

SHRI VAISHNAV INSTITUTE OF INFORMATION  
TECHNOLOGY



SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA

**Project Report On**  
**“ANALYSIS OF OLYMPIC GAMES”**

**TEAM MEMBERS:**

S.NO.	NAME	ROLL NO.
1.	HARSH GUPTA (TL)	17100BTBDAI01612
2.	MELVIN MATHEW	17100BTBDAI01621
3.	PRAKHAR KOPERGAONKAR	17100BTBDAI01627
4.	ROHAN JAIN	17100BTBDAI01634
5.	SWARIT WADHE	17100BTBDAI01648

**BRANCH : CSE (BDA)**

**SECTION : C**

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**PROJECT GUIDE:**

Ms. Saloni Gulati

# ACKNOWLEDGEMENT

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## “ANALYSIS OF OLYMPIC GAMES”

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## INTRODUCTION

The 'Modern Olympics' comprises all the Games from Athens 1986 to Rio 2016. The Olympics is more than just a quadrennial multi-sport world championship. It is a lense through which to understand global history, including shifting geopolitical power dynamics, women's empowerment, and the evolving values of society.

In this kernel, Our goal is to shed light on major patterns in Olympic history. How many athletes, sports, and nations are there? Where do most athletes come from? Who wins medals? What are the characteristic of the athletes (e.g., gender and physical size)?

The activity of the Olympic Movement is permanent and universal. It reaches its peak with the bringing together of the athletes of the world at the great sport festival, the Olympic Games. The development of the Olympic Movement and the Olympic Games is one of the great success stories of the 20th Century. The Olympic Games, particularly over the last 20 years, have experienced unparalleled growth and universal popularity. It is the largest and most successful sporting event in the world, and has become the pinnacle of most athletes' careers.

The IOC and the Sydney Organising Committee for the Olympic Games (SOCOG) generated approximately US\$3 billion during the period 1997 – 2000 from the marketing of the Sydney 2000 Olympic Games<sup>1</sup>. Olympic spectators purchased 6.7 million Olympic tickets - more than 88.6 percent of the available ticket pool. The Games attracted 20,000 members of the accredited international media to Australia - the largest press and broadcast gathering ever. The Games was watched by 3.7 billion television viewers worldwide. Nine out of every 10 individuals on the planet with access to television watched some part of the 2000 Olympic Games

## **Introduction to Business Intelligence (BI)**

Business intelligence (BI) is a technology-driven process for analyzing data and presenting actionable information to help executives, managers and other corporate [end users](#) make informed business decisions. BI encompasses a wide variety of tools, applications and methodologies that enable organizations to collect data from internal systems and external sources, prepare it for analysis, develop and run queries against that data, and create reports, [dashboards](#) and data visualizations to make the analytical results available to corporate decision-makers, as well as operational workers.

### **Importance of business intelligence**

The potential benefits of business intelligence tools include accelerating and improving decision-making, optimizing internal business processes, increasing operational efficiency, driving new revenues and gaining competitive advantage over business rivals. BI systems can also help companies identify market trends and spot business problems that need to be addressed.

BI data can include historical information stored in a [data warehouse](#), as well as new data gathered from source systems as it is generated, enabling BI tools to support both strategic and tactical decision-making processes.

Initially, BI tools were primarily used by data analysts and other IT professionals who ran analyses and produced reports with [query](#) results for business users.

Increasingly, however, business executives and workers are using BI platforms themselves, thanks partly to the development of [self-service BI](#) and data discovery tools and dashboards.

## Types of BI tools

Business intelligence combines a broad set of data analysis applications, including [ad hoc analytics](#) and querying, enterprise reporting, online analytical processing ([OLAP](#)), mobile BI, real-time BI, operational BI, [software-as-a-service](#) BI, open source BI, collaborative BI and [location intelligence](#).

BI technology also includes [data visualization](#) software for designing charts and other infographics, as well as tools for building BI dashboards and performance scorecards that display visualized data on business metrics and [key performance indicators](#) in an easy-to-grasp way. Data visualization tools have become the standard of modern BI in recent years. A couple leading vendors defined the technology early on, but more traditional BI vendors have followed in their path. Now, virtually every major BI tool incorporates features of visual data discovery.

