DATA DRIVEN INSIGHTS ON OLYMPIC SPORTS PARTICIPATION & PERFORMANCE

INTRODUCTION

1.1 Project Overview:

The modern Olympic Games or Olympics are leading international sporting events featuring summer and winter sports competitions in which thousands of athletes from around the world participate in a variety of competitions. The Olympic Games are considered the world's foremost sports competition with more than 200 nations participating. The Olympic Games are held every four years, with the Summer and Winter Games alternating by occurring every four years but two years apart.

The evolution of the Olympic Movement during the 20th and 21st centuries has resulted in several changes to the Olympic Games. Some of these adjustments include the creation of the Winter Olympic Games for snow and ice sports, the Paralympic Games for athletes with a disability, the Youth Olympic Games for athletes aged 14 to 18, the five Continental games (Pan American, African, Asian, European, and Pacific), and the World Games for sports that are not contested in the Olympic Games. The Deaflympics and Special Olympics are also endorsed by the IOC. The IOC has had to adapt to a variety of economic, political, and technological advancements. As a result, the Olympics has shifted away from pure amateurism, as envisioned by Coubertin, to allowing participation of professional athletes. The growing importance of mass media created the issue of corporate sponsorship and commercialisation of the Games. World wars led to the cancellation of the 1916, 1940, and 1944 Games. Large boycotts during the Cold War limited participation in the 1980 and 1984 Games. The latter, however, attracted 140 National Olympic Committees, which was a record at the time.

The total number of events in the Olympics is 339 in 33 sports. And for every event there are winners. Therefore, various data is generated. So, by using Cognos Analytics we will analyse this data and find the insights.

Today, Olympics is one of the most famous sporting events across the world, with almost all major countries taking a part in it. This analysis aids in developing a resourceful knowledge from the data, about the athletes and countries performance. For this purpose, two datasets are considered, namely,

Athlete Events and NOC. It provides us with useful visualization charts with analysis.

1.2 Purpose:

The purpose of Olympic sports data analysis is to gather, process, and derive meaningful insights from data related to the Olympic Games and the sports and athletes involved. By analysing factors such as training routines, nutrition, and competition results, athletes can make data-driven decisions to enhance their performance. These insights can help athletes, coaches, and national sports organizations identify areas of improvement in their training and performance. By analysing data on athletes' performance, training methods, and competition results, they can make informed decisions to enhance their performance.

Data-driven insights can aid in the identification of talented athletes at a young age. This can be particularly valuable for countries and organizations looking to invest in the development of athletes who have the potential to excel in Olympic sports. Data can reveal trends and patterns in sports participation and performance that may suggest the need for rule changes or modifications to the sport itself. These insights can help governing bodies adapt to evolving athlete capabilities and changing competitive landscapes.

Furthermore, these insights can enhance the fan experience. They can be used to create engaging statistics, visualizations, and narratives that help fans better understand and appreciate the performances of athletes and teams. This, in turn, can boost interest and viewership of the Olympic Games.

2 LITERATURE SURVEY

2.1 Existing System:

The existing system of Olympic sports analysis involves a combination of traditional methods and modern technologies to collect, process, and analyse data related to the Olympic Games and the athletes competing in various sports.

The Olympic Games have been a popular topic of research in the fields of sports science, economics, and sociology. Several studies have analysed Olympic data to understand patterns and trends in the medal counts, individual athlete

performance, and news coverage. In terms of medal counts, several studies have looked at the historical development of the Olympic Games and the countries that have been most successful in these competitions.

For example, one study analysed medal counts from the Summer Olympics from 1896 to 2012 and found that the United States and Soviet Union/Russia have consistently been among the top medal-winning countries, but there has been a shift in the distribution of medals over time, with China and other countries rising to become major competitors (Jones,2015). Other studies have looked at the impact of host country advantage on medal counts (Fennell, 2014) and the relationship between a country's economic development and its Olympic performance (Dunning & Rojek, 2017).

In terms of individual athlete performance, several studies have analysed the factors that affect an athlete's chances of winning a medal. For example, one study found that older athletes are more likely to win medals in endurance events, while younger athletes tend to be more successful in power and speed events (Werner, 2012). Another study found that the home advantage can be a significant predictor of individual athlete performance (Schücker, 2018)

News coverage has also been a topic of research, with one study looking at the relationship between media coverage and the performance of countries in the Olympics (Burdon, 2016). This study found that the media coverage of a country is often correlated with the performance of the country and that the countries with the best performances tend to receive more media coverage.

This research builds on the existing literature by providing a comprehensive analysis of Olympic data, including medal counts, individual athlete performance, and news coverage over the past century. We used advanced analytics methods and Exploratory Data Analysis techniques that uses different kinds of plots and charts to show any information, to analyse data, providing new insights into the Olympic Games and nations participation in it.

2.2 References:

- Kavitha S, Ranjana Rajesh Bader, “Towards a Hybrid Recommendation System on Apache Spark", 2020 IEEE India Council International Subsections Conference (INDISCON).

- Hoo Young Ahn, Hyun Jae Kim, Woong Shik You ``Performance study of Spark on YARN cluster using HI Bench", 2018 IEEE International Conference on Consumer Electronics-Asia (ICCE-Asia).
- Jia Yu 1, Mohamed Sarwat, "Geospatial Data Management in Apache Spark: A Tutorial", 2019 IEEE 35th International Conference on Data Engineering (ICDE).
- Muhammad Junaid, Shiraz Ali Jaganmata Muhammad Faseeh Qureshi, Choon Sung Nam, Dong Real Shin, “Big data Predictive Analytics for Apache Spark using Machine Learning", 2020 Global Conference on Wireless and Optical Technologies (GCWOT).
- https://iopscience.iop.org/article/10.1088/1757-899X/1099/1/012058/pdf
- https://www.ibm.com/docs/en/cognos-analytics/11.1.0?topic=metadata-cleaning-data
- https://www.ibm.com/docs/en/cognos-analytics/11.1.0?topic=modules-modeling-metadata

2.3 Problem Statement Definition:

The Olympic Games are a prestigious international sporting event that occurs every four years, showcasing the world's finest athletes and their achievements in various disciplines. Analysing Olympic data can provide valuable insights into athlete performance, historical trends, and the impact of different factors on the outcomes of the games. This project aims to conduct a comprehensive analysis of Olympic data to extract meaningful information and answer key questions related to the event. The problem at hand involves the need to harness data-driven insights to optimize Olympic sports participation and enhance athletic performance. This entails the collection, analysis, and interpretation of vast and diverse datasets to obtain useful insights.

Achieving a higher level of performance for Olympic athletes is a primary goal. This involves identifying the factors and training methods that contribute to improved performance, thereby helping athletes and coaches make informed decisions regarding training regimens, techniques, and strategies. The ability to identify and nurture young talents with Olympic potential is critical. A systematic approach to analysing junior competition data and other relevant information must be established to recognize athletes with the highest likelihood of success in Olympic sports. Reducing the risk of injuries and ensuring the

overall well-being of athletes are paramount. Data-driven insights should be leveraged to identify injury trends, factors contributing to injuries, and methods for preventing injuries.

Maintaining the integrity of Olympic sports by preventing doping is a significant concern. Data analysis should be utilized to detect abnormal patterns in athletes' performance metrics, biological profiles, and other relevant data, prompting further scrutiny and necessary anti-doping measures. Strategic allocation of resources for training, facilities, and sports development programs is essential. Data should inform these allocation decisions and guide policymakers in their strategic planning related to Olympic sports.

Enhancing the engagement of Olympic sports fans and identifying marketable athletes and events are key objectives. Data-driven insights should lead to improved fan experiences through engaging statistics, visualizations, and narratives. Understanding the historical trends and evolution of Olympic sports is a valuable endeavour. Data analysis should support researchers and historians in tracing the growth and transformation of sports participation and performance over time.

