

Data Warehousing Final Project

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Phase-2

Data Loading and Transformation in BigQuery

1. BigQuery Environment Setup

Component	Value
Project ID	black-burner-456514-a2
Dataset Name	sports_dataset
Tables Created	teams_main , match
Views Created	team_match_summary_view

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black-burner-456514-a2

Welcome to BigQuery Studio!

Create new

SQL query Notebook Data canvas Data preparation Pipeline

Try with sample data

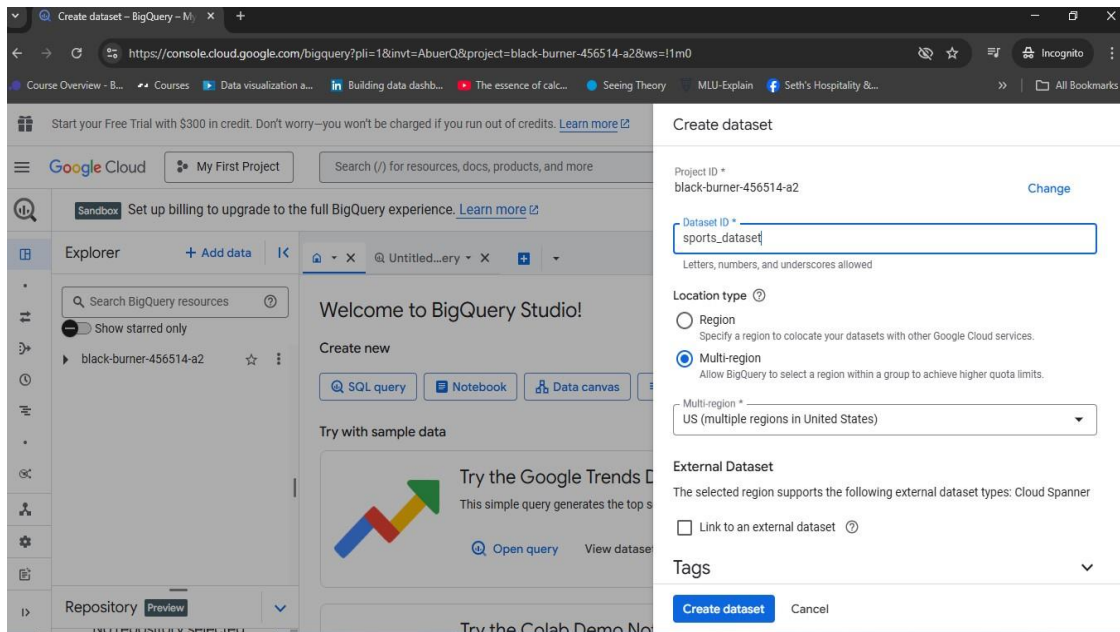
Try the Google Trends Demo Query

This simple query generates the top search terms in the US from the Google Trends public dataset.

Open query View dataset

Repository Preview

B Bikash Ghimirey bikashghimirey@loyalistcollege.com Privacy Google Account Add account Sign out



2. Tables and Schema Summary

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sports_dataset

teams_main

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Select a repository and a workspace to view its content.

View repositories

teams_main

Query Open in Share Copy Snapshot Delete Export Refresh

Schema Details Preview Table Explorer Insights Lineage Data Profile Data Quality

Row	idTeam	strTeam	strTeamShort	intFormedYear	idVenue	strStadium	strLocation
1	133622	Ipswich	IPS	1878	16258	Portman Road	Ipswich
2	134777	Newcastle	NEW	1892	16294	St James Park	Newcastle upon Tyne
3	133601	Aston Villa	AVL	1874	16122	Villa Park	Aston, Birmingham
4	133619	Brighton	BRI	1901	28853	Amex Stadium	Falmer, Brighton, East Sussex
5	134301	Bournemouth	BOU	1890	16113	Vitality Stadium	Bournemouth, England
6	133612	Manchester United	MUN	1878	18332	Old Trafford	Trafford, Greater Manchester
7	133626	Leicester	LEI	1884	16116	King Power Stadium	Filbert Way, Leicester
8	133615	Everton	EVE	1878	15532	Goodison Park	Walton, Liverpool
9	133602	Liverpool	LIV	1892	15407	Anfield	Anfield, Liverpool
10	133604	Arsenal	ARS	1892	15528	Emirates Stadium	Holloway, London, England
11	134355	Brentford	BRE	1889	18406	Brentford Community Stadium	Brentford, London, England
12	133610	Chelsea	CHE	1905	16126	Stamford Bridge	Fulham, London
13	133632	Crystal Palace	CRY	1905	16115	Selhurst Park	South Norwood, London