BI programs may also incorporate forms of advanced analytics, such as [data mining](#), [predictive analytics](#), text mining, statistical analysis and [big data analytics](#). In many cases, though, advanced analytics projects are conducted and managed by separate teams of [data scientists](#), statisticians, predictive modelers and other skilled analytics professionals, while BI teams oversee more straightforward querying and analysis of business data.

Business intelligence data is typically stored in a data warehouse or in smaller [data marts](#) that hold subsets of a company's information. In addition, [Hadoop](#) systems are increasingly being used within BI architectures as repositories or landing pads for BI and analytics data, especially for [unstructured data](#), log files, sensor data and other types of big data. Before it is used in BI applications, raw data from different source systems must be integrated, consolidated and cleansed using data integration and [data quality](#) tools to ensure that users are analyzing accurate and consistent information.

## Introduction to IBM Cognos Tool

**IBM Cognos Business Intelligence** is a web-based integrated [business intelligence](#) suite by [IBM](#). It provides a toolset for [reporting](#), [analytics](#), [scorecarding](#), and monitoring of events and metrics. The software consists of several components designed to meet the different information requirements in a company. IBM Cognos has components such as IBM Cognos Framework Manager, IBM Cognos Cube Designer, IBM Cognos Transformer.

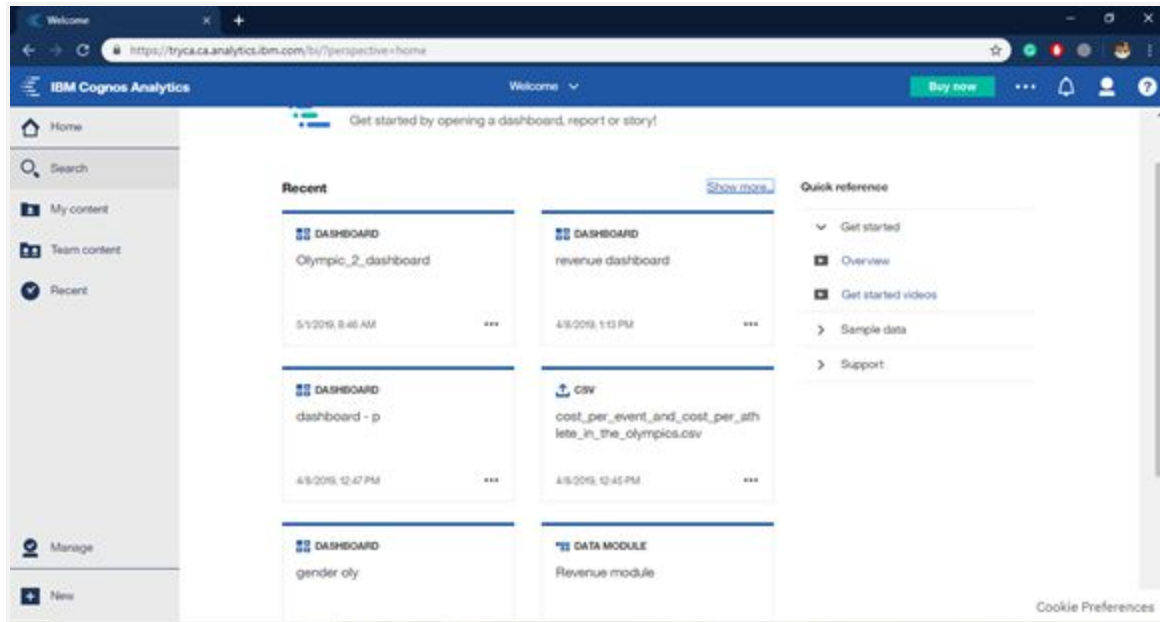
IBM's AI-infused business-intelligence solution, Cognos Analytics, helps enable you to:

