Low Level Design

FIFA 19

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Low Level Design (LLD)

Contents

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1. Introduction

1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Expenditure Data Analysis 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 organizationmay be defined during requirement analysis and then refined during data design work.

2. Architecture

Power BI Desktop Architecture

1. Get Power BI Desktop

With Power BI Desktop, you can build advanced queries, models, and reports that visualize data. You can also build data models, create reports, and share your work by publishing to the Power BI service. Power BI Desktop is a free download.

2. BI solution architecture in the Centre of Excellence

BI solution architecture can consist of:

- Data sources
- Data ingestion
- Big data / data preparation
- Data warehouse
- BI semantic models
- Reports

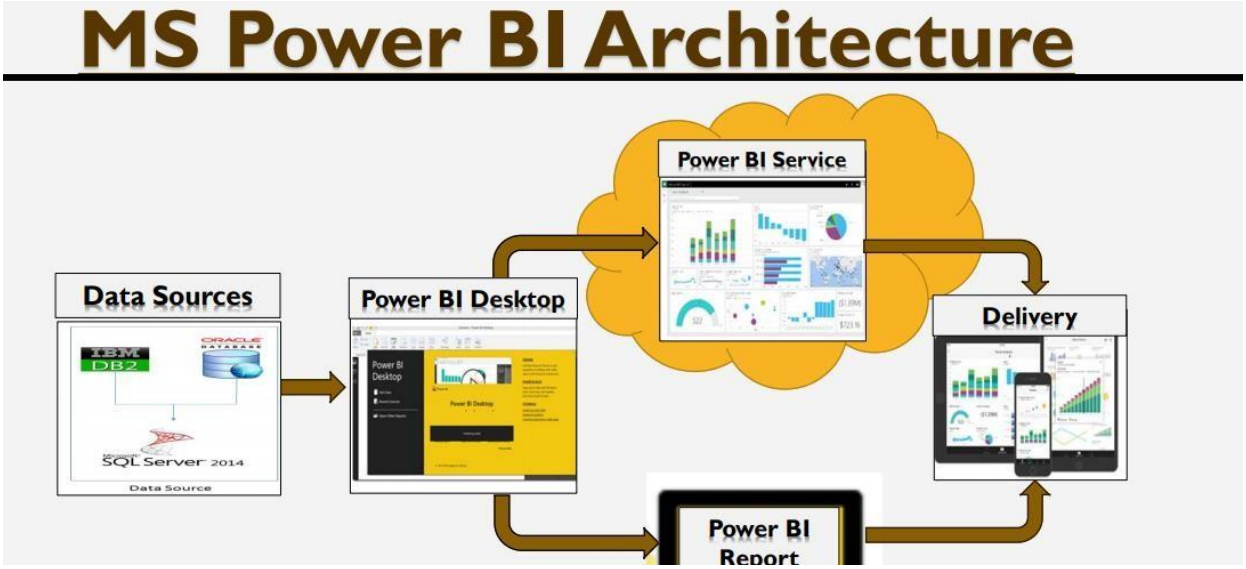

Fig: Power BI Architecture diagram

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Microsoft Power BI Desktop is a companion desktop application to Power BI.

With Power BI Desktop, you can:

1. Get data:

The Power BI Desktop makes discovering data easy. You can import data from a wide variety of data sources. After you connect to a data source, you can shape the data to match your analysis and reporting needs.

2. Create relationships and enrich your data model with new measures and data formats:

When you import two or more tables, oftentimes you'll need to create relationships between thosetables. The Power BI Desktop includes the Manage Relationships dialog and the Relationships view,where you can use Autodetect to let the Power BI Desktop find and create any relationships, or youcan create them yourself. You can also very easily create your own measures and calculations or customize data formats and categories to enrich your data for additional insights.

3. Create reports:

The Power BI Desktop includes the Report View. Select the fields you want, add filters, choose from dozens of visualizations, format your reports with custom colours, gradients and several other options. The Report View gives you the same great report and visualizations tools just likewhen creating a report on PowerBI.com.

4. Save your reports:

With the Power BI Desktop, you can save your work as a Power BI Desktop file. Power BI Desktop files have a .pbix extension.