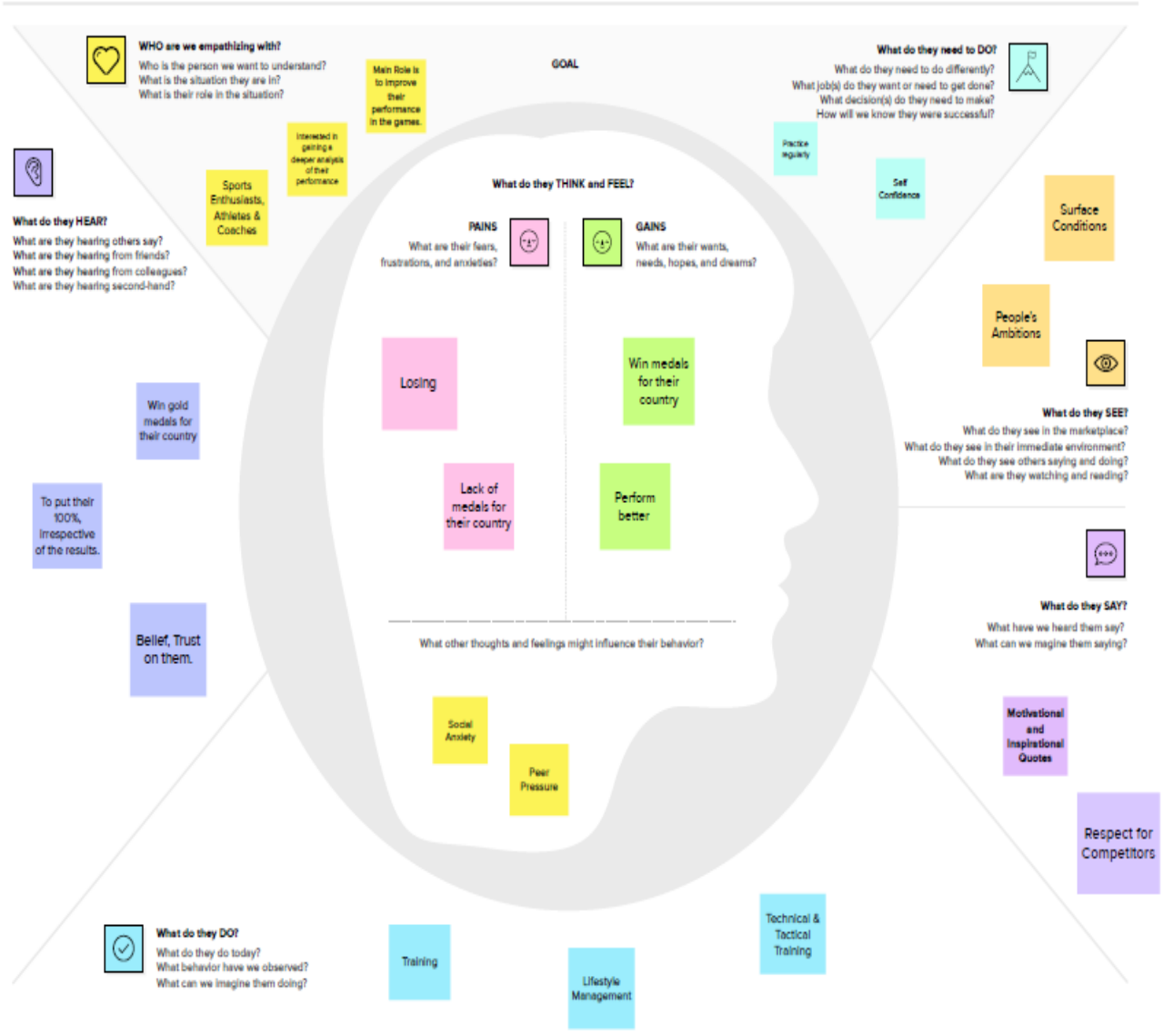
To address these objectives effectively, the problem statement necessitates the integration of advanced data analytics, machine learning techniques, and domain expertise within the realm of Olympic sports. Moreover, it should consider the ethical aspects of data collection, privacy, and data security to protect the rights and interests of athletes and stakeholders involved in the Olympic sports ecosystem.

The ability to identify and nurture young talents with Olympic potential is critical. A systematic approach to analysing junior competition data and other relevant information must be established to recognize athletes with the highest likelihood of success in Olympic sports.

Data preprocessing is the process of cleaning, transforming, and organizing data in a format that can be used by machine learning algorithms. This may include tasks such as removing missing or duplicate data, handling outliers, normalizing or scaling data, encoding categorical variables, and splitting the data into training and test sets. It is a crucial step in the machine learning process, as the quality and structure of the data can greatly impact the performance of the model.