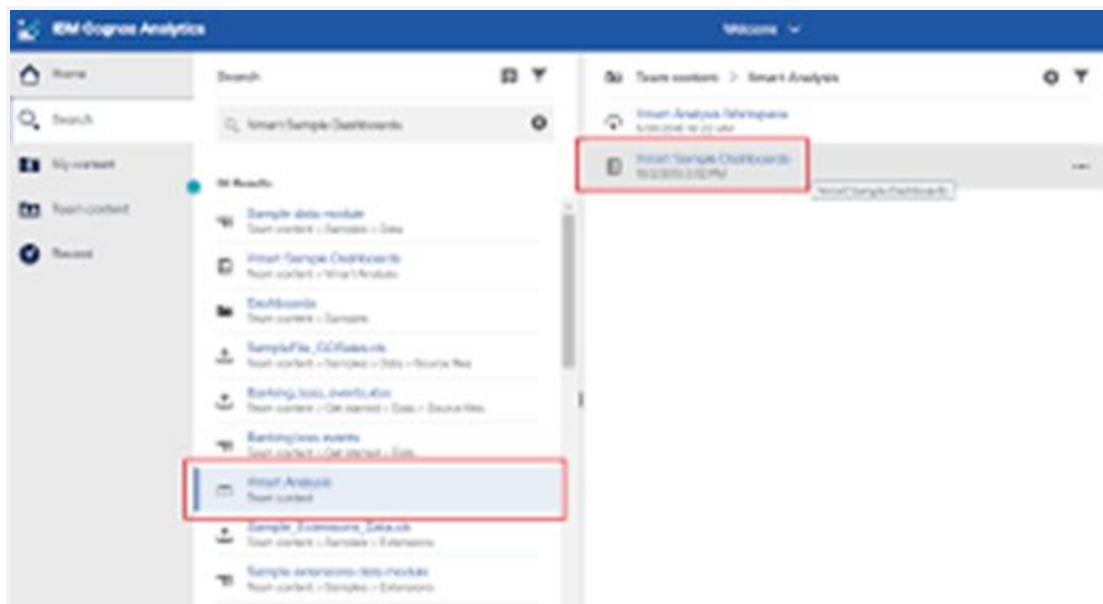
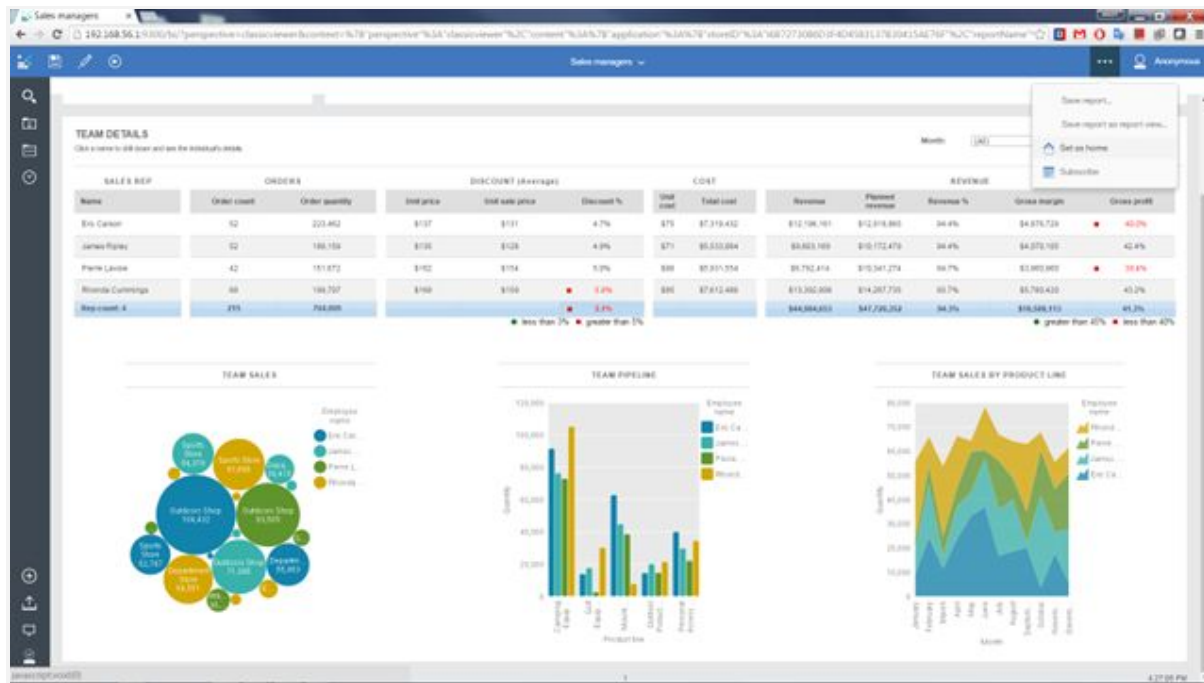
- Find answers others cannot, using AI and machine learning.
- Unearth information that may not be obvious or expected, using pattern detection.
- Create and easily share stunning, system-recommended visualizations in diverse formats.
- Pose questions about your data and receive intelligent responses, with the natural language-powered AI assistant.