5. Upload or publish your reports:

You can upload the reports you created and saved in the Desktop to your Power BI site. You can also publish them to Power BI right from Power BI Desktop.

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3. Architecture Description

3.1. Data Description

The Dataset contains FIFA 2019 players attributes like Age, Nationality, Overall, Potential, Club, Value, Wage, Preferred Foot, International Reputation, Weak Foot, Skill Moves, Work Rate, Position, Jersey Number, Joined, Loaned From, Contract Valid Until, Height, Weight, LS, ST, RS, LW, LF, CF, RF, RW, LAM, CAM, RAM, LM, LCM, CM, RCM, RM, LWB, LDM, CDM, RDM, RWB, LB, LCB, CB, RCB, RB, Crossing, Finishing, Heading, Accuracy, Short Passing, Volleys, Dribbling, Curve, FK Accuracy, Long Passing, Ball Control, Acceleration, Sprint Speed, Agility, Reactions, Balance, Shot Power, Jumping, Stamina, Strength, Long Shots, Aggression, Interceptions, Positioning, Vision, Penalties, Composure, Marking, Standing Tackle, Sliding Tackle, GK Diving, GK Handling, GK Kicking, GK Positioning, GK Reflexes, and Release Clause

1. **Overall Analysis Page**
    - KPI Cards: Number of Players, Avg Overall Rating, Avg Potential Rating, Avg Value, Avg Wage, Avg Release Clause
    - Donut Charts: High and Low Player Contribution by Nation (two charts)
    - Stacked Bar Chart: Top 10 Countries with Max Overall Rating
    - Line Chart: Age Distribution among Players
    - Doughnut Chart: Preferred Foot
2. **Overall Analysis 2 Page**
    - Treemap Chart: Player Count by Position
    - Stacked Bar Charts: Top 10 Countries by Valuation and Wage
    - Line Chart: Peak Performance - Age Trends and Ratings
    - Scatterplot Chart: Player Economy - Insights from Ratings, Valuation, and Wages
3. **Analysis by Player Page**
    - Slicer: Selecting Player
    - Cards: All Positions and Respective Ratings
    - Gauge Charts: 22 Attributes
    - Radar Chart: Peace, Dribbling, Shooting, Passing, Physique, Defending Attributes
    - Cards: Personal Info of Player (Overall Rating, Age, Weight, Height, Nationality, Club, Potential, Position, Preferred Foot, Wage, Value, Jersey No)
4. **Analysis by Country Page**
    - Slicer: Selecting Country
    - Line Chart: Age Distribution
    - Treemap Chart: Positions
    - Table: All Players belonging to that Nation and their Overall Rating
    - Cards: Avg Age, Number of Players, Valuation, Avg Wage
5. **Analysis by Club Page**
    - Slicer: Selecting Club
    - Line Chart: Age Distribution
    - Bar Chart: Positions
    - Table: All Players belonging to that Club and their Overall Rating
    - Cards: Avg Age, Number of Players, Valuation, Avg Wage

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6. Analysis by Striker/Forwards Page

- Bar Chart: Striker/Forward Positions
- Bar Charts: Top Players by Positions (CF, RS, LS, RF, LF, RW, LW)

7. Analysis by Midfielders Page

- Bar Chart: Midfielders Positions
- Bar Charts: Top Players by Positions (RWB, RAM, CAM, LAM, RM, CM, LM, LWB, RCM, LCM, RDM, CDM, LDM)

8. Analysis by Defenders and Goalkeepers Page

- Bar Chart: Defenders and Goalkeeper Positions
- Bar Charts: Top Players by Positions (LCB, RCB, LB, RB, CB, GK)

9-11. Formation Pages (4-2-3-1, 4-4-2, 3-5-2)

- Slicers: Different Positions
- Cards: Respective Position Ratings for Creating a Team

Each page will have its specific set of visualizations and functionalities to provide comprehensive insights into the FIFA 19 data.