Results per page: 50 1 - 20 of 20

Job history Refresh

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View repositories

match Query Open in Share Copy Snapshot Delete Export Refresh

Schema Details Preview Table Explorer Preview Insights Lineage Data Profile Data Quality

Row	idTeam	strEvent	strLeague	strHomeTeam	strAwayTeam	intHomeScore	intAwayScore
1	133604	Arsenal vs Real Madrid	UEFA Champions League	Arsenal	Real Madrid	3	
2	133604	Arsenal vs Fulham	English Premier League	Arsenal	Fulham	2	
3	133604	Arsenal vs Chelsea	English Premier League	Arsenal	Chelsea	1	
4	133604	Arsenal vs PSV Eindhoven	UEFA Champions League	Arsenal	PSV Eindhoven	2	
5	133604	Arsenal vs West Ham	English Premier League	Arsenal	West Ham	0	
6	133601	Aston Villa vs Nottingham Forest	English Premier League	Aston Villa	Nottingham Forest	2	
7	133601	Aston Villa vs Club Brugge	UEFA Champions League	Aston Villa	Club Brugge	3	
8	133601	Aston Villa vs Cardiff	FA Cup	Aston Villa	Cardiff	2	
9	133601	Aston Villa vs Chelsea	English Premier League	Aston Villa	Chelsea	2	
10	133601	Aston Villa vs Liverpool	English Premier League	Aston Villa	Liverpool	2	
11	134301	Bournemouth vs Ipswich	English Premier League	Bournemouth	Ipswich	1	
12	134301	Bournemouth vs Manchester City	FA Cup	Bournemouth	Manchester City	1	
13	134301	Bournemouth vs Brentford	English Premier League	Bournemouth	Brentford	1	

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Job history Refresh

3. Data Type Conversion

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Repository Preview

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Untitled query Run Save Download Share Schedule Open in More Query completed

```

1 SELECT
2   idTeam,
3   strTeam,
4   CAST(intFormedYear AS INT64) AS formedYear,
5   CAST(intStadiumCapacity AS INT64) AS stadiumCapacity
6 FROM `black-burner-456514-a2.sports_dataset.teams_main`
7

```

Query results Save results Open in

Job information	Results	Chart	JSON	Execution details	Execution graph
Row	idTeam	strTeam	formedYear	stadiumCapacity	
1	133622	Ipswich	1878	29673	
2	134777	Newcastle	1892	52305	
3	133601	Aston Villa	1874	42785	
4	133619	Brighton	1901	30750	
5	134301	Bournemouth	1890	11464	
6	133612	Manchester United	1878	76962	

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Repository [Preview](#)

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Untitled query Run Save Download Share Schedule Open in More Query completed

```

1 SELECT
2   strTeam,
3   CAST(stadiumCostCleaned AS INT64) AS stadiumCost
4 FROM `black-burner-456514-a2.sports_dataset.teams_main`
5
6

```

Press Alt+F1 for Accessibility Options.

Query results Save results Open in

Job information Results Chart JSON Execution details Execution graph

Row	strTeam	stadiumCost
1	Ipswich	189712300
2	Newcastle	189712300
3	Aston Villa	189712300
4	Brighton	93000000
5	Bournemouth	189712300
6	Manchester United	90000

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4. Data Aggregation

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Repository [Preview](#)

No repository selected. Select a repository and a workspace to view its content.