Reduce the time needed for data preparation through automation and built-in intelligence.

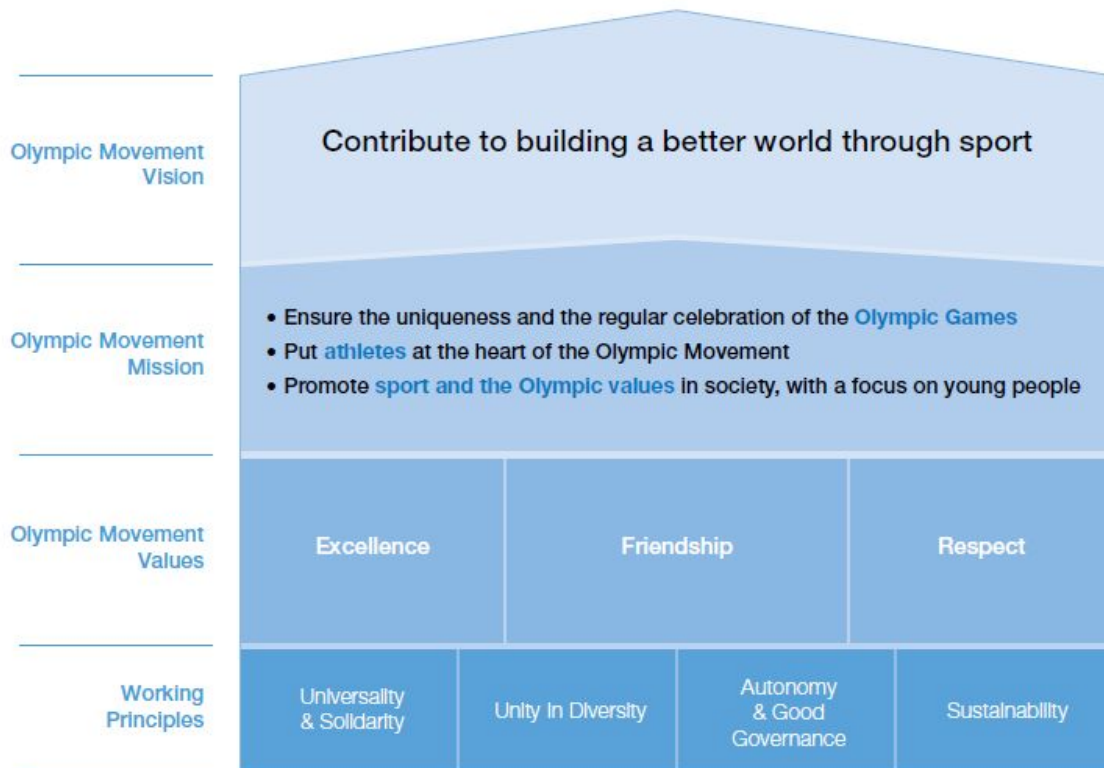
Some screenshot of the Cognos Tool :