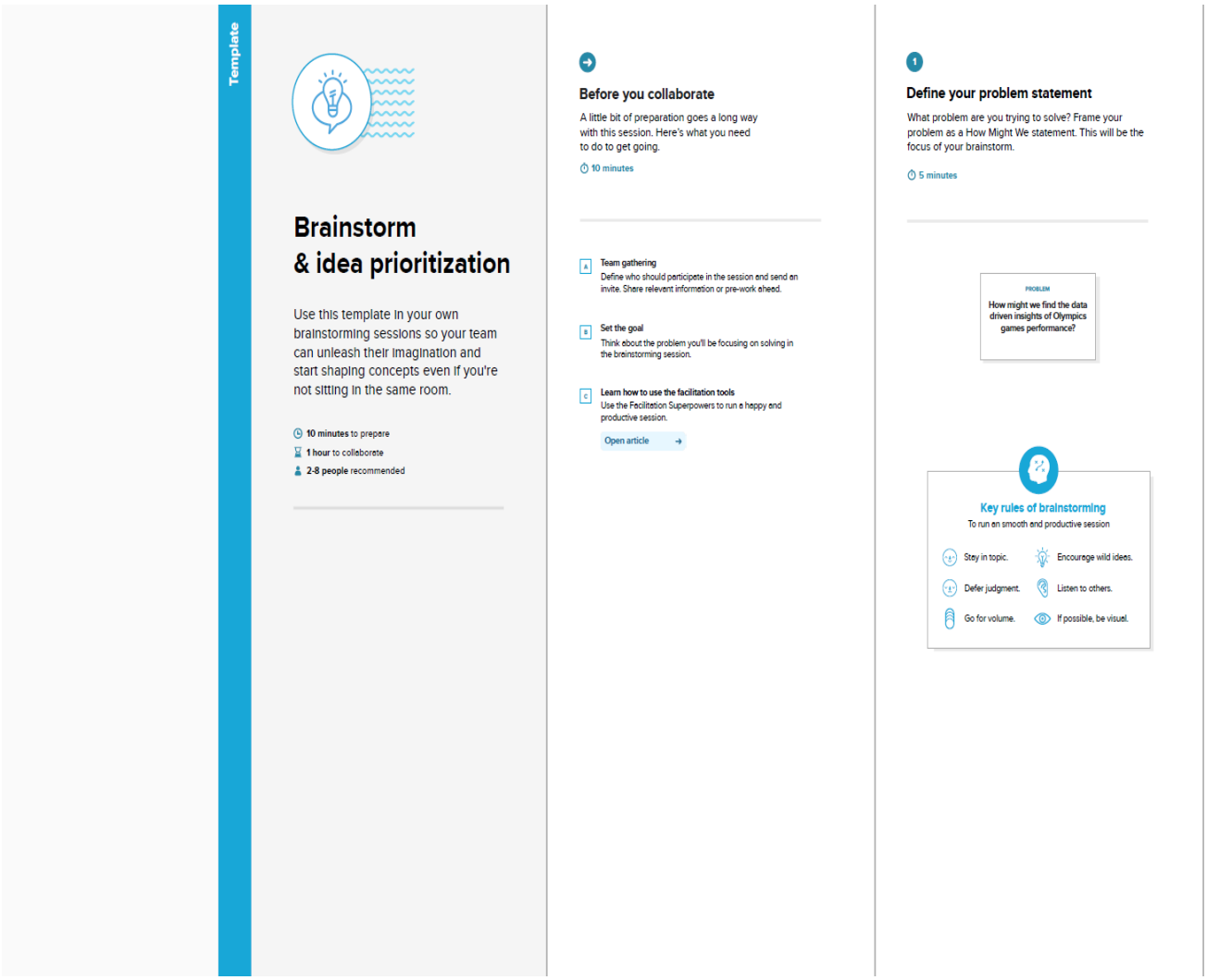
3 IDEATION AND PROPOSED SOLUTION

3.1 Empathy Map Canvas:

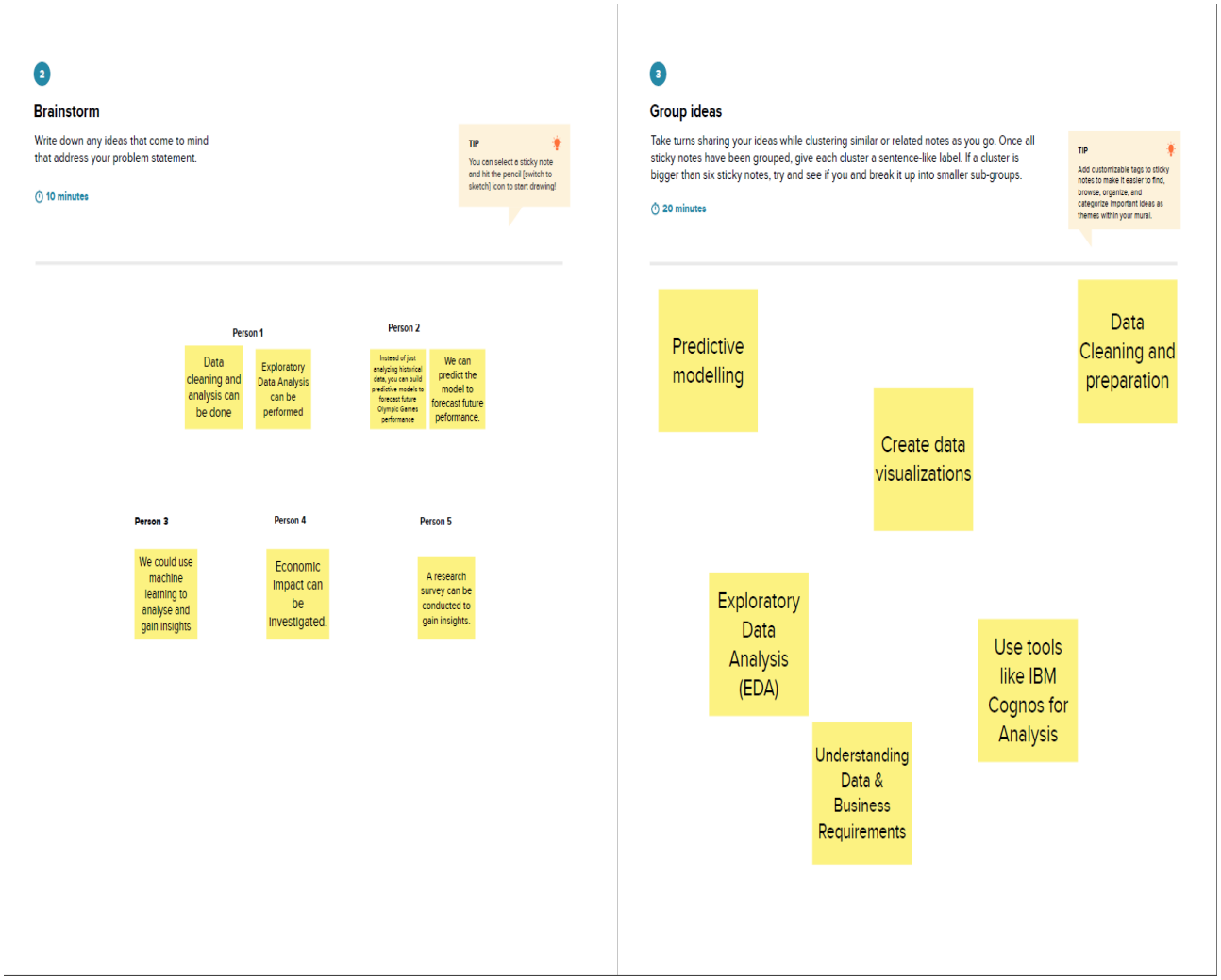


3.2 Ideation & Brainstorming:

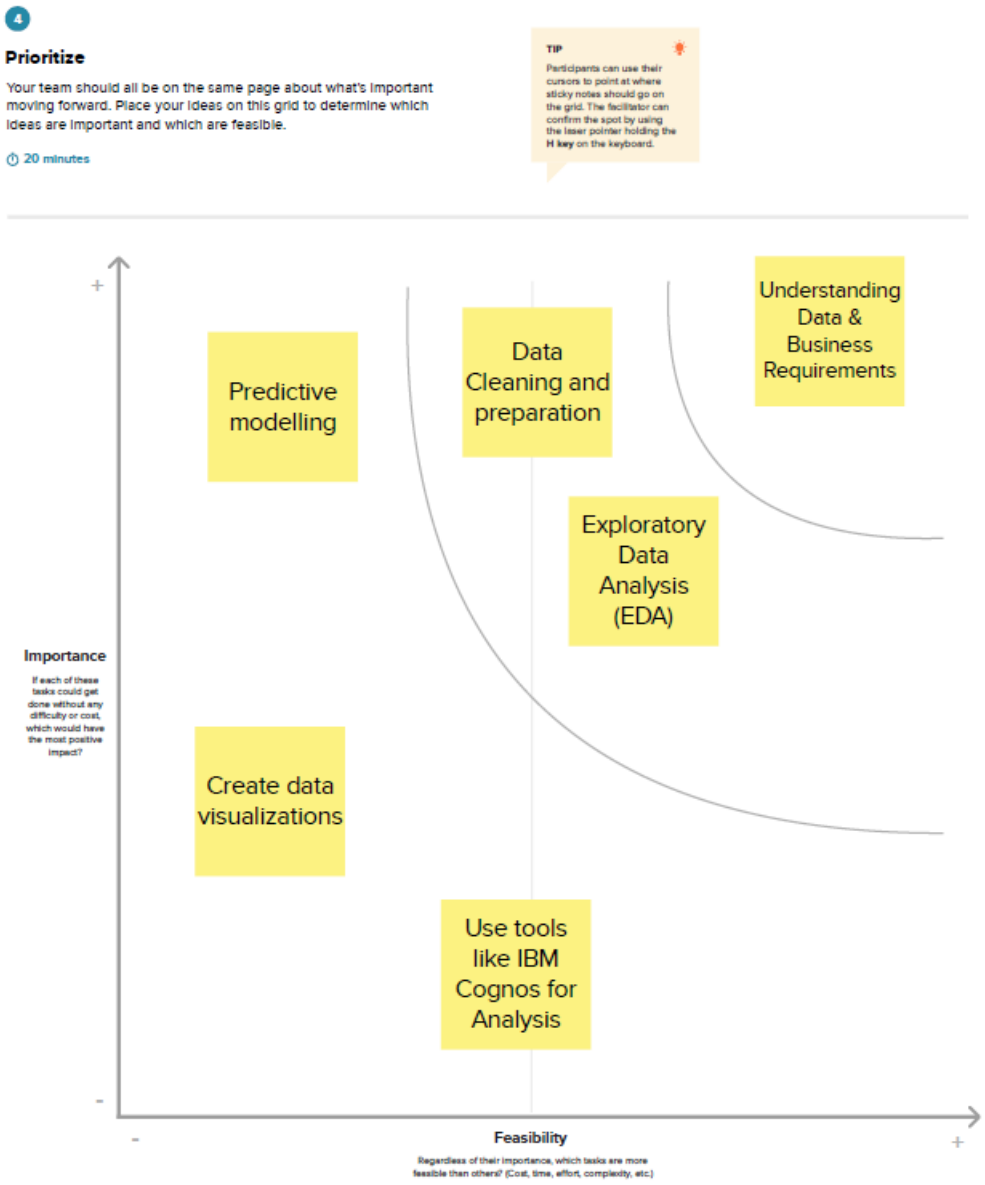
Step 1 : Team Gathering, Collaboration and Select the Problem Statement.



Step 2: Brainstorming, Idea Listing and Grouping



Step 3 : Idea Prioritization



4 REQUIREMENT ANALYSIS

4.1 Functional Requirements:

Data Collection:

- Import and gather comprehensive Olympic data from reliable sources, including historical and recent data.

- Ensure data integrity and quality through data cleaning and validation processes.

Data Storage:

- Design a robust database or data storage system to efficiently manage and store Olympic data.
- Implement data security measures to protect sensitive information.

Data Exploration:

- Develop the ability to perform basic data exploration, such as data summarization, statistical descriptions, and data profiling.
- Allow users to search for specific athletes, sports, or countries.

Data Visualization:

- Create interactive and informative data visualizations, such as graphs, charts, and maps.
- Allow users to customize and filter visualizations to gain insights from different angles.

4.2 Non-Functional Requirements:

- **Performance:** The system should be highly responsive and capable of handling a large volume of data and user requests without significant delays. Queries and data processing should be optimized for quick results.
- **Scalability:** The system should be scalable to accommodate increasing data volumes over time, especially during the Olympic Games. It should handle additional data sources and users without a significant drop in performance.
- **Reliability:** The system should be highly reliable, with minimal downtime. Data integrity and accuracy must be maintained, and the system should have backup and recovery mechanisms in place.
- **Security:** Data security is paramount. The system should implement robust security measures to protect athlete and user data, including encryption, access control, and compliance with data protection regulations.