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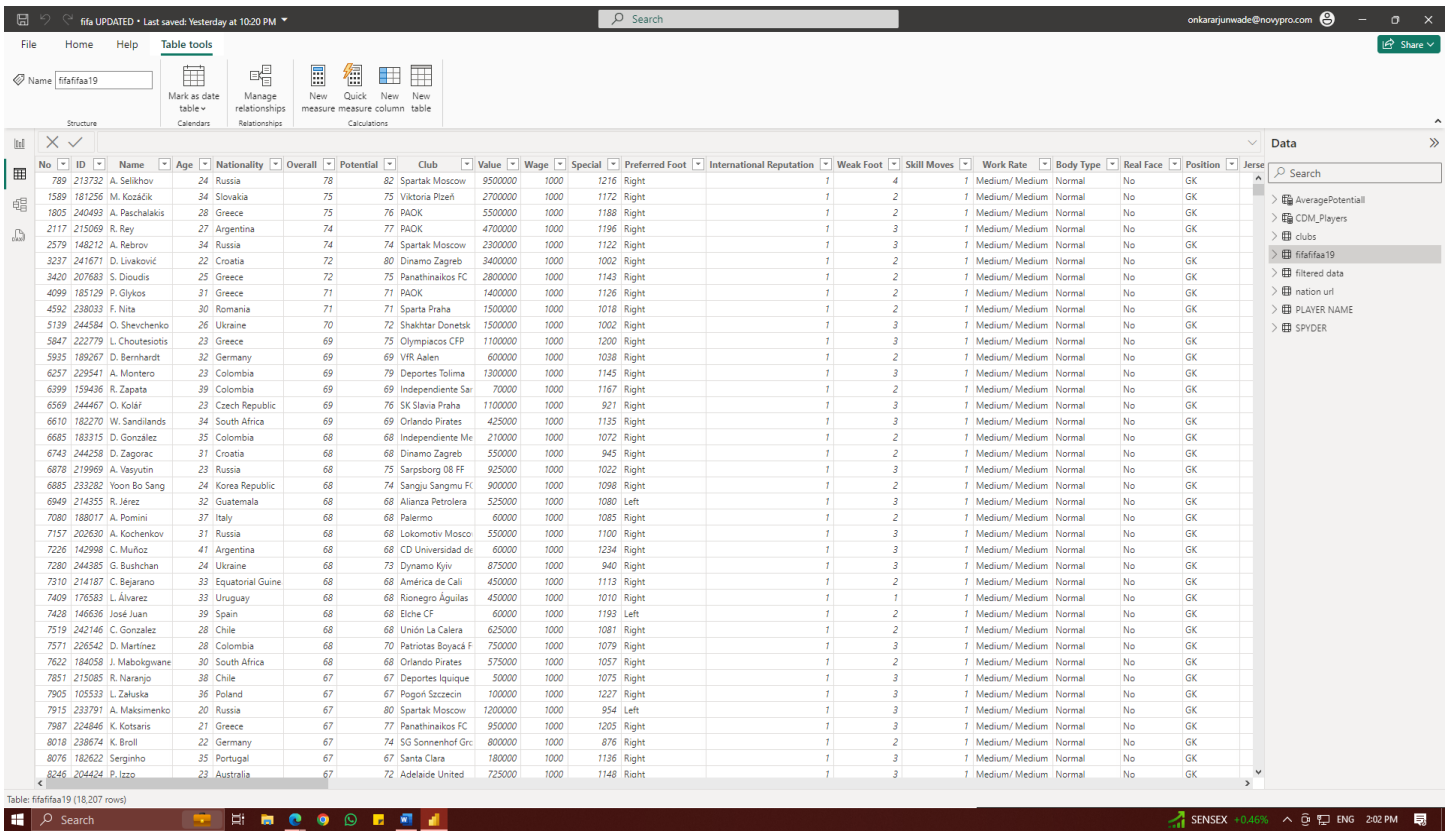
3.2. Data Transformation