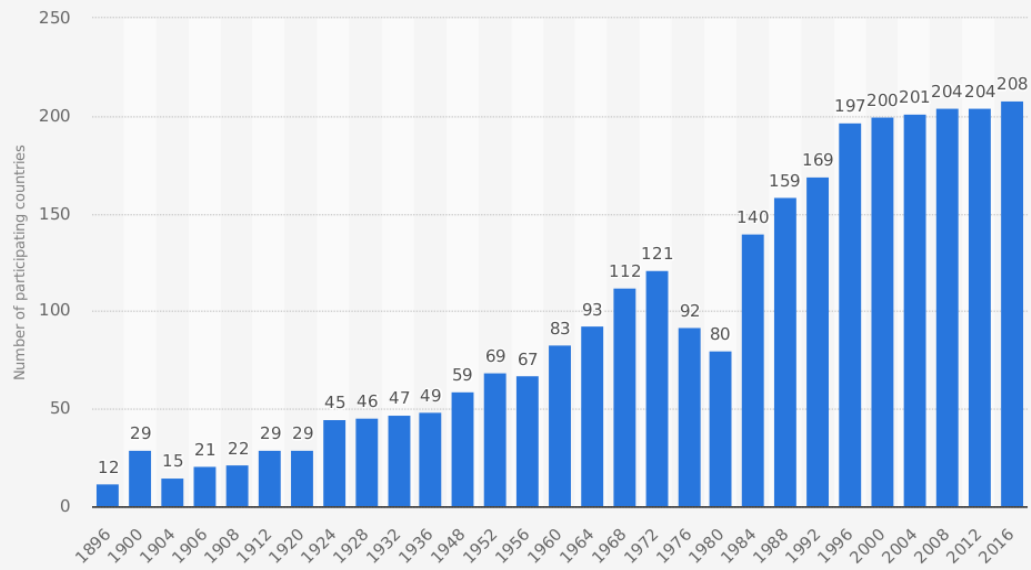


## Olympics Vision

Olympism is a philosophy of life, which places sport at the service of humankind.



## Number of participating countries in the Summer Olympics from 1896 to 2016



### Sources

Goldman Sachs; olympic.org  
© Statista 2018

### Additional Information:

Worldwide; Goldman Sachs; olympic.org; 1896 to 2016

## SCOPE

This document describes the scope of the requirements for the analysis of Athletes and their country's result in Olympic Games.

We can use this information to maintain and track records of various countries and athletes.

We can store information of all the countries record. This analysis is categorized into various sub-systems. Athletes and countries information are maintained.

These are the following data items which are used:

1. Name - Athlete's name
2. Sex - M or F
3. Age - Integer
4. Height - In centimeters
5. Weight - In kilograms
6. Team - Team name
7. NOC - National Olympic Committee 3-letter code
8. Games - Year and season
9. Year - Integer
10. Season - Summer or Winter
11. City - Host city
12. Sport - Sport
13. Event - Event
14. Medal - Gold, Silver, Bronze, or NA

Data is very useful for all the countries which had participated in Olympics games between 1928-2016. They can analyze their records, medal tally, positions in every Olympic games held in between that time.

This data provides an opportunity to ask questions about how the Olympics have evolved over time, including questions about the participation and performance of women, different nations, and different sports and events.

## ASSUMPTIONS

The following assumptions are made for this document:

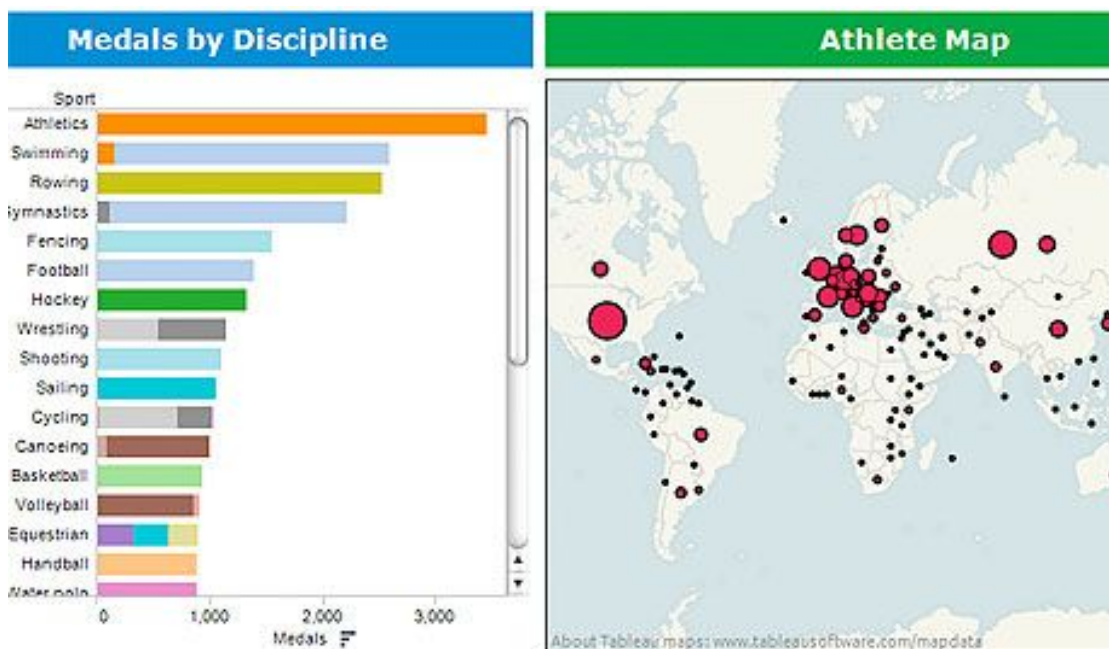
1. The data provided about the athletes is absolutely correct and is collected from an authorised source/sources.
2. The data is transported over a secure network and can be accessed only by an authorised person only.
3. Here static source of data is used i.e. first dataset is designed (collected and arranged) and then analysis is performed. We can go through dynamic approach too by updating the dataset whenever our target athlete participate in Olympics and then if wins any medal.
4. About 100 athletes data who have participated in olympics is taken into account.
5. Athletes who represents a country is only taken. Those athletes which participate as an independent individual are not considered.
6. About 50-55 sporting events are included.
7. Athletes who have participated in olympics since 1896 to 2016 are considered.