5 PROJECT DESIGN

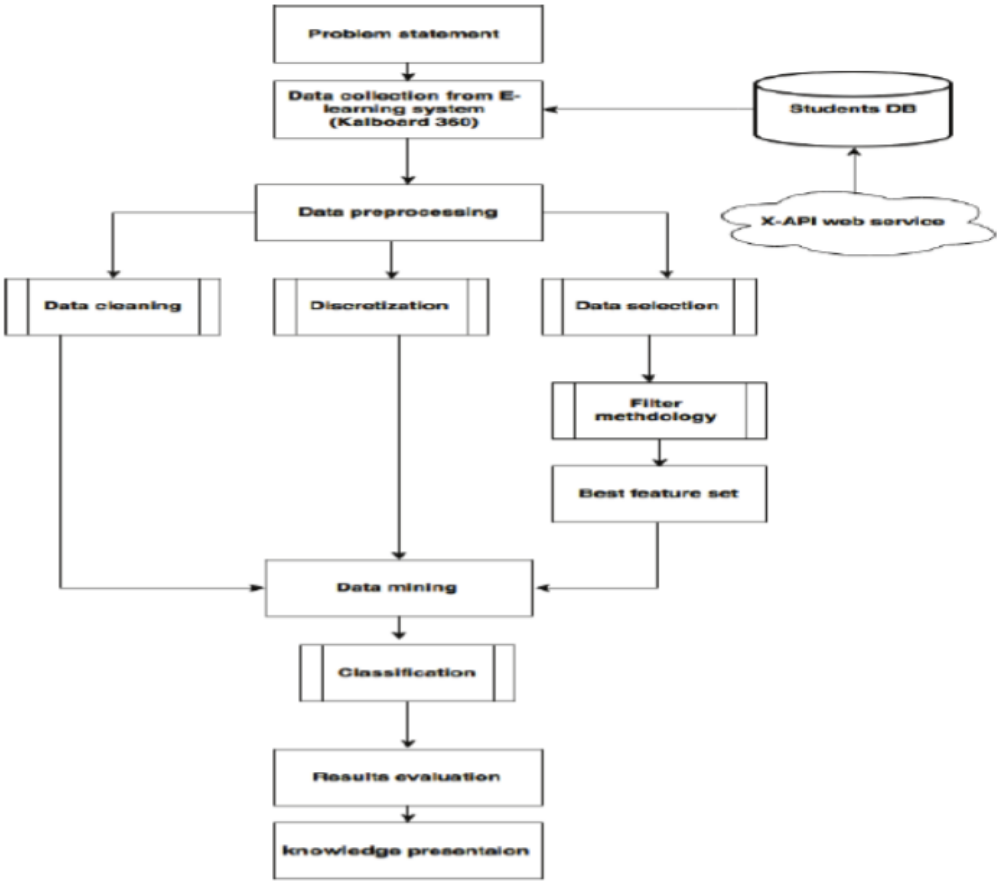
5.1 DATA FLOW DIAGRAMS & USER STORIES:

5.2 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Athlete	Login	USN - 1	As an athlete, I have to analyse my performance	Access to dashboard	High	1.0
Athlete's Coach / Trainer	Login	USN - 2	I want to view my athlete's performance so as to appropriately train them.	Access to dashboard	High	1.0

Sports Journalist	Registration	USN - 3	I want to access performance stats for news coverage.	Register and access account	Medium	1.1
Sports Enthusiast	Registration	USN - 4	I want to receive notifications about my role model's stats over the years.	Register and access account	Low	1.1

5.3 Solution Architecture:



6 PROJECT PLANNING & SCHEDULING

6.1 Technical Architecture

6.2 Sprint Planning & Execution

Sprint	Functional Requirement (Epic)	User Story No.	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Infrastructure Setup	USN - 1	As a user, I want to set up the server environment.	6	High	Hrishikesh R Sanjay S Sakthivel V
Sprint-1	Infrastructure Setup	USN - 2	As a user, I want to create a basic front-end interface for user authentication.	6	High	Hrishikesh R Kannan M Ranjith Kumar S
Sprint-2	Trainer Dashboard	USN - 3	As a user, I want to log in and access the dashboard to analyze athlete's performance.	7	High	Hrishikesh R Kannan M Sanjay S
Sprint-2	Data collection	USN - 4	As a user, I want to add and edit athlete records.	8	High	Sanjay S Sakthivel V Kannan M
Sprint-3	Epic Data Analysis	USN - 5	As a user, I want to analyze athletes' performance data	5	High	Kannan M Ranjith Kumar S Hrishikesh R
Sprint-3	Athlete & Trainer Access	USN - 6	As a user, I want to access my performance reports	6	Medium	Hrishikesh R Sakthivel V Sanjay S

6.3 SPRINT DELIEVERY SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date(Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	2 weeks	01-09-2023	14-09-2023	20	09-09-2023
Sprint-2	20	3 weeks	15-09-2023	28-09-2023		
Sprint-3	20	3 weeks	29-09-2023	12-10-2023		
Sprint-4	20	2 weeks	13-10-2023	26-10-2023		

Velocity :

Sprint Duration = 2 weeks + 3 weeks + 3 weeks + 2 weeks

= 10 weeks

AV = Sprint Duration / Velocity = 20 / 10 = 2

Burndown Chart :

Step 1: Create Estimate Effort

	Week 0	Week 1	Week 2	Week 3
Effort Remaining	20	14	8	0

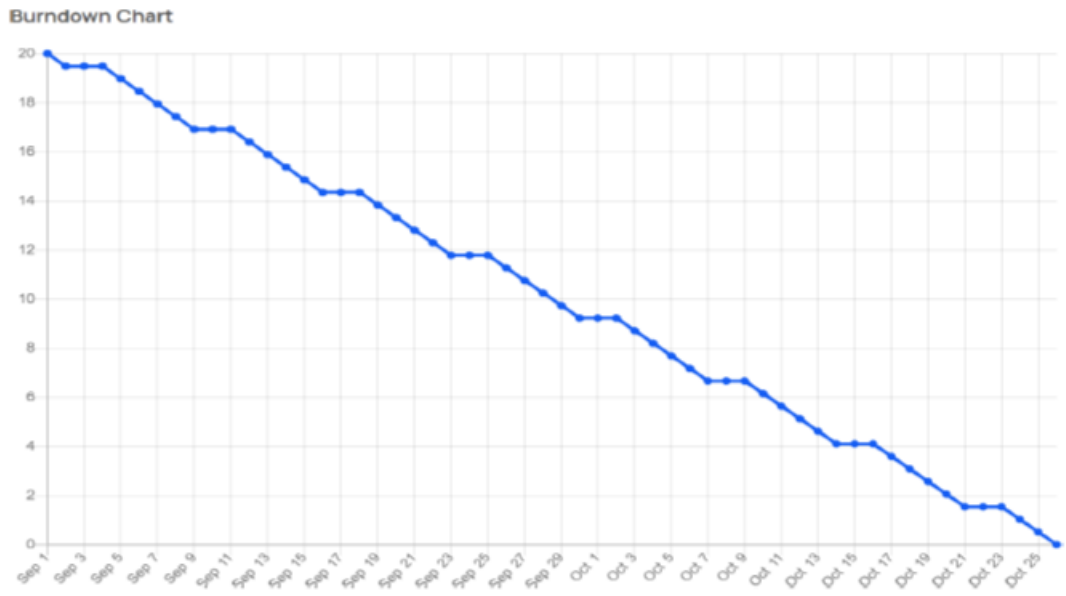
Step 2 : Track daily process

Task	Hours	Week 0	Week 1	Week 2	Week 3	Total
Task - 1	10	3	2	1	4	10
Task - 2	10	3	2	1	4	10
Task - 3	10	3	2	1	4	10
Task - 4	10	3	2	1	4	10
Task - 5	10	3	2	1	4	10

Step 3 : Compute the actual effort

		Week 0	Week 1	Week 2	Week 3
Actual Effort	20	16	10	8	0
Effort Remaining	20	14	8	5	0

Step 4 : Obtain the final dataset.



7 PERFORMANCE TESTING

7.1 Performance Metrics

Performance metrics in a data-driven analysis of Olympic sports participation can provide valuable insights into various aspects of the event. These metrics help researchers, analysts, and stakeholders evaluate the performance of athletes, countries, and sports. Here are some key performance metrics that can be used in such an analysis:

1. Medal Count: Tracking the number of gold, silver, and bronze medals won by athletes and countries. This metric provides a clear indication of success.

2. Total Medal Count: The total number of medals won, irrespective of their type (gold, silver, or bronze). This metric gives a broader view of overall success.

3. Gold Medal Percentage: The percentage of gold medals won out of the total medals. It reflects the ability of a country or athlete to secure first-place finishes.

4. Total Athlete Participation: The total number of athletes representing a country in the Olympics. This can indicate the depth of talent and the level of investment in a sport.

