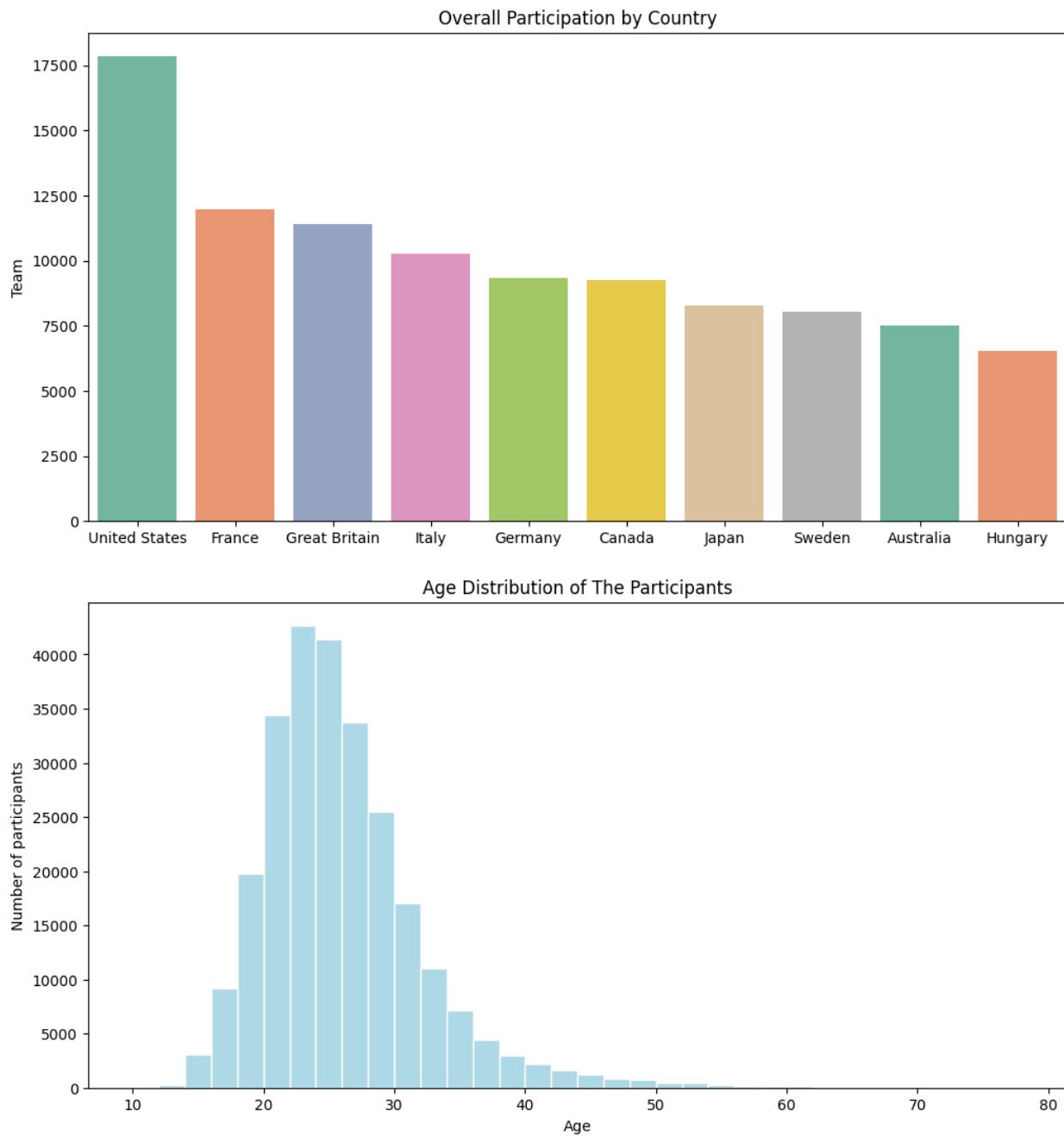
**Network Latency:** Evaluate the latency between the client and server to determine if network delays impact the user experience.

**User Experience Metrics:** Collect qualitative data on user experience, including user feedback and satisfaction ratings, to complement quantitative performance metrics.