## OVERVIEW

### What are Olympics?

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.

Their creation was inspired by the ancient Olympic Games, which were held in Olympia, Greece, from the 8th century BC to the 4th century AD. Baron Pierre de Coubertin founded the International Olympic Committee (IOC) in 1894, leading to the first modern Games in Athens in 1896. The IOC is the governing body of the Olympic Movement, with the Olympic Charter defining its structure and authority.



(This is a Graphical representation of no. of medals awarded per event and Athletes representing respective nations)








## Olympians and their Personal Records.

When we talk about Olympics, It is important to mention the great players who make this event such a global phenomenon and a high quality event.

Hence This is a list of Top 5 best performing athletes of The Olympics -

### ATHLETES

NOC	MEDALISTS	SPORTS	MEDALS
USA	 Michael PHELPS	Swimming	G (23) S (3) B (2)
URS	 Larisa LATYNINA	Gymnastics Artistic	G (9) S (5) B (4)
USA	 MUHAMMAD ALI	Boxing	G (1) S (0) B (0)
GER	 Birgit FISCHER	Canoe Sprint	G (8) S (4) B (0)
JAM	 Usain BOLT	Athletics	G (8) S (0) B (0)

## Olympic Games details and Schedule:

Olympics are not just once a 4 year event which many people generally assume rather they can be categorised in 3 parts which are -

- **Summer Olympics** - These are the main Olympic games as almost all the playing nations participate in it and also counts for the most events.  
The Upcoming Summer Olympics will be hosted by Tokyo in Year 2020, while Paris will host the 2024 events and LA will host the 2028 events respectively.
- **Winter Olympics** - These are Olympics special for winter, snow supported games and are generally played in areas with heapful of snow. First Played in 1924 at Chamonix, France, Winter Olympics are going to be hosted by Beijing in 2022.
- **Youth Olympics** - Youth Olympics are the most recent edition introduced in 2010 and played in singapore are Multi Sport events and Athletes between

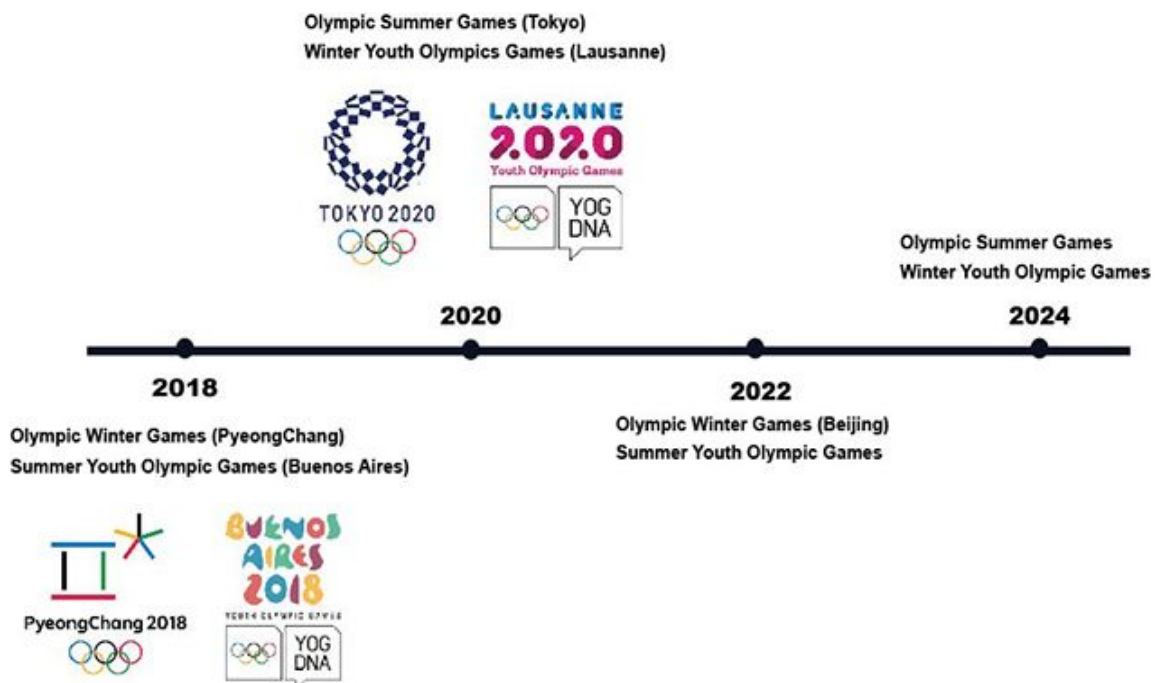
the ages 14-18 are eligible to play.

