



COMPETITIVE E-SPORT DATA WAREHOUSE

Description

source database: [LOL games : 4 years of e-sport](#)

In order to analyze professional League of Legends e-sports matches, this project uses a dimensional data warehouse in the Kimball style. The solution allows team strategists, talent scouts, and tournament organizers to make data-driven decisions by using a star schema to model intricate player-team-champion relationships. The warehouse converts flat match data into multifaceted analytics for player-champion synergy, team composition efficacy, and champion performance.

Dimensional Design Process

Select Process Business:

- Draft phase: The most pick
- Draft phase: The banned Champion
- In game: Kill and Death performance every player combat game
- In game: Assist performance every player in game

Declare Grain, Dimensions, Facts:

- Business Process: Draft phase: The most pick Champion in one match grain:

A single data represent an individual player each team pick a Champion in one team player on one match

- fct_draft_pick
- dim_match

- dim_teams
 - dim_players
 - dim_Champion
 - dim_role
- Business Process: Draft phase: The banned Champion in one match

grain:

A single data represent a team banned enemy Champion in one match

- fct_draft_pick
 - dim_match
 - dim_teams
 - dim_Champion
- Business Process: In game: Kill and Death performance every player combat game

grain:

A single data represent one kill and death done by one player in one match

- fct_kill_death_combat
 - dim_match
 - dim_teams
 - dim_players
 - dim_Champion
 - dim_role
- Business Process: In game: Assist performance every player in game

grain:

A single data represent one assist event made by a player for a kill in a match.

- fct_assist_score
- dim_match
- dim_teams
- dim_players
- dim_Champion
- dim_role

Bus Matrix

fct_table/dim_table	match	teams	players	champion	role
draft_pick	✓	✓	✓	✓	✓
draft_banned	✓	✓	✗	✓	✗
kill	✓	✓	✓	✓	✓
assist	✓	✓	✓	✓	✓

Data Warehouse schema

Dimension:

- match
 - source: LeagueofLegends.csv
 - sink: Table dim_match

LeagueofLegends.csv	dim_match	dwh
-	match_id [PK SK]	UUID
MatchHistory	Match_history [nk]	TEXT
Season	Season	VARCHAR(50)
year	year	int64
gamelength	game_length_min	int64
bResult/rResult	is_blue_team_win?	boolean

- teams
 - source: LeagueofLegends.csv
 - sink: Table dim_teams

LeagueofLegends.csv	dim_team	dwh
-	team_id [PK SK]	UUID
blue_team_tag + red_team_tag	team_tag[nk]	VARCHAR(50)

- players
 - source: LeagueofLegends.csv
 - sink: Table dim_players

LeagueofLegends.csv	dim_players	dwh
-	player_id [PK SK]	UUID
blueTop + bluJungle + blueMiddle + blueADC + blueSupport + redTop + redJungle + redMiddle + redADC + redSupport	player_username[nk]	(VARCHAR(50))

- champions
 - source: lol_champion.csv
 - sink: Table dim_champions

LOL_champions_stats.csv	dim_champion	dwh
-	champion_id[PK SK]	UUID
champion_name	champion_name	VARCHAR(50)
class	champion_class	VARCHAR(50)
playstyle	champion_playstyle	VARCHAR(150)
champion_title	champion_desc	VARCHAR(150)

- role
 - source: -

- sink: Table dim_role

dim_role	dwh
role_id	UUID
role	VARCHAR(50)

FACT:

- fct_draft_pick

source: LeagueofLegends.csv

FK:

- dim_match
- dim_teams
- dim_player
- dim_champions
- dim_role

sink: fct_draft_pick

Source	fct_draft_pick	relations	note
-	pick_id UUID [PK]	-	
LeagueofLegend s.csv	match_id int [FK]	dim_match	
LeagueofLegend s.csv	team_id int[FK]	dim_teams	
LeagueofLegend s.csv	player_id int[FK]	dim_player	
LeagueofLegend s.csv	champion_id int [FK]	dim_champion	
LeagueofLegend s.csv	role_id int [FK]	dim_role	
LeagueofLegend s.csv	is_blue_side bool		

- fct_ban_pick

source: LeagueofLegends.csv

FK:

- dim_match
- dim_teams
- dim_champions

sink: fct_ban_pick

Source	fct_draft_pick	relations	note
-	pick_id UUID [PK]	-	
LeagueofLegend s.csv	match_id int [FK]	dim_match	
LeagueofLegend s.csv	team_id int [FK]	dim_teams	
LeagueofLegend s.csv	champion_id int[FK]	dim_champion	
LeagueofLegend s.csv	is_blue_side bool		
banValues.csv	ban_order int		

- fct_kill_death_combat

source: LeagueofLegends.csv and banValues.csv

FK:

- dim_match
- dim_teams
- dim_player
- dim_champions
- dim_role

sink: fct_kill_death_combat

Source	fct_draft_pick	relations	note
-	kill_death_id UUID [PK]	-	
deathValue.csv	timestamp	-	
LeagueofLegend s.csv	match_id int [fk]	dim_match	
LeagueofLegend s.csv	killer_team_id int[FK]	dim_teams	
LeagueofLegend s.csv	killer_player_id	dim_player	
LeagueofLegend s.csv	killer_champion_id int [FK]	dim_champion	
LeagueofLegend s.csv	killer_role_id[FK]	dim_role	
LeagueofLegend s.csv	victim_team_id[fk]	dim_teams	
LeagueofLegend s.csv	victim_player_id [FK]	dim_player	
LeagueofLegend s.csv	victim_champion_id[FK]	dim_champion	
LeagueofLegend s.csv	victim_role_id	dim_role	

- fct_assist

source: LeagueofLegends.csv and deathValues.csv

FK:

- dim_match
- dim_teams
- dim_player
- dim_champions
- dim_role

sink: fct_assist

Source	fct_draft_pick	relations	note
-	assist_id UUID [PK]	-	
LeagueofLegend s.csv	match_id int [fk]	dim_match	
LeagueofLegend s.csv	team_id int [FK]	dim_teams	
LeagueofLegend s.csv	player_id int [FK]	dim_player	
LeagueofLegend s.csv	champion_id int [FK]	dim_champion	
LeagueofLegend s.csv	role_id[FK]	dim_role	