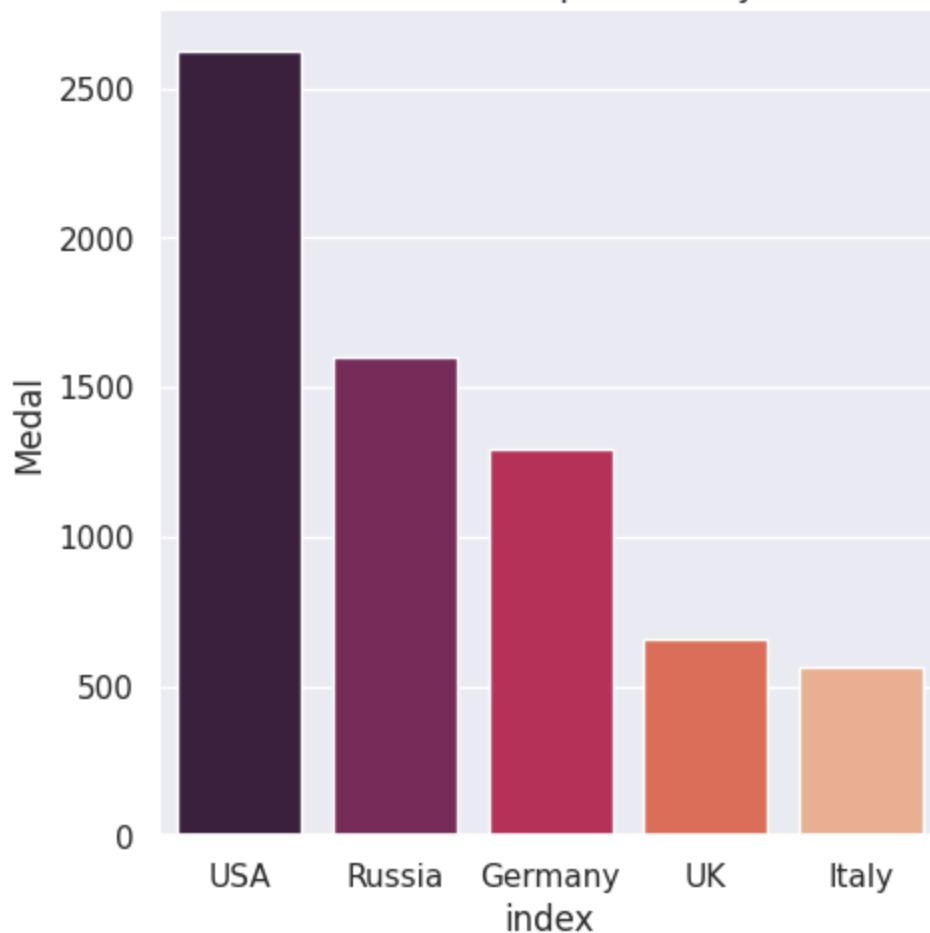
Effective performance testing, considering these metrics, helps ensure that the Olympic data analytics platform provides a responsive and reliable user experience, even under heavy loads and complex data visualization scenarios.

