# Detailed Project Report

# FIFA-19 ANALYSIS

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**PREPARED FOR:**

iNeuron

**PREPARED BY:**

Aniket Nikumbh

Chaitanya Vyavhare

Swaraj Patil

Darshan Mohata

Vedant Mahajan

Kishor Khade

# DOCUMENT VERSION CONTROL:

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| 18/07/2023 | 1.0 | First version of LLD completed | Aniket Nikumbh<br>Chaitanya Vyavhare<br>Swaraj Patil<br>Darshan Mohata<br>Vedant Mahajan<br>Kishor Khade |
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# Abstract:

E-commerce (electronics commerce) is the buying and selling of goods and services or transmission of funds or data over an electronic medium. These transactions are either business-to-business (B2B), business-to-consumer(B2C) or consumer-to-consumer. E-commerce dashboards are widely used by various companies to analyze their sales of different product categories and consumer patterns/demands.
The given dataset provides information about the sales of different product categories and enlightens us about the shipping modes, order priorities and most profitable regions/products. Precise analysis of such data is an intimidating task as the company is not just concerned about their sales or profit. There are numerous other factors that are of equal importance to an online e-commerce company providing utility goods to people over the internet.

# Introduction

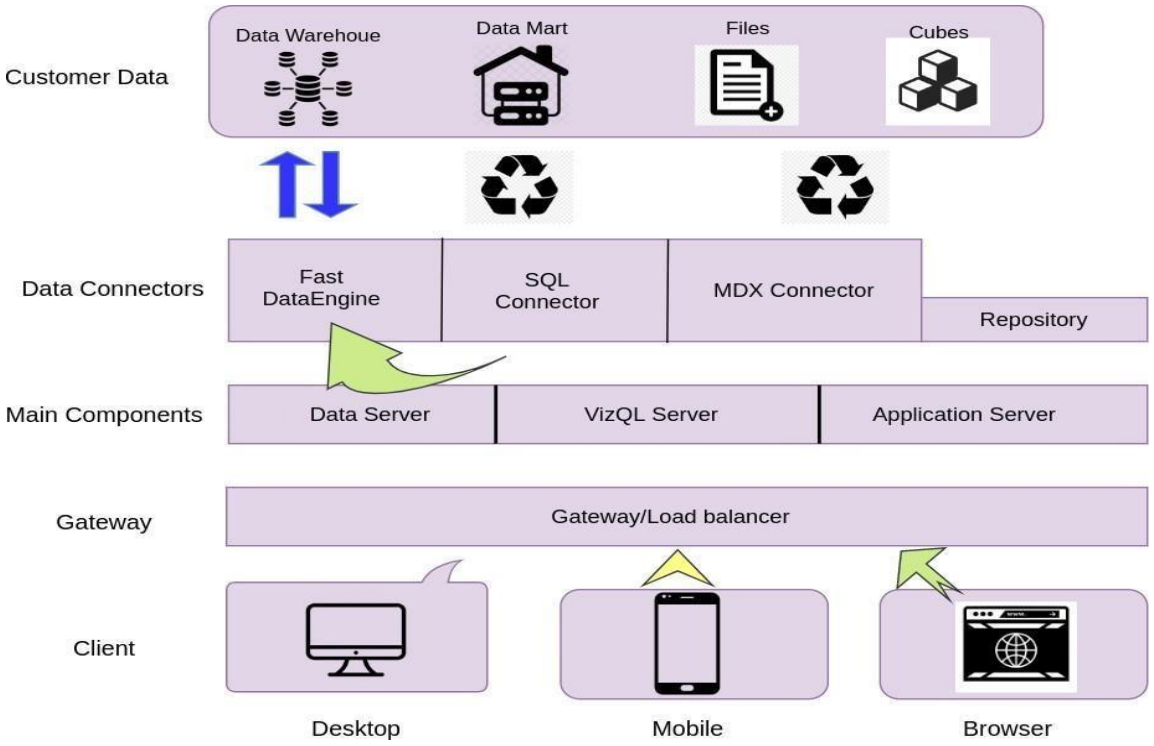
## 1.1 What is a Low-Level design document?

The purpose of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the E-Commerce dashboard. LDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

## 1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work. For business analytics low level documents encompasses the architecture and configuration of the bi tool used as well as dataset information and use cases.