5. Sport Diversity: The number of different sports a country participates in. A diverse range of sports may suggest a broader approach to athletics.

6. Athlete Diversity: The number of different athletes from a country participating in the Olympics. This metric can highlight the depth of talent development.

7. Performance Per Capita: Calculating the number of medals or gold medals per capita can help level the playing field for smaller countries with fewer resources.

8. Gender Participation: Analysing the gender balance of athletes participating in a country's delegation. It can indicate gender equality in sports.

9. Age Distribution: Examining the age range of athletes, as well as the average age, can provide insights into youth development programs and the longevity of athletes.

10. Winning Streaks: Identifying countries or athletes with consecutive wins in a particular sport or discipline can highlight dominance in a specific area.

11. Record-Breaking Performances: Keeping track of world records broken during the Olympics can indicate exceptional performances and advancements in sports.

12. Team Sports Performance: Metrics related to team sports, such as win-loss ratios, goals scored, or points earned, can provide insights into a country's strength in team-based competitions.

13. Historical Performance Trends: Analysing performance data over several Olympic Games can reveal trends, including whether a country's performance is improving or declining.

14. Economic Factors: Considering economic metrics like GDP per capita can help assess whether a country's financial resources correlate with its performance.

15. Government Funding: Examining the amount of government funding allocated to sports programs can shed light on the impact of government support.

16. Coaching and Training: Metrics related to the number of certified coaches, training facilities, and development programs can indicate the strength of athlete development.

17. Doping Incidents: Monitoring the number of doping incidents and sanctions can be crucial for ensuring fair competition.

18. Social Media and Fan Engagement: Analysing the social media presence, fan engagement, and sponsorship deals can show the popularity of athletes and sports.

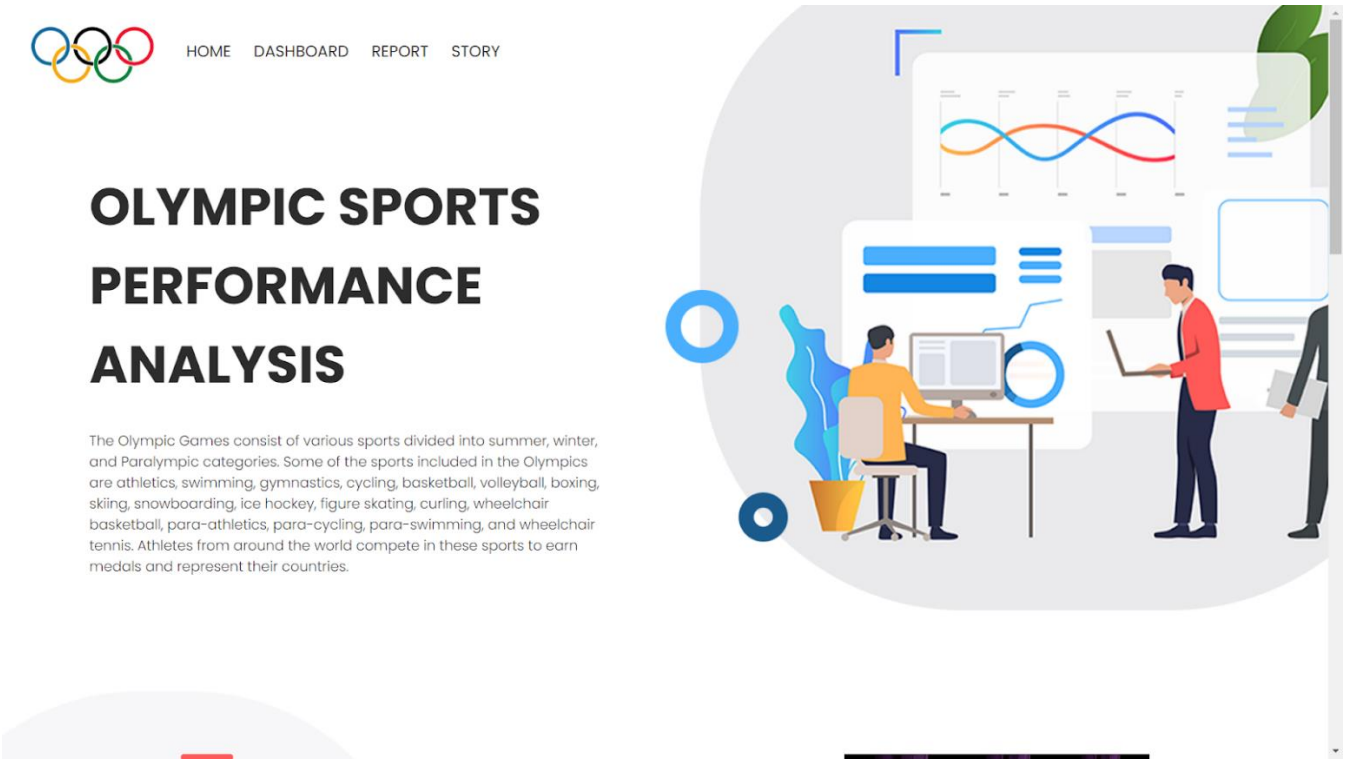
19. TV Ratings and Viewership: Evaluating the TV ratings and viewership data can indicate the popularity of Olympic events.

20. Sponsorship Revenue: Measuring the sponsorship revenue generated by athletes and sports can provide insights into the financial aspects of Olympic participation.

These performance metrics can help stakeholders, sports organizations, and researchers gain a deeper understanding of the dynamics and trends in Olympic sports participation and guide decisions related to funding, development, and athlete support.

8 RESULTS

8.1 Output Screenshots:



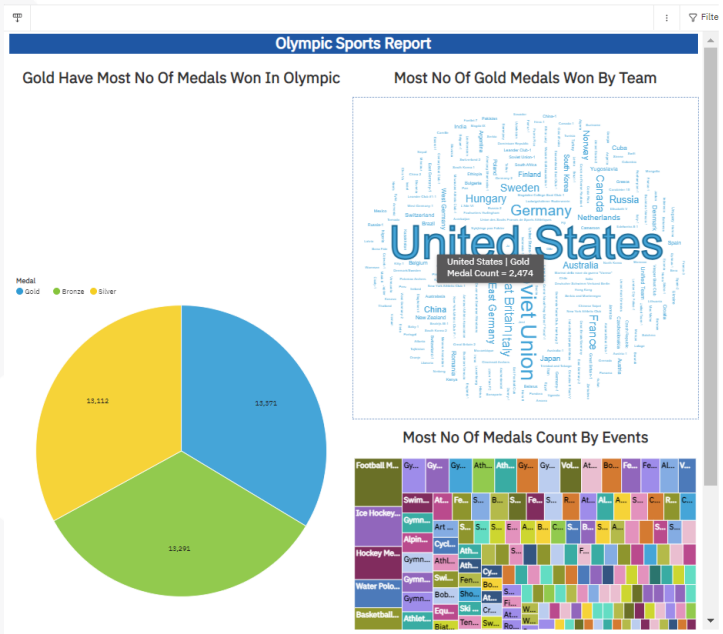
WELCOME TO OLYMPIC SPORTS ANALYSIS

The Olympic Games is a multi-sport event that takes place every four years, with both summer and winter editions. The games bring together athletes from around the world to compete in various sports and events, representing their respective countries. Summer Olympics include sports such as athletics, swimming, gymnastics, cycling, basketball, volleyball, boxing, and more, while the Winter Olympics includes sports such as skiing, snowboarding, ice hockey, figure skating, curling, and more. Additionally, the Paralympic Games is a parallel event that takes place immediately after the Olympic Games and features athletes with disabilities. Each sport has its own set of rules and regulations, with athletes competing to earn medals in individual or team events. The athletes are highly trained and skilled, and the competition is intense as they strive to achieve their personal best and represent their country with pride. The Olympics are not only a celebration of sports and athleticism but also a cultural event, with the host country showcasing its unique history, art, and culture. The event is a unifying force that brings together people from all over the world and promotes international cooperation, friendship, and understanding.