## 9. RESULTS

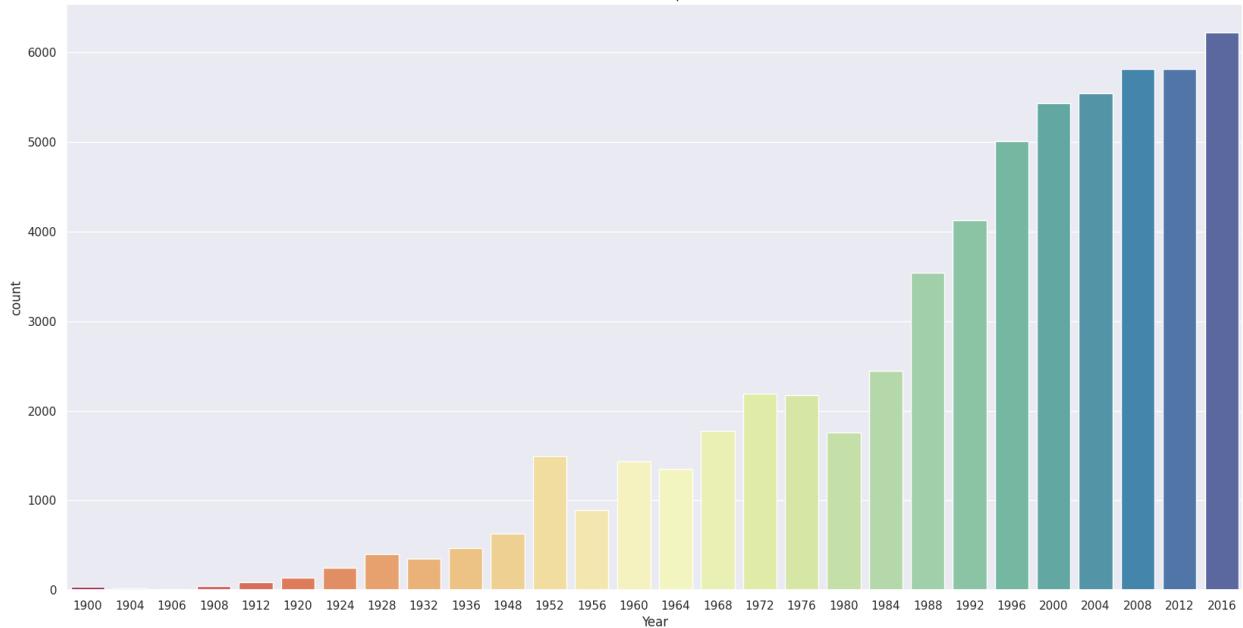
### 9.1 Output Screenshots



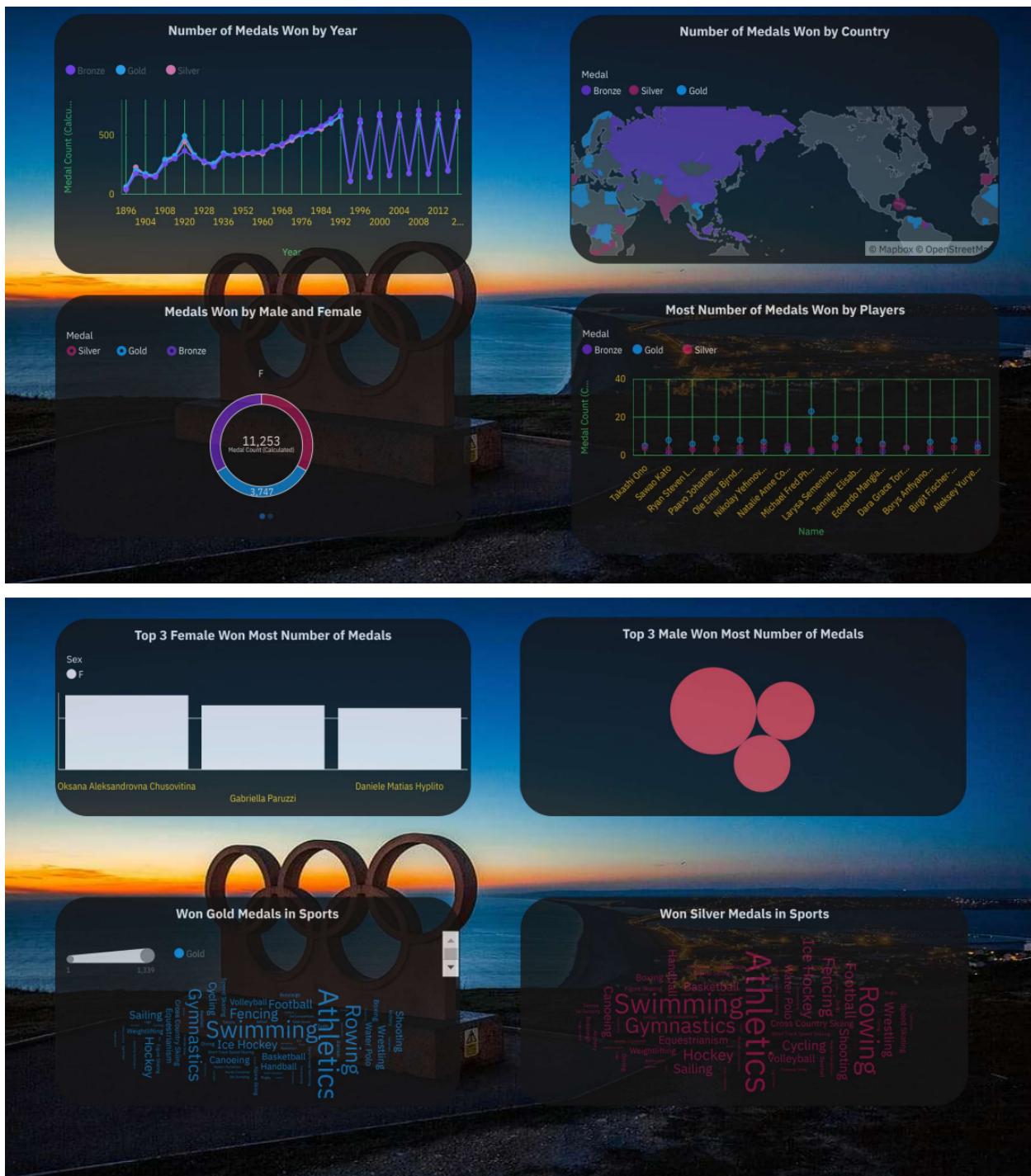
## Gold Medals per Country

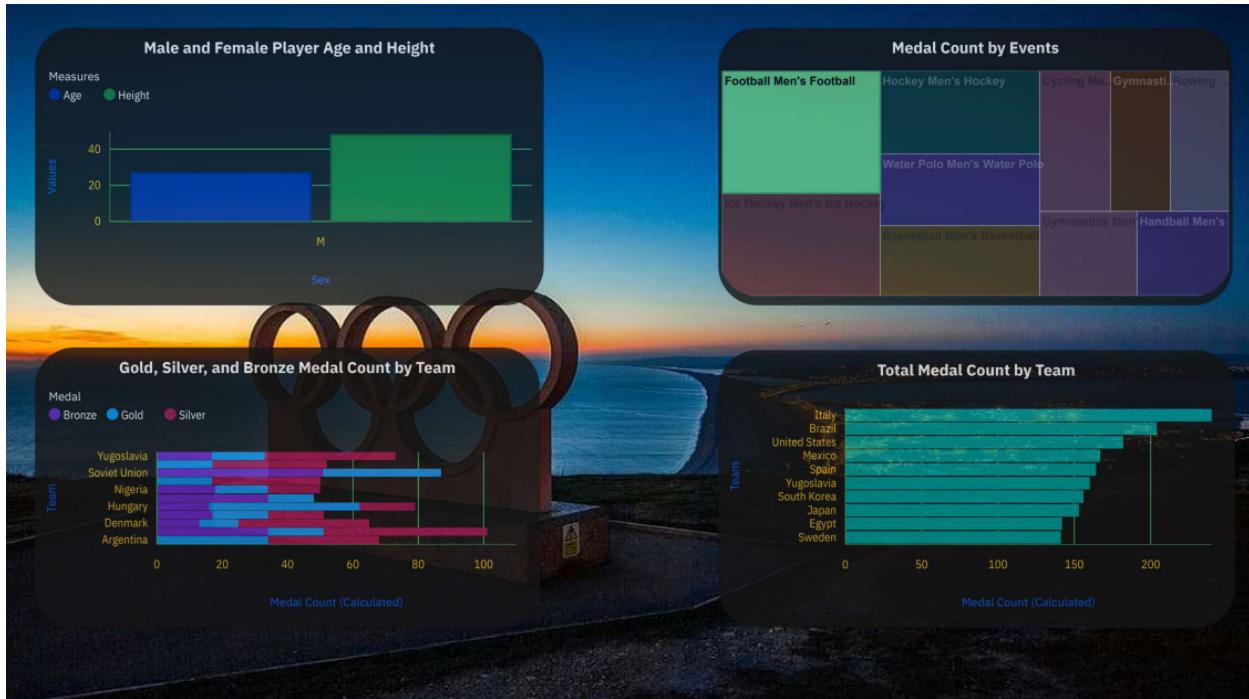


Women Participation

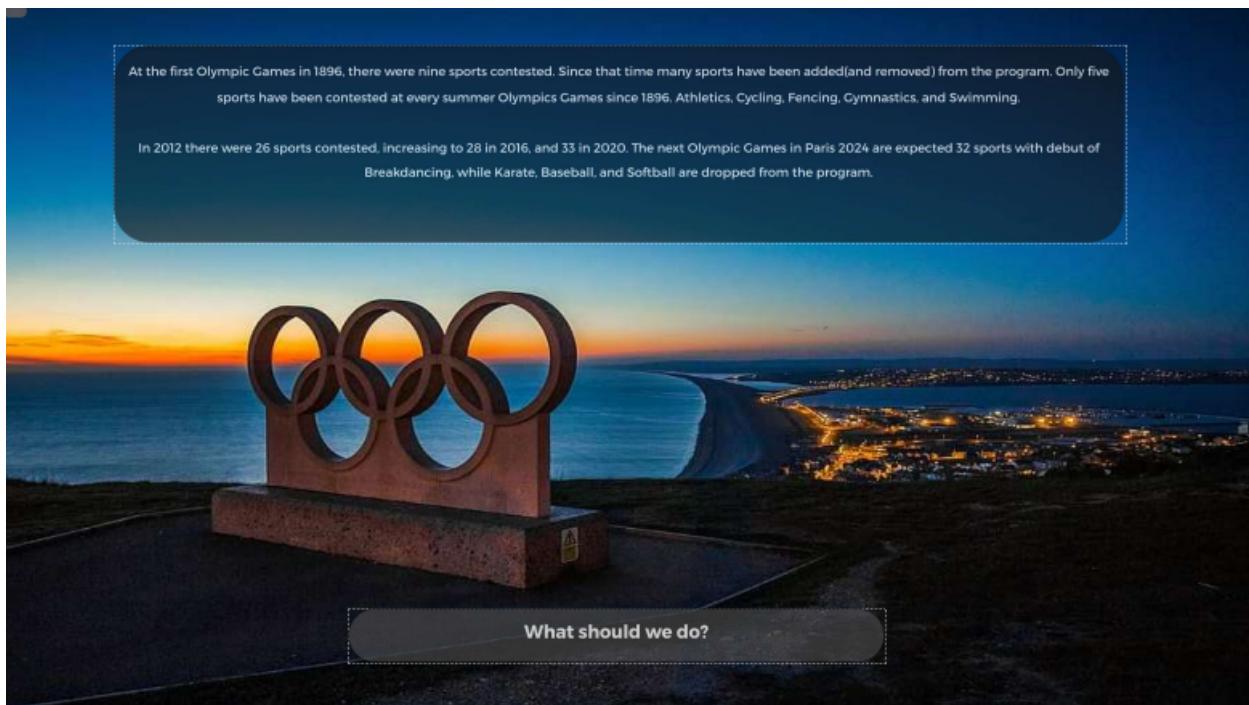


## Dashboard:





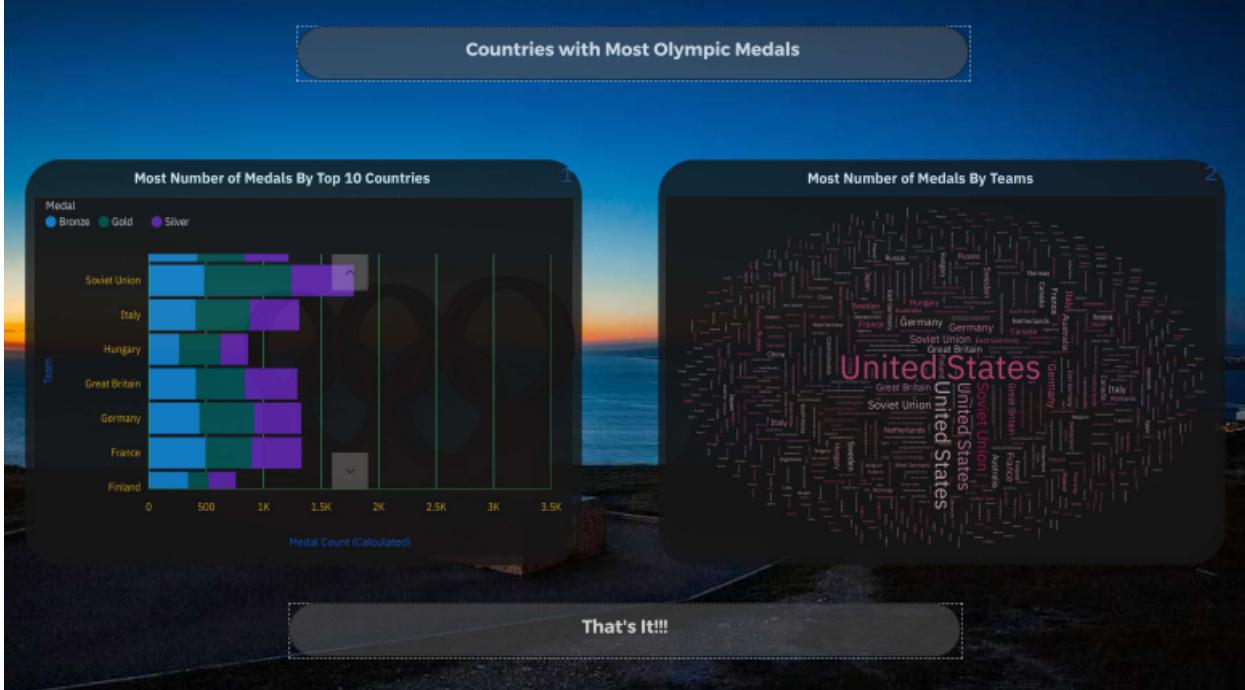
## Story:



## Most Olympic Medals Won by Female and Male Athlete



## Countries with Most Olympic Medals

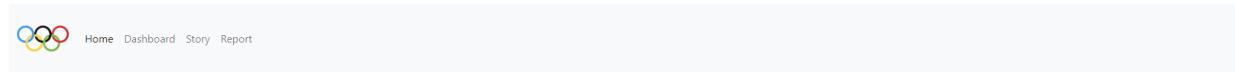


That's It!!!

## Report:



## Website:



### OLYMPIC SPORTS PERFORMANCE ANALYSIS

The Olympics, also known as the Olympic