# Architecture




## Tableau Server Architecture

Tableau has a highly scalable, n-tier client-server architecture that serves mobile clients, web clients and desktop-installed software. Tableau Server architecture supports fast and flexible deployments**.**

The following diagram shows Tableau Server's architecture:

**Tableau Communication Flow**

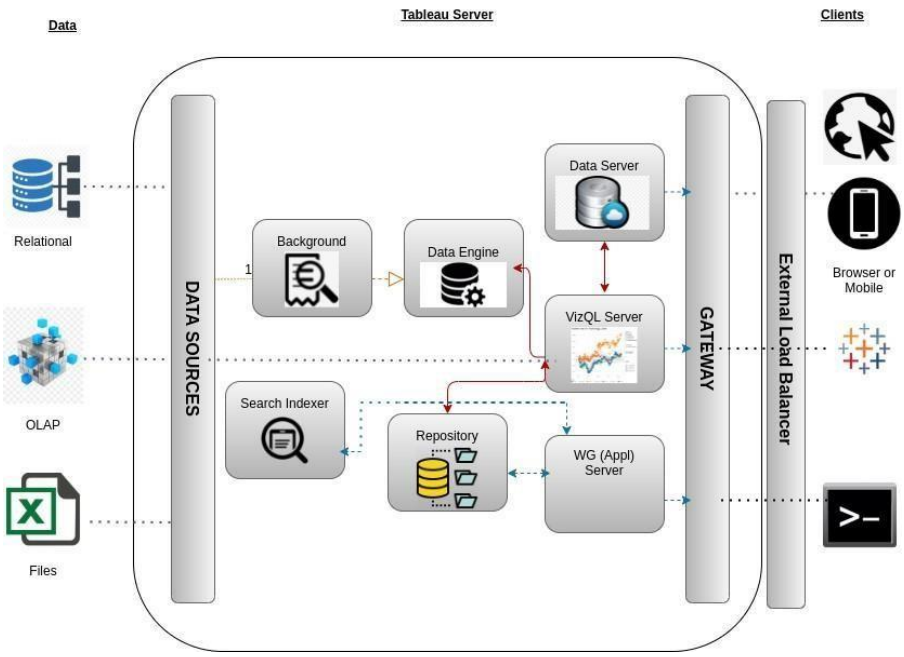



Tableau Server is internally managed by the multiple server processes.

## 1. Gateway/Load Balancer:

It acts as an Entry gate to the Tableau Server and also balances the load to the Server if multiple Processes are configured.

## 2. Application Server:

Application Server processes (wgserver.exe) handle browsing and permissions for the Tableau Server web and mobile interfaces. When a user opens a view in a client device, that user starts a session on Tableau Server. This means that an Application Server thread starts and checks the permissions for that user and that view.

## 3. Repository:

Tableau Server Repository is a PostgreSQL database that stores server data. This data includes information about Tableau Server users, groups and group assignments, permissions, projects, data sources, and extract metadata and refresh information.

## 4. VIZQL Server:

Once a view is opened, the client sends a request to the VizQL process (vizqlserver.exe). The VizQL process then sends queries directly to the data source, returning a result set that is rendered as images and presented to the user. Each VizQL Server has its own cache that can be shared across multiple users

## 5. Data Engine:

It Stores data extracts and answers queries.

### 6. Backgrounder:

The backgrounder Executes server tasks which includes refreshes scheduled extracts, tasks initiated from tabcmd and manages other background tasks.

### 7. Data Server:

Data Server Manages connections to Tableau Server data sources It also maintains metadata from Tableau Desktop, such as calculations, definitions, and groups

# 3.Architecture Description

## 3.1. Data Description

The Dataset contains data for all the players that featured in fifa-19

1. **Name**: Name of the player.
2. **Age**: Age of the player.
3. **Nationality**: Place of birth of the player.
4. **Potential** : A score between 0-100 , higher value indicating higher potential.
5. **Overall** : A score between 0-100 , higher value indicating higher overall performance of the player
6. **Club**: Name of the club for which he plays
7. **Value** : Net worth of the player in euros.
8. **Wage**: Wages of the player in euros
9. **Preferred foot**: Preferred foot of the player
10. **International Reputation**: A score between 0-5 , indicating their international reputation
11. **Weak foot** : A score between 0-5 , indicating how good they are with their weaker foot.
12. **Skill moves** : A score between 0-5 to rank different skill moves they have.
13. **Work Rate**: Work rate of the player
14. **Position**: Starting position of the player

