

# The League Genie

## Problem Statement

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## Executive Summary

This document describes the problem that our database is to solve. It is being created alongside an ER (Entity Relationship) diagram. This document contains information about a high level problem summary containing an elevator statement and the scope of this project. This document also contains information about the function, form, economy, time, and the key stakeholders in it.

League of Legends (LoL) is one of the most popular online games in the world with over 70 million accounts and more than 12 million unique players logging on every day. LoL is a very competitive game for most people and winning really matters to them. Naturally people want to know their chances of winning games at various points in the game. Our project is to create a database that will take in the current game state at a certain time and calculate who the projected winner of the game will be.

## Introduction

This document is the first document describing The League Genie. Also included is an ER diagram. Following this document will be a relational schema, a security analysis, some periodic reports, and a final presentation. This document will give an overview of the proposed system and its requirements, and the security and data analysis will go into more detail as to the implementation of the system. There will then be a final presentation on the effectiveness of our project.

## High Level Problem Summary

### Elevator Statement

We are designing a system to predict the outcomes of games of LoL. As one of the most popular online games in the world, LoL gets very competitive. Naturally people want to know their chances of winning games at various points in the game.

### Primary Success Criteria

Our primary goal is to provide a way for people to see the outcome of their LoL game before it's even over. This will be done by gathering as much information about the game as possible and computing which of the two teams will win to some degree of accuracy. The project's success depends on having a working prediction tool by the end of spring quarter 2015.

## Scope

### Inside the Scope

- Player items
- Player level
- Champion level
- Player gold
- Team gold
- Player stats (kills, deaths, damage, attack speed, etc.)
- State of the game map

### Outside the Scope

- Match history
- Interaction within teams
- Interaction between teams

## Detailed Problem Statement

### Function

- Ability to track everything about the current game that the player is in
- Ability to predict the outcome of a game before it even begins

### Form

### Availability

- Desktop application based in Java

### Usability

- Simple interface to input information
- Fast calculation of outcome

### Performance

- Quick use of statistical data will make runtimes quick

### Security

- Users should not be able to modify contents of the database
- No other major security concerns

## Maintainability

- We will be the only administrators
- New champions/items will be added to the database as they are to the game

## Economy

## Marketability

As e-sports become more popular, statistical analysis of games will become more and more common and will be in even higher demand than they already are. The League Genie will be a perfect fit for such a need.

## Time

## Historical

E-sports are a relatively new field. But other sports have needed, and used, statistical game analyses for years.

## Current<sup>1</sup>

Now, competitive LoL gaming is a big deal. People from other countries have actually gotten visas to play it here in the United States and several colleges have offered scholarships to competitively play LoL. This shows that e-sports are becoming big.