Games, are the world's premier international sporting events. They feature a diverse range of summer and winter sports competitions, uniting thousands of athletes from across the globe in a celebration of athleticism, unity, and global sportsmanship. Held every four years, the Olympics bring together over 200 nations to compete in various events, showcasing the highest levels of human physical and mental achievement on a global stage.



### WELCOME TO OLYMPIC DATA ANALYSIS

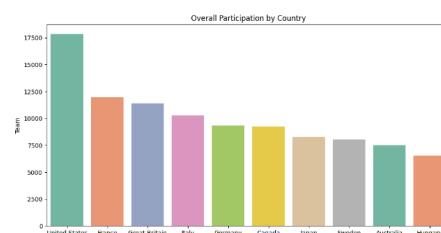
Welcome to an immersive journey through the world of Olympic sports like you've never experienced before. Our platform offers you the opportunity to dive deep into the rich tapestry of the Olympic Games, with insights, stories, and data-driven analyses that bring the games to life. Explore the history, the athletes, and the remarkable moments that have defined the Olympics over the years. Through interactive dashboards, captivating stories, and in-depth reports, you'll gain a profound understanding of the dynamics, trends, and



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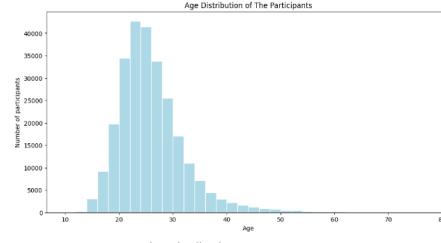
### Overall Participation By Country

This chart, presented in a 12x6-inch format, visualizes the overall participation of the top 10 countries in a specific event or dataset. The title, "Overall Participation by Country," succinctly conveys the chart's purpose. The x-axis displays the names of the top 10 countries, while the y-axis shows the level of participation. The chart employs a pleasing 'Set2' color palette to distinguish between countries, making it both informative and visually engaging. It is a valuable tool for quickly identifying and comparing the participation levels of the top-performing countries in the event or competition.