Untitled query Run More Save Download Share Schedule Open in Query completed

```

1 SELECT
2   t.strTeam,
3   COUNT(m.strEvent) AS total_matches,
4   AVG(m.intHomeScore) AS avg_home_score,
5   AVG(m.intAwayScore) AS avg_away_score,
6   MAX(m.dateEvent) AS last_played,
7   t.intStadiumCapacity,
8   t.stadiumCostCleaned,
9   ROUND(t.stadiumCostCleaned / NULLIF(t.intStadiumCapacity, 0), 0) AS cost_per_seat
10 FROM `black-burner-456514-a2.sports_dataset.match` m
11 JOIN `black-burner-456514-a2.sports_dataset.teams_main` t
12 ON m.idTeam = t.idTeam
13 GROUP BY
14   t.strTeam, t.intStadiumCapacity, t.stadiumCostCleaned
15 ORDER BY total_matches DESC;

```

Press Alt+F1 for Accessibility Options.

Query results Save results Open in

Job information Results Chart JSON Execution details Execution graph

Row	strTeam	total_matches	avg_home_score	avg_away_score	last_played	intStadiumCapacity	stadiumCostCleaned	cost_per_s
1	Arsenal	5	1.6	0.8	2025-04-08	60338	390000000.0	

Results per page: 50 1 - 20 of 20

5. View Created for Power BI

The screenshot displays the Google Cloud BigQuery interface. A 'Save view' dialog box is open, prompting the user to save a view. The dialog includes fields for Project (black-burner-456514-a2), Dataset (sports_dataset), and Table (team_match_summary_view). A message states: 'The destination dataset for a saved view must be in the same region as the source, otherwise a "Dataset not found" error will be returned.' Below the fields, it notes: 'Maximum name size is 1,024 UTF-8 bytes. Unicode letters, marks, numbers, connectors, dashes, and spaces are allowed. The job will create the specified destination table if needed.' Buttons for 'SAVE' and 'Cancel' are at the bottom right of the dialog.

Below the dialog, the 'Results' tab is active, showing a table with the following data:

Row	strTeam	total_matches	avg_home_score	avg_away_score	last_played	intStadiumCapacity	stadiumCostCleaned	cost_per_seat
1	Arsenal	5	1.6	0.8	2025-04-08	60338	390000000.0	

The bottom section of the image shows the query editor with the following SQL query:

```
1 SELECT
2   t.strTeam,
3   COUNT(m.strEvent) AS total_matches,
4   AVG(m.intHomeScore) AS avg_home_score,
5   AVG(m.intAwayScore) AS avg_away_score,
6   MAX(m.dateEvent) AS last_played,
7   t.intStadiumCapacity,
8   t.stadiumCostCleaned,
9   ROUND(t.stadiumCostCleaned / NULLIF(t.intStadiumCapacity, 0), 0) AS cost_per_seat
10  FROM `black-burner-456514-a2.sports_dataset.match` m
11 JOIN `black-burner-456514-a2.sports_dataset.teams_main` t
12 ON m.idTeam = t.idTeam
13 GROUP BY
14   t.strTeam, t.intStadiumCapacity, t.stadiumCostCleaned
15 ORDER BY total_matches DESC;
```

The 'Query results' tab is active, showing the same table as above. The 'Save results' button is visible.

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Repository

Preview

No repository selected

Select a repository and a workspace to view its content.

team_...lewX

Untitled...eryX

RunSaveDownloadShareScheduleOpen inMoreQuery completed

1SELECT2*3FROM4black-burner-456514-a2.sports_dataset.team_match_summary_view;

Press Alt+F1 for Accessibility Options.

Query results

Save resultsOpen in

Job informationResultsChartJSONExecution detailsExecution graph

Row	strTeam	total_matches	avg_home_score	avg_away_score	last_played	intStadiumCapacity	stadiumCost(Cleaned	cost_per_s
1	Arsenal	5	1.6	0.8	2025-04-08	60338	390000000.0	
2	Aston Villa	5	2.2	0.8	2025-04-05	42785	189712300.0	
3	Bournemouth	5	0.8	1.6	2025-04-02	11464	189712300.0	
4	Brentford	5	0.2	1.2	2025-04-06	17250	71000000.0	
5	Brighton	5	1.4	1.0	2025-04-02	30750	93000000.0	
6	Chelsea	5	1.8	0.2	2025-04-03	41798	189712300.0	
7	Crystal Palace	5	2.2	1.0	2025-04-05	26255	30000.0	
8	Everton	5	1.2	1.6	2025-04-05	40157	3000.0	

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