## Future

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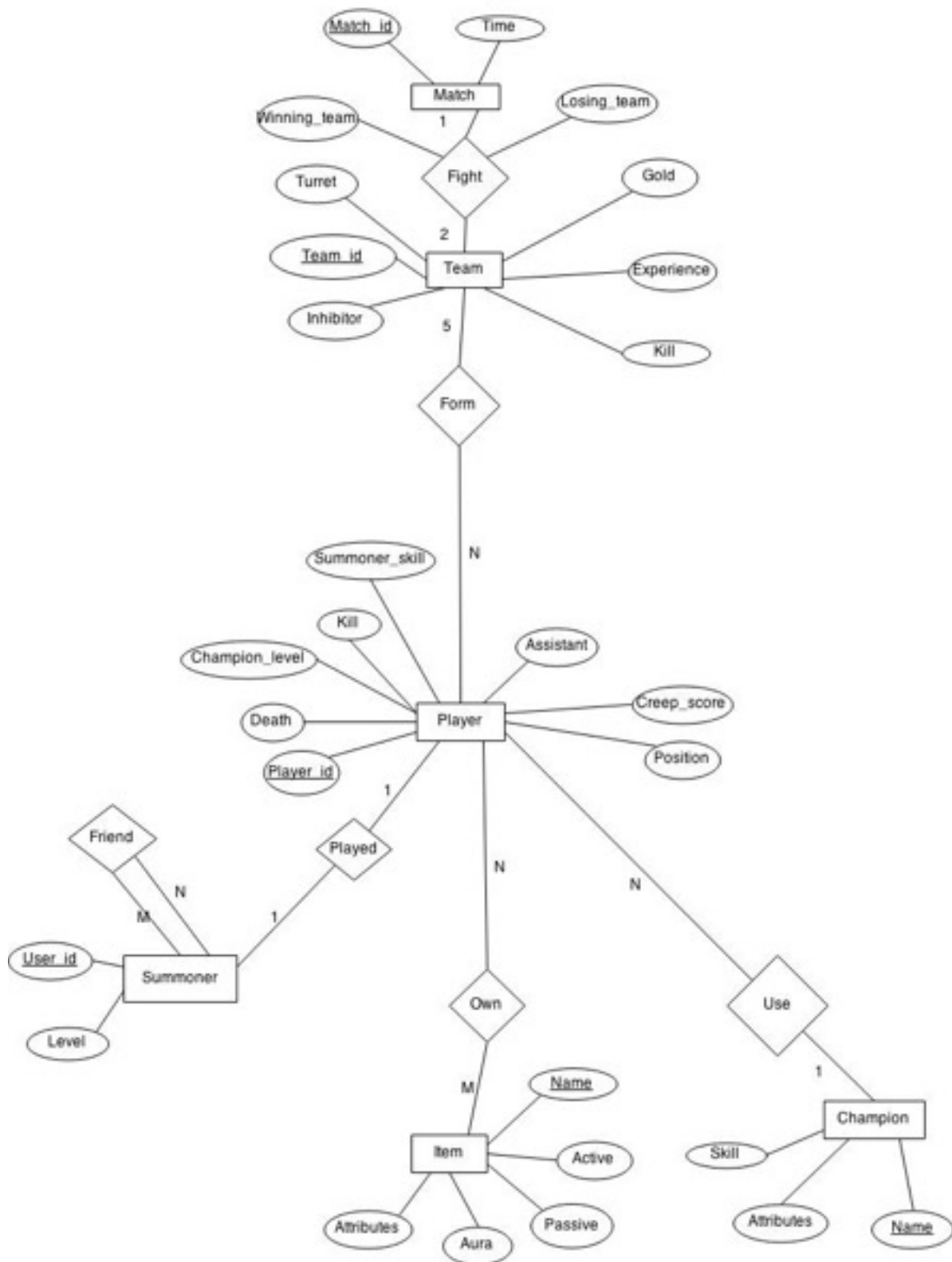
<sup>1</sup>C. Welch. *'League of Legends' gamer granted US visa recognizing him as professional athlete*. [Online] <http://www.theverge.com/2013/8/11/4611180/league-legends-gamer-gets-visa-recognizing-him-as-pro-athlete>

E-sports can only grow from here. Video games are becoming more and more popular every day and will soon be just as common as any physical sport. This opens a window for statistical analysis tools such as The League Genie to shine.

## Key Stakeholders

Name	Role
Sriram Mohan	Project Advisor
Madison Bruner	Project Team
Sasha Chen	Project Team
Average League of Legends Players	End Users
Professional League of Legends Players	End Users
Casters of League of Legends Games	End Users

### ER Diagram



## Relationship Schema

MATCH (Match\_id, Time, Win\_or\_lose)

FIGHT(Wining\_team, Losing\_team)

TEAM (Team\_id, Turret, Inhibitor, Gold, Experience, Kill)

PLAYER (Player\_id, Kill, Champion\_level, Death, Summoner\_skill, Position, Assistant, Creep\_score)

SUMMONER (User\_id, Level)

ITEM (Name, Active, Passive, Aura, Attributes)

CHAMPION (Name, Level, Attributes, Skill)

PLAYER\_ON\_TEAM (Player\_id, Team\_id)

SUMMONER\_OF\_PLAYER (User\_id, Player\_id)

CHAMPION\_OF\_PLAYER (Champion\_name, Player\_id)

ITEM\_OF\_PLAYER (Player\_id, Item\_name)