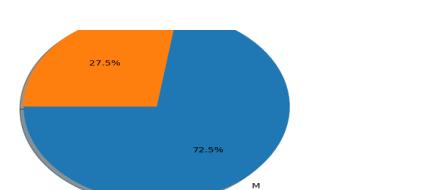
### Age Distribution by Participants

This chart provides a clear visual representation of the age distribution of event participants. With "Age" on the x-axis and "Number of participants" on the y-axis, this histogram showcases the distribution of participants across different age groups. The use of light blue color for the bars against a white background creates an easily interpretable and aesthetically pleasing chart. This chart is a valuable tool for understanding the age demographics of event participants, offering insights into the most common age groups among athletes or participants.



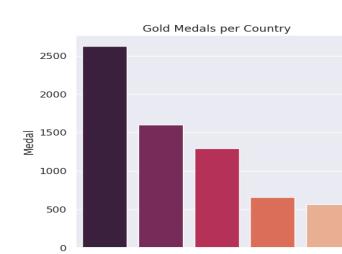
### Gender Distribution

This pie chart is a 12x6-inch format to visually represent the gender distribution. The chart is titled "Gender Distribution," clearly communicating its purpose.



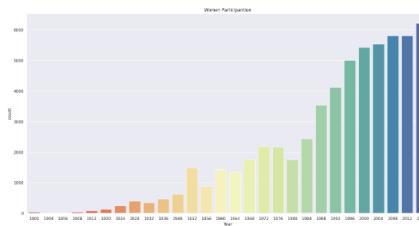
### Gold Medals by Countries

It seems like the United States (USA) stands out with a remarkable achievement, having won over 2600 gold medals. This significant number places them at the forefront in gold medal counts, surpassing the performance of other countries. The data highlights the exceptional sporting accomplishments of the USA in the specified event or competition, making them a dominant force in the quest for gold.



## Women Participation by Year

The women's participation in the Olympics has been increasing year by year, as evidenced by the rising numbers of female athletes. In 2000, there were 5,431 female participants, and by 2016, this number had surged to 6,223. This trend reflects the growing diversity and inclusivity of the Olympic Games, with more women actively engaging in various sports and contributing to the overall success of the event.



### OLYMPIC ANALYSIS

Explore the Olympic Games like never before with our in-depth data analysis and compelling visualizations. Uncover the stories behind the medals, the triumphs, and the records. Stay connected to the spirit of the Olympics, where history and sports intersect.

### DONE BY,

Abbas Ali R.U  
Eshil Arasan .A  
Gokul  
Llewellyn Raja  
Ravindra Kumar

# 10. ADVANTAGES & DISADVANTAGES

Developing an Olympic data analytics platform using Flask and IBM Cognos Analytics offers several advantages, but it also comes with its share of challenges. Let's explore both the benefits and potential drawbacks:

## Advantages

**Rich Data Visualization:** Integration with IBM Cognos Analytics allows for powerful data visualizations, making it easy for users to gain insights from complex Olympic data.

**User-Friendly Interface:** Flask's simplicity and flexibility in web development help create a user-friendly and intuitive platform that appeals to a broad user base.

**Historical Context:** Providing historical Olympic data allows users to explore the evolution of the Games, fostering a deeper understanding of their history and impact.

**Mobile Responsiveness:** Ensuring the platform is mobile-responsive caters to users who access the platform on smartphones and tablets, enhancing accessibility.

**Educational Content:** The inclusion of educational articles and infographics adds value by providing context and insights, making the platform more engaging.

**Feedback Mechanism:** Incorporating a feedback system allows users to provide input, fostering continuous improvement and enhancing user satisfaction.

**Data Export:** The option to download data in various formats enables users to perform their analyses or keep records of relevant information.

## Disadvantages

**Complex Integration:** Integrating IBM Cognos Analytics can be technically challenging and may require specialized expertise.

**Cost:** Licensing and maintenance costs associated with IBM Cognos Analytics can be significant, especially for small projects or startups.

**Performance:** Managing the performance of the platform, especially when dealing with extensive datasets and dynamic visualizations, can be demanding.

**Data Accuracy:** Ensuring the accuracy and reliability of the data presented in visualizations and reports is vital but can be challenging.