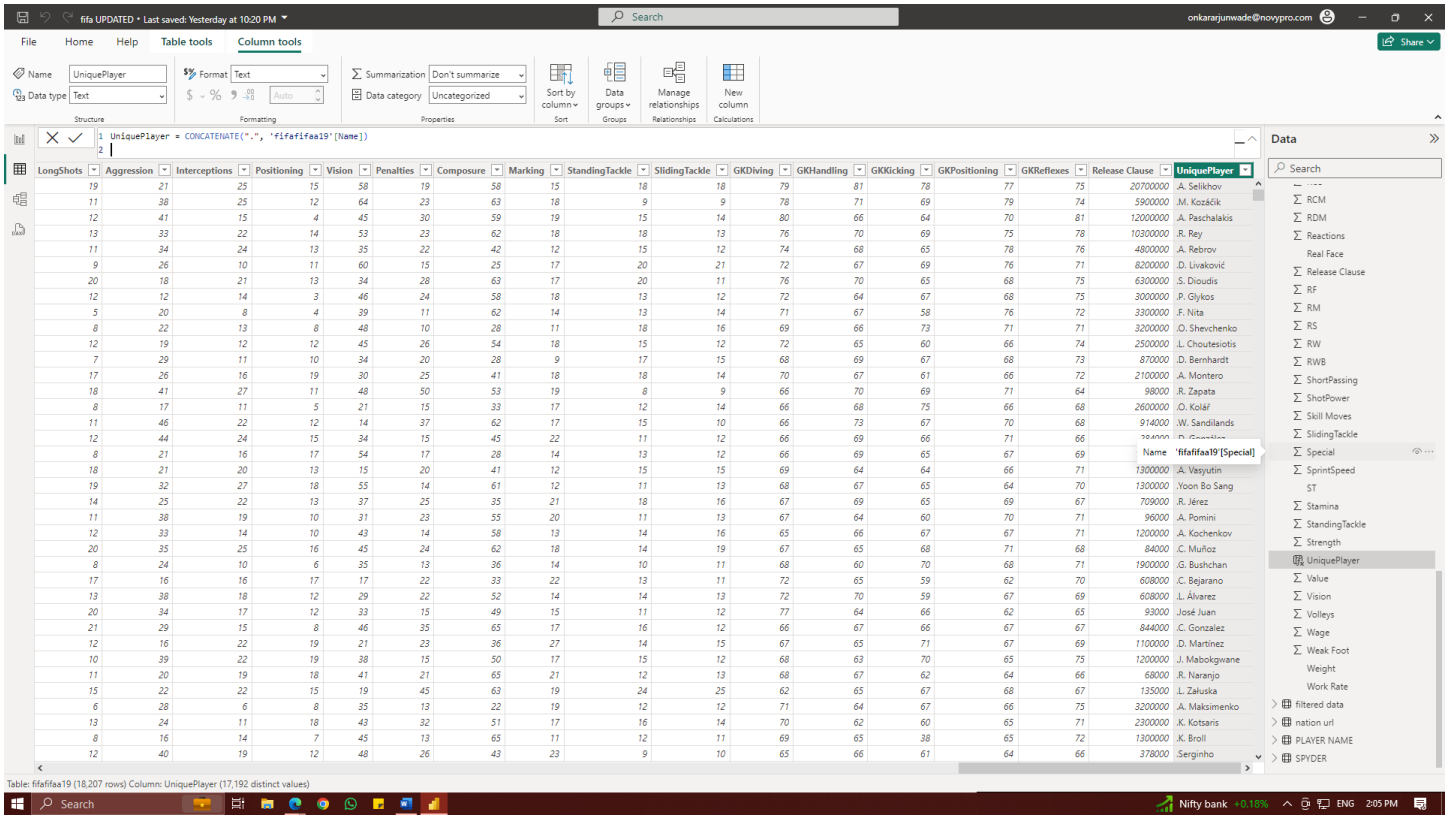
In the Transformation Process, we will convert our original datasets with other necessary attributes format. Originally datasets are in the form of wide dataset we converted into long datatype which will be useful for analysis Replacing null values with 0 and duplicate values. Conversion of monthly data into quarterly and yearly data. Filtering data according to countries

3.3. Power BI Configuration

Step 1: Configuring Data Source



Step 2: Filtering the data



3.4 Deployment

To deploy the dashboard to the Power BI service, you need a Power BI Pro or Power BI Premium account. With the appropriate account, you can publish your Power BI Desktop file (.pbix) to the Power BI service directly from Power BI Desktop. Click on the "Publish" button, sign in with your Power BI account, and select the workspace where you want to deploy the dashboard.

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