The Sixth Edition of Youth Olympics will held in 2020 and will be hosted by LAUSSEN.

All the above events are governed by the IOC (International Olympics Committee), who decides on the hosts, events to be played, eligibility of athletes and other major decisions.

While there's one more type of Olympics which are called paralympics but instead of IOC these are governed by IPC (International Paralympics Committee) which organises all the events.

- **Paralympic Games** - These Games involve athletes with a range of disabilities, including impaired muscle power (e.g. paraplegia and quadriplegia, muscular dystrophy, post-polio syndrome, spina bifida), impaired passive range of movement, limb deficiency (e.g. amputation or dysmelia), leg length difference, short stature, hypertonia, ataxia, athetosis, vision impairment and intellectual impairment. There are Separate Winter and Summer Paralympic Games and both are played immediately after Olympic.



## Breakthrough Events at the Olympic Game :

- **Berlin 1936 :The Nazi Olympics**

Berlin was voted to host the 1936 Olympic Games in 1931. When 1933 came around, however, the Nazi Party rose to power in Germany. Proposed boycotts of the Berlin Olympics arose in many Western countries, who were appalled by Germany's racist policies and human rights violations. Still, 49 countries attended the Games in Berlin,



the most countries to attend any Olympic Games so far. The German government used the international spotlight as an opportunity to portray the country as a benign and progressive nation while also providing fuel for its **Aryan-superiority propaganda**, the latter of which the IOC specifically prohibited. The IOC also required that the German government would accept qualified Jewish athletes on their team. As a result, Helene Mayer represented Germany in women's fencing. Record-breaking American sprinter and long jumper Jesse Owens, an African American, won four gold medals. Many consider that Owens single-handedly destroyed Germany's attempt at proving **Aryan superiority**.

- **London 1948: Germany and Japan banned**

The city had limited time to prepare for the Games and ultimately used already created sport and housing facilities for the competition. Wembley Stadium was the center of the events, hosting the opening ceremony, athletics events, and more. Allegedly, German prisoners of war retained in the U.K. constructed Wembley Way, a path from the London Underground to the stadium.

- **Melbourne 1956: Two Protests**

The Suez Crisis in the Middle East came to a head when Israeli brigades invaded the Sinai Peninsula in October of 1956. Egypt, Lebanon, and Iraq boycotted the Games to protest the invasion from Israel and the support of its allies. Meanwhile, the Soviet army invaded Budapest, Hungary, a few weeks before the opening ceremony. To protest this invasion, the Netherlands, Spain, and Switzerland pulled out of the Games.

- **Mexico City 1968: Brutal Shooting and Civil Rights Protest**

They opposed the use of government funding for the Olympic



Games rather than for social programs. The Mexican army surrounded the plaza and opened fire, killing over 200 protesters and injuring more than 1,000, an atrocity which became known as the Tlatelolco massacre. They took their first- and third-placed podiums barefoot and, during the playing of the U.S. national anthem, raised a single black glove

while bowing their heads.

- **Munich 1972: Munich Massacre**

The 1972 Games were marred by the Palestinian terrorist attack against Israel's team. On September 5, 1972, eight terrorists affiliated with the Black September organization sneaked into the Olympic Village and killed two members of the Israeli team.