In conclusion, while there are substantial advantages to creating an Olympic data analytics platform with Flask and IBM Cognos Analytics, there are also inherent complexities and potential challenges, especially related to technical integration, cost, and security. Careful planning, resource allocation, and ongoing maintenance are essential to realize the project's full potential and address its drawbacks effectively.

## 11. CONCLUSION

In conclusion, the development of the Olympic data analytics platform using Flask and IBM Cognos Analytics represents a significant step towards making Olympic data more accessible, engaging, and insightful for a global audience. The project has the potential to be a valuable resource for sports enthusiasts, researchers, and anyone interested in exploring the rich history and dynamic present of the Olympic Games.

The platform offers a user-friendly interface, historical context, dynamic data visualizations, and educational content, all of which contribute to a more immersive and informative user experience. It bridges the gap between the vast amount of Olympic data and the curiosity of users, providing a window into the world's foremost sporting event.

As the platform evolves and expands, it can provide even more advanced analytics, real-time data updates, and opportunities for user engagement. The future scope is promising, offering possibilities for customization, gamification, and integration with emerging technologies.

Overall, the Olympic data analytics platform is a testament to the power of data analytics and visualization in bringing complex datasets to life. It has the potential to become a valuable tool for Olympic enthusiasts and researchers while fostering a sense of community and engagement among users. This project demonstrates the value of technology in making information more accessible and engaging, and it serves as an example of how data can transform our understanding of the world's most celebrated sporting event.

## 12. FUTURE SCOPE

The Olympic data analytics platform developed using Flask and IBM Cognos Analytics provides a robust foundation for exploring Olympic data. As the platform gains traction and evolves, there are several potential areas for future development and enhancement:

**Advanced Analytics:** Incorporate more advanced analytics and machine learning models to provide predictive insights, such as athlete performance predictions or event outcome probabilities.

**Real-Time Data:** Explore the integration of real-time Olympic data, providing up-to-the-minute updates on ongoing events during the Games.

**Multi-language Support:** Expand the platform to offer content and data in multiple languages to cater to a more diverse global audience.

**Social Integration:** Integrate social media platforms to allow users to share their findings and insights, fostering a sense of community and engagement.

**Gamification:** Add gamification elements to make data exploration more interactive and fun, encouraging users to compete or collaborate in exploring Olympic data.

**Customizable Dashboards:** Allow users to create their customizable dashboards and stories, tailoring the platform to their specific interests and preferences.

**Integration with External APIs:** Connect with other APIs to provide data from related fields, such as sports news, weather conditions, or travel information for Olympic host cities.

**Accessibility Features:** Enhance the platform's accessibility for users with disabilities, ensuring inclusivity.

**Monetization Strategies:** Explore options for monetization, such as offering premium features, exclusive content, or advertising partnerships with sports-related brands.

**Data Licensing:** Consider licensing the platform's data and visualizations to educational institutions, sports organizations, or researchers for further analysis and research.

**Custom Data Feeds:** Allow users to upload and analyze their sports-related data or connect external data sources to the platform for personalized analysis.

**International Expansion:** Expand the platform's coverage to include other major international sporting events and competitions beyond the Olympics.

**Environmental Impact:** Consider implementing eco-friendly features or initiatives in line with sustainability and eco-conscious trends in the sporting industry.

**Integration with Smart Devices:** Explore integration with smart devices and personal assistants, allowing users to access Olympic data through voice commands or wearable technology.

As the platform continues to grow and adapt to changing user needs and technological advancements, it has the potential to become a comprehensive resource for Olympic enthusiasts, researchers, and sports fans worldwide. The future scope is vast, offering opportunities for innovation and engagement in the field of sports analytics and data visualization.

## 13. APPENDIX

GitHub Link:

<https://github.com/AbbasAli851/Data-Analytic-With-Tableau/tree/main>

Demo Video Link:

[https://drive.google.com/file/d/1Oi8eOisFhvGqLqbjSPiOIU1EDMLg\\_gOB/view?usp=drive\\_link](https://drive.google.com/file/d/1Oi8eOisFhvGqLqbjSPiOIU1EDMLg_gOB/view?usp=drive_link)