League of Legends Gameplay Analysis
using MongoDB - Trino - Superset

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Project Description

Statistical Analysis of Gameplay Data

The objective is to create a prototype tool to analyse gameplay data from historical matches of the League of Legends gameplay. This could allow players to achieve higher performance and gain insight into new strategies and identify problem areas in their gameplay.

Desired outcomes

- Graphical visualization of data
- Data storage in searchable form
- Transform data to information

Methodology

We receive gameplay data in JSON form from the Riot Games API, store the data in a NoSQL database and create graphical visualizations.

Technologies

- Containers: Docker

- NoSQL database: MongoDB

- Query engine: Trino

- Visualization engine: Superset

Implementation

1. Repo based on Superset fork

2. Added Trino and MongoDB to setup

3. Manually transferred files to database

4. Created SQL queries in Superset

5. Created POC graphs in Superset

```sql
SELECT info.gameId,
    info.gameDuration,
    info.teams[1].win as blueWins,
    info.teams[1].objectives.tower.first as blueFirstTower,
    info.teams[2].win as redWins,
    info.teams[2].objectives.tower.first as redFirstTower
    from mongo.league.matches;
```
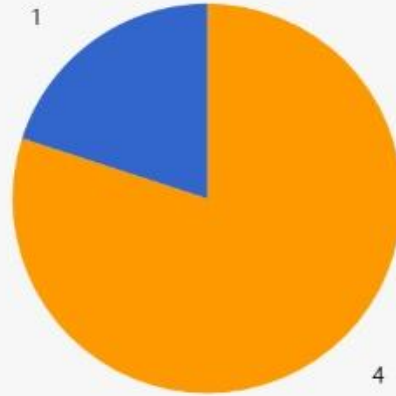
Achieved Results

Achieved Results

1. Technical stack implemented

   a. Docker: MongoDB - Trino - Superset

2. JSON game data stored in NoSQL

3. Query engine translating from SQL

4. Proof of Concept visualization

Future Work

This project only provides a Proof of Concept of data analysis for LoL gameplay. Further work could be based on this to provide more benefits, such as:

- Real-time connection to Riot Games API
- Real-time visualization, using e,g, Kafka for data streaming
- More and better charts to identify actionable information