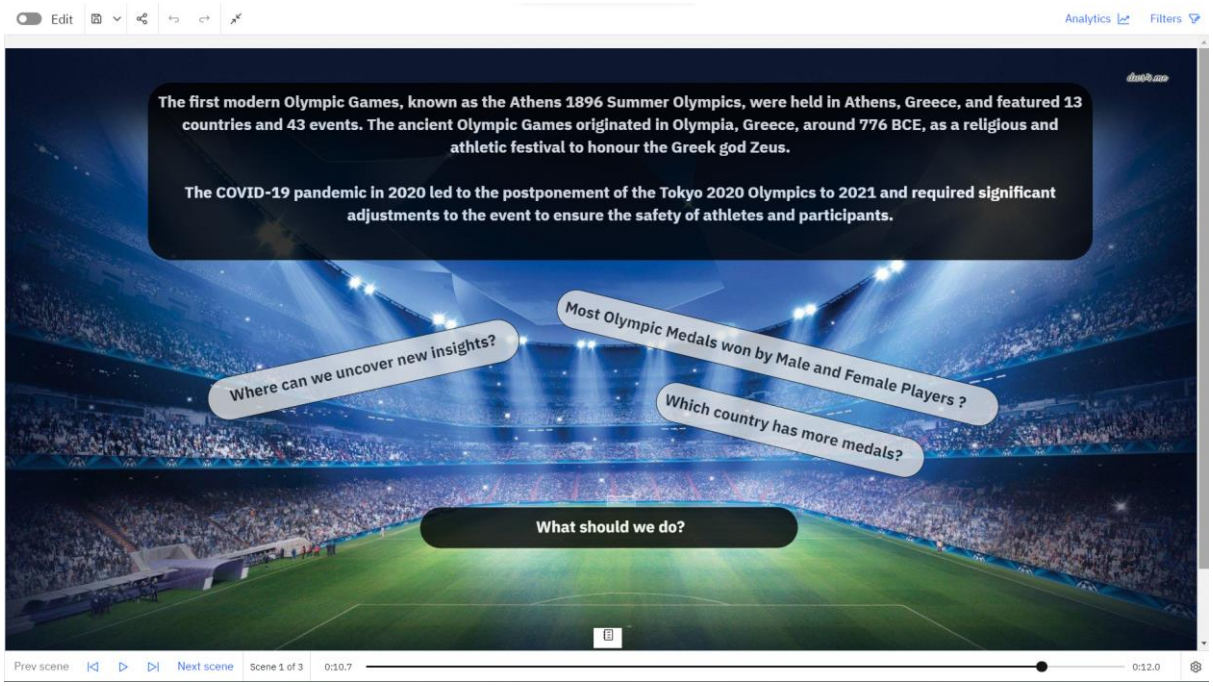
Read More

DASHBOARD

REPORT


Olympic Sports Report
Gold Have Most No Of Medals Won In Olympic
Most No Of Gold Medals Won By Team
United States
United States | Gold
Medal Count = 2,474
Medal
Gold
Bronze
Silver
13,371
13,291
13,112
Most No Of Medals Count By Events

Overview
Medals By Sports & Gender
Medals By Age, Events & Team
No. of Medals Won By Year
Medal
Bronze
Gold
Silver
Medal Count (Calculated)
Year
No. of Medals Won By Countries
Medal
Gold
Bronze
Silver
No. of Medals Won By Male and Female
F
3,767
3,732
3,747
Medal
Silver
Gold
Bronze
Most No. of Medals Won By Players
Bronze
Gold
Silver
Name


Edit
Analytics
Filters
The first modern Olympic Games, known as the Athens 1896 Summer Olympics, were held in Athens, Greece, and featured 13 countries and 43 events. The ancient Olympic Games originated in Olympia, Greece, around 776 BCE, as a religious and athletic festival to honour the Greek god Zeus.
The COVID-19 pandemic in 2020 led to the postponement of the Tokyo 2020 Olympics to 2021 and required significant adjustments to the event to ensure the safety of athletes and participants.
Where can we uncover new insights?
Most Olympic Medals won by Male and Female Players ?
Which country has more medals?
What should we do?
Prev scene
Next scene
Scene 1 of 3
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Edit
Analytics
Filters
Most Olympic Medals Won by Female and Male Athletes
Top 3 Females Won Highest No. of Medals
Vra slavsk (-Odloilov) | 11
Larysa Semenivna Latynina (Diriy-) | 18
Natalie Anne Coughlin (-Hall) | 12
Birgit Fischer-Schmidt | 12
Jennifer Elisabeth "Jenny" Thompson (-Cum...
Dara Grace Torres (-Hoffman, -Minas) | 12
Top 3 Males Won Highest No. of Medals
Michael Fred Phelps, II
Nikolay Yefimovich Andrianov
Borys Anfiyanovych Shakhlin
Edoardo Mangiarotti
Ole Einar Bjrndalen
Takashi Ono
28
15
13
13
13
13
Name
0
5
10
15
20
25
Medal Count (Calculated)
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Next scene
Scene 2 of 3
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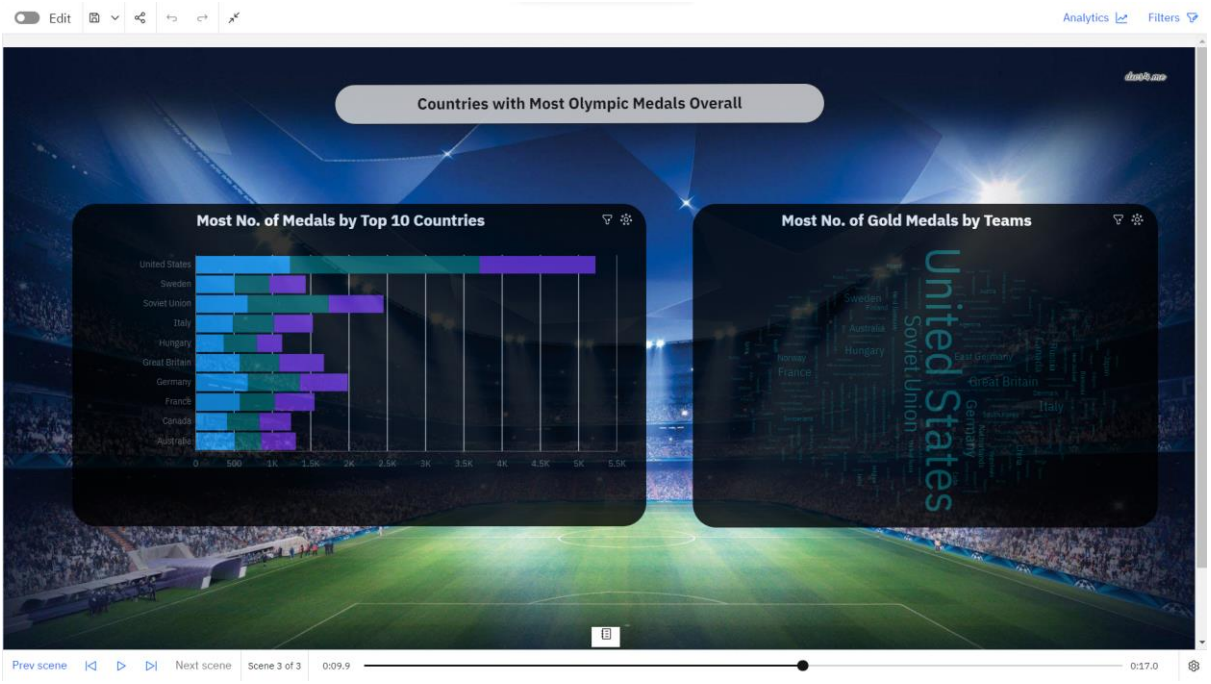
Edit
Analytics
Filters
Countries with Most Olympic Medals Overall
Most No. of Medals by Top 10 Countries
United States
Sweden
Soviet Union
Italy
Hungary
Great Britain
Germany
France
Canada
Australia
0
500
1K
1.5K
2K
2.5K
3K
3.5K
4K
4.5K
5K
5.5K
Most No. of Gold Medals by Teams
United States
Soviet Union
Germany
Great Britain
Italy
Hungary
Australia
Sweden
France
Norway
East Germany
Prev scene
Next scene
Scene 3 of 3
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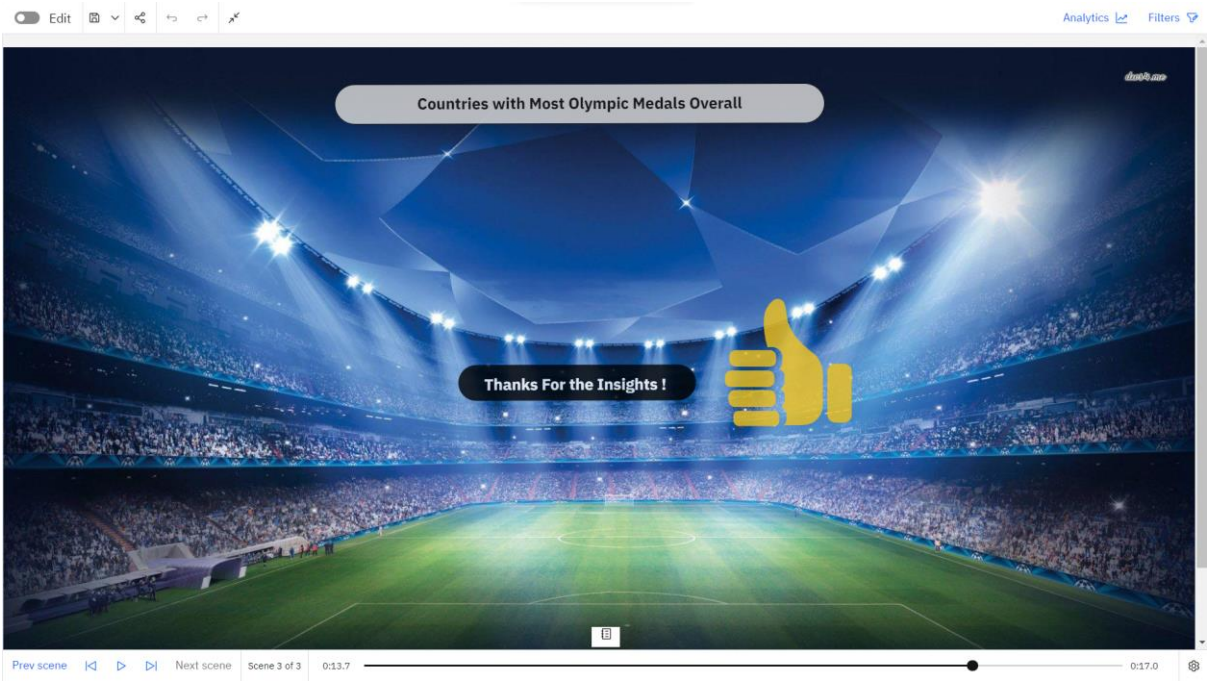
Edit
Analytics
Filters
Countries with Most Olympic Medals Overall
Thanks For the Insights !
Prev scene
Next scene
Scene 3 of 3
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9 ADVANTAGES & DISADVANTAGES