- **Montreal 1976: African Countries Boycott Olympics**

Some two dozen countries, mostly from Africa, boycotted the [1976 Olympic Games](#) in Montreal after the IOC refused to ban New Zealand from the Games. New Zealand's national rugby team had toured South Africa, a country that had been banned from the Olympics since 1964 because of its [apartheid](#) policies.

- **Rio de Janeiro 2016: Refugee Olympics Team**

Ten refugee athletes were selected to compete in the first ever Refugee



Olympic Team (ROT) for the Rio de Janeiro Summer Olympics. The IOC created this team to bring the refugee crisis to the international forefront. Athletes originally from Syria, South Sudan, Ethiopia, and the Democratic Republic of

the Congo were chosen for the squad, and each athlete trained in a host country.


## EXECUTIVE SUMMARY

The goal of the Olympic Movement is to contribute to building a peaceful and better world by educating youth through sport practiced without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity and fair play. The mission of the IOC is to not only ensure the celebration of the Olympic Games, but to also encourage the regular practice of sport by all people in society, regardless of sex, age, social background or economic status. This is done in many ways, year round and on all five continents. We want to increase access to sport for all and provide everyone, in particular young people, with the educational and health values of sport.

### Benefits of Olympic Games

- Inspiring children and young people.
- Boost for Business, Jobs and Skills.
- Generating and supporting tourism.
- Boosting the local economy.

## **HOSTING THE OLYMPIC GAMES: WHAT DOES THE SCIENCE SAY?**

✓ Hosting an Olympic Games leaves a legacy for the future when we plan for it - positive legacies affect the environment, humans and infrastructure 

✓ Hosting an Olympic Games leads to increased physical activity with the potential for \$100's of billions in savings



✓ Hosting an Olympic Games boosts the economy 

✓ The IOC's Olympic Agenda 2020 addresses concerns about cost overruns allowing Calgarians to maximize benefits from a \$10:\$1 investment ratio **\$10:\$1**

But the bigger question here is why the need for analyzing these already successful Olympic Games was felt?

The amount of time spent practicing is different for everyone and varies based on the sport, the athlete, and the time of year. Of course, there's an average as well. A 2008 article in Forbes says that it's common for Olympic athletes to spend “**four to eight years**” training in a sport before making an Olympic team.” So when a particular athlete dedicates so much time in training he expects to get the best outcome possible. It is therefore necessary for these athletes to be at their optimum physical and mental levels during these intense competitions.

But there are various other factors that determine the outcome of any sporting event and the performance of the athletes. Some of these factors are as follows:

- **Past Olympic success:** Medals won in the past can be seen as an indicator of a "sports culture". The United States, for example, always perform quite well. Sporting prowess is important to them so many people take part.
- **Host-country effect:** The United States hosted the 1904 Olympics and won 231 medals compared to 48 at the previous games. The phenomena occurs again and again. For instance, China hosted the 2008 Olympics and collected 100 medals compared to 63 at the previous Olympics. This is a recognized pattern. Performing in front of a home crowd combined with extra investment in sport gives the host country a medals boost.
- **Future-host effect:** Australia won 27 medals in 1992 followed by 41 medals four years later. This was probably due to increased investment in sport in the run-up to the 2000 Sydney Games. The UK, as another example, increased its medal haul from 30 to 47 between 2004 and 2008, prior to hosting the 2012 Games.

- **Wealth:** Countries with a high GDP, like Germany or the USA, can afford to invest in sports facilities and their populations have enough leisure time and money to take part in sports. This may not be the case in poorer countries.

All the data collected through this survey makes a huge dataset which will then be used by us as a data source in **IBM COGNOS ANALYTICS** tool (a tool used for Business Analytics) with the help of which we will create a dynamic project which includes reports, different charts for better visualization of result obtained and can perform comparative analysis of dataset's data for different Countries, Sports and athletes.

### **The key objectives of the project “Analysis of Olympic Games” :**

- To have a proper understanding of the participating countries and their medal tally.
- To calculate the win percentage of athletes of different countries in each and every sporting event.
- To analyse the growth of male and female athletes participating in different events.
- To understand the effect of age on athletes performance.
- To understand the effects of different factors that help an athlete to perform better apart from the physical and mental well-being.