15. **Height**: Height of player in foot
16. **Weight** : Weight of player in lbs
17. **Jersey Number** : Jersey no of the player
18. **Different measures of performance**: Crossing,Finishing , Heading accuracy , Short passing , dribbling , curve , long passing , dribbling , ball control , acceleration , sprint speed,agility , balance , reaction , interception,shot power , jumping , stamina , strength and goalkeeper stats , etc on a scale between 0-100 to measure each performance metric
19. **Release Clause** : Amount of money required to release the player in euros.

### 3.2. Web Scraping

Web scraping is a technique to automatically extract content and data from websites using bots. It is also known as web data extraction or web harvesting. Some of the python libraries used for web scraping are Beautiful Soup, Scrapy, Selenium, etc.

The dataset was provided to us as a csv file , and it was scraped from www.sofifa.com

### 3.3. Data Transformation

In the Transformation Process, we do the essential preprocessing and cleaning before importing it into tableau for data visualization.

Since there were no missing values or human entry errors our dataset is ready

### 3.4. Deployment

Visualizing data on its own is not enough. Once the dashboard is created, it needs to be made accessible such that all concerned professionals can use it to study key factors and make certain improvements or changes. IT companies have shifted their focus towards deployment of such dashboards based on various business intelligence tools and Tableau is no exception

We deploy our dashboard on **tableau public**

## PREVIEW OF THE STORY


# 4.Unit Test Cases

| TEST CASE DESCRIPTION | EXPECTED RESULTS |
|---|---|
| Nationality multiple value filter | When clicked on the filter, a drop down should occur which has a List of countries in the dataset.The dashboard filters its result using nationality as the context. |
| Nationality filter by clicking on the country on map | When a user clicks on any country on the map , the results are filtered based on that country. |
| Relation Between Age and Wage of top 10 players filtered by nationality | Scatter plot showing the correlation using custom football shape instead of default circles |
| Relation between overall performance and potential | Scatter plot showing the correlation using custom shape instead of default circles |
| Top 10 highest earning players | A bar chart showing top 10 players which can be filtered based on nationality |

| | |
|---|---|
| Fifa card for top 3 players | Customizable fifa card for top 3 players of the selected club. |
| A single value filter for top clubs in the world | When clicked a dropdown occur , which allows the user to select one club of interest and the statistics are filtered for the top 3 players of that club |
| Radar chart for top 3 players | Statistics of top 3 players of each club can be compared more easily using a radar chart |
| Statistics of individual player | Dual axis - bar charts scaled to 100 are used to compare 2 players and make quick insights about who is better. |
| Player 1 club as a context filter | A drop down occurs which allows the user to select the club of the player they want to see the stats of. |
| Player 1 filter | A drop down occurs which allows the user to select the name of the player they want to compare from the selected club. |
| Player 2 club as a context filter | A drop down occurs which allows the user to select the club of the player they want to compare with. |
| Player 2 filter | A drop down occurs which allows the user to select the name of the player they want to compare with from the selected club. |
| | |

Deployment Visualizing data on its own is not enough. Once the dashboard is created, it needs to be made accessible such that all concerned professionals can use it to study key factors and make certain improvements or changes. IT companies have shifted their focus towards deployment of such dashboards based on various business intelligence tools and Tableau is no exception. Tableau prioritizes choice in flexibility to fit, rather than dictate, your enterprise architecture. Tableau Server and Tableau Online leverage your existing technology investments and integrate into your IT infrastructure to provide a self-service, modern analytics platform for your users. With on-premises, cloud, and hosted options, there is a version of Tableau to match your requirements. Below is a comparison of the three types:

TYPES PROS CONS Tableau Server - On Premises

- Full control of hardware and software

- Infrastructure and data remain behind your firewall
- Need dedicated administrators to manage hardware and software
- Additional infrastructure needed to access off-network (mobile, external)