9.1 Advantages

- **Objective Decision-Making:** Data-driven insights provide an objective basis for decision-making in the world of sports. Coaches, athletes, and sports organizations can make informed choices about training methods, athlete selection, and resource allocation based on empirical evidence rather than subjective opinions.

- **Performance Optimization:** Data analytics can help identify areas where athletes can improve their performance. This includes fine-tuning training regimens, nutrition plans, and recovery strategies. By optimizing these aspects, athletes can reach their peak potential.

- **Injury Prevention:** Data-driven insights can be used to monitor an athlete's health and workload, helping to identify early signs of overtraining and reduce the risk of injuries. This proactive approach can extend an athlete's career and enhance long-term performance.

- **Talent Identification:** Analytics can assist in identifying promising talent at an early stage. By analysing performance metrics and physiological data, sports organizations can spot young athletes with the potential to excel and provide them with the necessary support and resources.

- **Strategy Development:** Coaches and teams can use data to develop winning strategies. Analysing the performance of their own team and competitors can lead to more effective game plans and tactics, helping improve their chances of success.

- **Fan Engagement:** Data-driven insights can enhance the fan experience. Advanced statistics, visualizations, and real-time updates can engage fans, making Olympic sports more exciting and accessible.

9.2 Disadvantages:

- **Privacy Concerns:** Collecting and analysing athlete data raises privacy concerns. Athletes may be uncomfortable with the extent to which their personal and performance data is collected and used, leading to ethical dilemmas.

- **Data Accuracy and Reliability:** The quality of data used for analysis is crucial. Inaccurate or unreliable data can lead to flawed conclusions and misguided decisions. Maintaining data accuracy can be challenging, especially in sports with rapidly changing conditions.

- **Cost and Resource Intensity:** Implementing data-driven strategies can be expensive. Collecting, storing, and analysing data requires investment in technology and expertise, which not all sports organizations may be able to afford.

- **Resistance to Change:** Coaches and athletes may resist the adoption of data-driven insights, especially if they have traditional methods that have been successful in the past. Convincing them of the benefits of data analysis can be a challenge.

- **Ethical and Fair Play Concerns:** There are ethical questions around how much data analysis should be allowed. Some argue that excessive data-driven decision-making could undermine the spirit of fair competition and the purity of sports.

- **Overreliance on Data:** Overreliance on data can be detrimental if it supersedes the experience, intuition, and instinct of coaches and athletes. Striking the right balance between data-driven insights and human judgment is essential.

10 CONCLUSION

In conclusion, data-driven insights play a pivotal role in shaping Olympic sports participation and performance in both advantageous and challenging ways. These insights have the potential to revolutionize the world of sports by fostering objective decision-making, optimizing performance, preventing injuries, identifying talent, developing winning strategies, and engaging fans. However, they also raise concerns about privacy, data accuracy, cost, resistance to change, ethical considerations, and the risk of overreliance. The successful integration of data-driven approaches in Olympic sports requires a delicate balance that respects the value of human experience and judgment while harnessing the power of data to drive improvements.

11 FUTURE SCOPE

The future scope of data-driven insights in Olympic sports participation and performance is promising and will likely continue to evolve in several ways:

1. **Advanced Analytics and Technology Integration:** As technology continues to advance, we can expect even more sophisticated data collection methods, wearable devices, and real-time analytics. These technologies will provide coaches and athletes with more granular, immediate, and accurate data to drive performance improvements.

2. **Predictive Analytics:** Predictive analytics will play a larger role in forecasting athlete performance, injuries, and even medal outcomes. By leveraging historical data, machine learning, and artificial intelligence, sports

organizations can make informed decisions about which athletes to invest in and when to peak their performance.

3. **Personalized Training Plans:** Athletes' training programs will become increasingly personalized. Data-driven insights will help coaches tailor workouts, nutrition plans, and recovery strategies to an individual athlete's specific needs and goals.

4. **Injury Prevention and Management:** Data analytics will continue to enhance injury prevention and management. Athlete health data, biomechanics, and workload analysis will allow for early identification of injury risks, enabling timely intervention and rehabilitation.

5. **Fan Engagement and Entertainment:** Fan engagement will see innovative developments, such as augmented reality (AR), virtual reality (VR), and immersive data-driven experiences. Fans will have access to real-time statistics, interactive experiences, and personalized content, making Olympic sports more engaging.

6. **Ethical Considerations:** As the use of data in sports grows, ethical considerations will remain in focus. There will likely be continued debate and regulations around issues like data privacy, the use of performance-enhancing technologies, and fair competition.

7. **Performance Enhancement Strategies:** Data-driven insights will drive new and innovative performance enhancement strategies. For example, the analysis of an athlete's biomechanics, genomics, and even mental state may lead to novel ways of improving performance.

8. **Global Talent Identification:** Data analytics will help sports organizations identify talent on a global scale. With the right data, talent scouts can discover promising athletes from regions that may have been overlooked in the past.

9. **Multi-Sport Data Integration:** There may be increased integration of data across various Olympic sports. Cross-discipline insights could lead to novel training methods and a better understanding of overall athlete development.

10. **Regulatory Changes:** As the role of data in sports expands, regulatory bodies may need to adapt to ensure fair competition and ethical standards. This may include the establishment of guidelines and rules for data usage in sports.

In summary, the future of data-driven insights in Olympic sports is poised for significant growth and innovation. As technology, analytics, and our understanding of human performance continue to advance, we can expect to see substantial improvements in athlete training, performance, and fan engagement. However, managing the ethical, privacy, and regulatory aspects will also be critical as these developments unfold.

12 APPENDIX

12.1 Source Code

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

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

  <title>Welcome</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|Raleway:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300
,300i,400,400i,500,500i,600,600i,700,700i" rel="stylesheet">

  <!-- Vendor CSS Files -->
  <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/remixicon/remixicon.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">

  <!-- =======================================================
  * Template Name: Vesperr
  * Updated: Sep 18 2023 with Bootstrap v5.3.2
  * Template URL: https://bootstrapmade.com/vesperr-free-bootstrap-template/
  * Author: BootstrapMade.com
  * License: https://bootstrapmade.com/license/
  ======================================================== -->
</head>

<body>

  <!-- ======= Header ======= -->
  <header id="header" class="fixed-top d-flex align-items-center">
    <div class="container d-flex align-items-center justify-content-between">

      <div class="logo">
        <h1><a href="index.html">Olympics Performance Analysis</a></h1>
        <!-- Uncomment below if you prefer to use an image logo -->
        <!-- <a href="index.html"><img src="assets/img/logo.png" alt=""
class="img-fluid"></a>-->
      </div>

      <nav id="navbar" class="navbar">
        <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="#services">Dashboard</a></li>
          <li><a class="nav-link scrollto " href="#portfolio">Story</a></li>
          <li><a class="nav-link scrollto" href="#team">Report</a></li>
          <li><a class="nav-link scrollto" href="#contact">Contact</a></li>
```

```
          <li><a class="getstarted scrollto" href="#about">Get
Started</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">
      <div class="row">
        <div class="col-lg-6 pt-5 pt-lg-0 order-2 order-lg-1 d-flex flex-
column justify-content-center">
          <h1 data-aos="fade-up">Olympics Performance Analysis</h1>
          <h2 data-aos="fade-up" data-aos-delay="400">Olympic Performance is
the process of achievements by athletes in games.</h2>
          <div data-aos="fade-up" data-aos-delay="800">
            <a href="#about" class="btn-get-started scrollto">Get Started</a>
          </div>
        </div>
        <div class="col-lg-6 order-1 order-lg-2 hero-img" data-aos="fade-left"
data-aos-delay="200">
          <img src="assets/img/hero-img.png" class="img-fluid animated"
alt="">
        </div>
      </div>
    </div>

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

  <main id="main">

    <!-- ======= Clients Section ======= -->
    <!--<section id="clients" class="clients clients">
      <div class="container">

        <div class="row">

          <div class="col-lg-2 col-md-4 col-6">
            <img src="assets/img/clients/client-1.png" class="img-fluid"
alt="" data-aos="zoom-in">
          </div>

          <div class="col-lg-2 col-md-4 col-6">
```

```
            <img src="assets/img/clients/client-2.png" class="img-fluid"
alt="" data-aos="zoom-in" data-aos-delay="100">
          </div>

          <div class="col-lg-2 col-md-4 col-6">
            <img src="assets/img/clients/client-3.png" class="img-fluid"
alt="" data-aos="zoom-in" data-aos-delay="200">
          </div>

          <div class="col-lg-2 col-md-4 col-6">
            <img src="assets/img/clients/client-4.png" class="img-fluid"
alt="" data-aos="zoom-in" data-aos-delay="300">
          </div>

          <div class="col-lg-2 col-md-4 col-6">
            <img src="assets/img/clients/client-5.png" class="img-fluid"
alt="" data-aos="zoom-in" data-aos-delay="400">
          </div>

          <div class="col-lg-2 col-md-4 col-6">
            <img src="assets/img/clients/client-6.png" class="img-fluid"
alt="" data-aos="zoom-in" data-aos-delay="500">
          </div>

        </div>

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

    <!-- ======= About Us Section ======= -->
    <section id="about" class="about">
      <div class="container">

        <div class="section-title" data-aos="fade-up">
          <h2>About Us</h2>
        </div>

        <div class="row content">
          <div class="col-lg-6" data-aos="fade-up" data-aos-delay="150">
            <p>
              Welcome to "Data-Driven Insights On Olympic Sports Participation
And Performance!" We are passionate about understanding and analyzing the
insights of athletes in Olympics.Our mission is to provide valuable insights
and visualizations that shed light on the performance and achievements of
athletes across various demographics.
              <!--Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed
do eiusmod tempor incididunt ut labore et dolore
              magna aliqua. -->
```

```
            </p>

          </div>

        </div>

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

    <!-- ======= Counts Section ======= -->


              <!-- End Counts Section -->

    <!-- ======= Services Section ======= -->
    <section id="services" class="services">
      <div class="container">

        <div class="section-title" data-aos="fade-up">
          <h2>Dashboard</h2>

        </div>

        <div >
          <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2Fproject%2FSP%2Bdashboard&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;mode=dashboard&amp;subView=model0000018b654c4af9_00000000" width="1200"
height="800" frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
        </div>
      </div>
    </section><!-- End Services Section -->

    <!-- ======= More Services Section ======= -->


         <!-- End More Services Section -->

    <!-- ======= Features Section ======= -->

          <!-- End Features Section -->

    <!-- ======= Testimonials Section ======= -->

               <!-- End testimonial item -->
```

```
          <!-- End testimonial item -->

          <!-- End testimonial item -->

           <!-- End Testimonials Section -->

    <!-- ======= Portfolio Section ======= -->
    <section id="portfolio" class="portfolio">
      <div class="container">

        <div class="section-title" data-aos="fade-up">
          <h2>Story</h2>
        </div>

        <div >
          <iframe
src="https://us1.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2Fproject%2FSP%2BStory&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=view&amp;sceneId=model0000018b65e7a703_00000000&amp;sceneTime=0" width="1200" height="800"
frameborder="0" gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
        </div>
      </div>
    </section><!-- End Portfolio Section -->

    <!-- ======= Team Section ======= -->
    <section id="team" class="team section-bg">
      <div class="container">

        <div class="section-title" data-aos="fade-up">
          <h2>Report</h2>
        </div>

        <div >

          <iframe
src="https://us1.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2Fproject%2FSP%2Breport&amp;closeWindowOnLastView=true&amp;ui_appbar=false&amp;ui_navbar=false&amp;shareMode=embedded&amp;action=run&amp;format=HTML&amp;prompt=false"
width="1200" height="800" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
        </div>
      </div>
    </section><!-- End Team Section -->

    <!-- ======= Pricing Section ======= -->
```

```
    <!-- End Pricing Section -->

    <!-- ======= F.A.Q Section ======= -->




    <!-- ======= Contact Section ======= -->
    <section id="contact" class="contact">
      <div class="container">

        <div class="section-title" data-aos="fade-up">
          <h2>Contact Us</h2>
        </div>

        <div class="row">

          <div class="col-lg-4 col-md-6" data-aos="fade-up" data-aos-
delay="100">
            <div class="contact-about">
              <div class="social-links">
                <a href="#" class="twitter"><i class="bi bi-twitter"></i></a>
                <a href="#" class="facebook"><i class="bi bi-
facebook"></i></a>
                <a href="#" class="instagram"><i class="bi bi-
instagram"></i></a>
                <a href="#" class="linkedin"><i class="bi bi-
linkedin"></i></a>
              </div>
            </div>
          </div>

          <div class="col-lg-3 col-md-6 mt-4 mt-md-0" data-aos="fade-up" data-
aos-delay="200">
            <div class="info">
              <div>
                <i class="ri-map-pin-line"></i>
                <p>A108 Adam Street<br>New York, NY 535022</p>
              </div>

              <div>
                <i class="ri-mail-send-line"></i>
                <p>info@example.com</p>
              </div>

              <div>
                <i class="ri-phone-line"></i>
```

```
              <p>+1 5589 55488 55s</p>
            </div>

          </div>
        </div>

        <div class="col-lg-5 col-md-12" data-aos="fade-up" data-aos-
delay="300">
          <form action="forms/contact.php" method="post" role="form"
class="php-email-form">
            <div class="form-group">
              <input type="text" name="name" class="form-control" id="name"
placeholder="Your Name" required>
            </div>
            <div class="form-group">
              <input type="email" class="form-control" name="email"
id="email" placeholder="Your Email" required>
            </div>
            <div class="form-group">
              <input type="text" class="form-control" name="subject"
id="subject" placeholder="Subject" required>
            </div>
            <div class="form-group">
              <textarea class="form-control" name="message" rows="5"
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>

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

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

<!-- ======= Footer ======= -->
<footer id="footer">
  <div class="container">
    <div class="row d-flex align-items-center">
```

```
        <div class="col-lg-6 text-lg-left text-center">
          <div class="copyright">
            &copy; Copyright <strong>Vesperr</strong>. All Rights Reserved
          </div>
          <div class="credits">
            <!-- All the links in the footer should remain intact. -->
            <!-- You can delete the links only if you purchased the pro
version. -->
            <!-- Licensing information: https://bootstrapmade.com/license/ -->
            <!-- Purchase the pro version with working PHP/AJAX contact form:
https://bootstrapmade.com/vesperr-free-bootstrap-template/ -->
            Designed by <a href="https://bootstrapmade.com/">BootstrapMade</a>
          </div>
        </div>
        <div class="col-lg-6">
          <nav class="footer-links text-lg-right text-center pt-2 pt-lg-0">
            <a href="#intro" class="scrollto">Home</a>
            <a href="#about" class="scrollto">About</a>
            <a href="#">Privacy Policy</a>
            <a href="#">Terms of Use</a>
          </nav>
        </div>
      </div>
    </div>
  </footer><!-- End Footer -->

  <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/purecounter/purecounter_vanilla.js"></script>
  <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>
```

12.2 GitHub Link:

https://github.com/HrishikeshRavi/Naan-Mudhalvan---NM2023TMID03202/