

# CS 6300 Visualization Final Project Proposal: The International Tournament of DOTA2

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10/24/2018

**Title:** Welcome to the International 2018 Dota2 Championship

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**Project Repository:** [https://github.com/LLTeamVis/vis\\_6630](https://github.com/LLTeamVis/vis_6630)

## Background and Motivation

DOTA2, Defense of the Ancients 2. Enjoyed by millions for over a decade, Dota2 is a game of strategy momentum and action. Two teams of five players called radiant and dire face-off in a vast battlefield, the first team to destroy the opposing team's ancient will win the match. However there are many strips on the road to the ancient. What is even more surprising is are more than half a million people who will play dota2 on steam at the same time all in the whole world every day. Dota 2 is popular because it infused the iconic heroes/gameplay of a groundbreaking Warcraft 3 custom game with vitality and pioneered the legitimacy of competitive video gaming or esports by setting the precedent for tournaments with enormous prize pools.[1]

| Top games by current player count |            |                                  | Largest Overall Prize Pools in eSports |                             |                   |             |  |
|-----------------------------------|------------|----------------------------------|--|-----------------------------|-------------------|-------------|--|
| CURRENT PLAYERS                   | PEAK TODAY | GAME                             | PRIZE POOL                             | NUMBER OF TEAMS             | NUMBER OF PLAYERS | GAME        |  |
| 497,918                           | 618,239    | Dota 2                           | \$25,532,177.00                        | Dota 2                      | 18 Teams          | 90 Players  |  |
| 474,942                           | 474,942    | Counter-Strike: Global Offensive | \$24,687,919.00                        | Dota 2                      | 18 Teams          | 90 Players  |  |
| 368,983                           | 870,192    | PLAYERUNKNOWN'S BATTLEGROUNDS    | \$20,770,460.00                        | Dota 2                      | 16 Teams          | 80 Players  |  |
| 63,770                            | 85,338     | Team Fortress 2                  | \$18,429,613.05                        | Dota 2                      | 16 Teams          | 80 Players  |  |
| 53,385                            | 57,216     | Rocket League                    | \$10,931,103.00                        | Dota 2                      | 14 Teams          | 70 Players  |  |
| 52,245                            | 61,280     | Warframe                         | \$5,070,000.00                         | League of Legends           | 16 Teams          | 86 Players  |  |
| 45,924                            | 57,627     | Grand Theft Auto V               | \$4,946,569.00                         | League of Legends           | 24 Teams          | 128 Players |  |
| 44,875                            | 81,915     | Tom Clancy's Rainbow Six Siege   | \$3,057,521.00                         | Dota 2                      | 20 Teams          | 100 Players |  |
| 38,172                            | 39,974     | Rust                             | \$3,000,000.00                         | Dota 2                      | 16 Teams          | 80 Players  |  |
| 36,451                            | 37,291     | ARK: Survival Evolved            | \$3,000,000.00                         | Dota 2                      | 16 Teams          | 80 Players  |  |
|                                   |            |                                  | \$3,000,000.00                         | Dota 2                      | 16 Teams          | 80 Players  |  |
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|                                   |            |                                  | \$3,000,000.00                         | Dota 2                      | 16 Teams          | 80 Players  |  |
|                                   |            |                                  | \$3,000,000.00                         | Dota 2                      | 16 Teams          | 80 Players  |  |
|                                   |            |                                  | \$2,874,381.00                         | Dota 2                      | 8 Teams           | 40 Players  |  |
|                                   |            |                                  | \$2,612,259.00                         | SMITE                       | 8 Teams           | 40 Players  |  |
|                                   |            |                                  | \$2,500,000.00                         | Halo 5: Guardians           | 16 Teams          | 64 Players  |  |
|                                   |            |                                  | \$2,130,000.00                         | League of Legends           | 16 Teams          | 82 Players  |  |
|                                   |            |                                  | \$2,130,000.00                         | League of Legends           | 16 Teams          | 85 Players  |  |
|                                   |            |                                  | \$2,050,000.00                         | League of Legends           | 14 Teams          | 70 Players  |  |
|                                   |            |                                  | \$2,000,000.00                         | Call of Duty: Black Ops III | 32 Teams          | 127 Players |  |

'The International' is an annual Dota 2 esports tournament hosted by Valve Corporation, the game's developer.[2] Under the temptation of such a huge bonus, a batch of professional players have been 'born'. Every year, a large number of "faith fan" come to this place, and they are keen to pay attention to those professional players. Because 99% of people want to

see 1% of people to realize their dreams in dota2. For them, this event is as popular as the World Cup for those who like soccer. The ti8 that just ended in August this year is undoubtedly a fan's carnival. The appearance of hundreds of heroes in the game brought us a visual feast. However, a large number of games means generating a large amount of data, which also plays an important role.

Dota 2 is more than just a game, it is also a new profession. Many esports teams are planning to employ more data analysts to help players overcome shortcomings and find opponents' weakness, which are ultimate purposes of team coaches and team managers. However, as a fast growing industry, visualizing and analysing esports games has no mature tools and most tools just shows some boring and cumbersome information. As dota2 enthusiasts, we want to develop a visualization tool that is interesting for audience who not familiar with esports and informative for players to capture the key to win a game. For this time, we are looking forward to show the data visulization of the international 2018 (TI8) tournalment through the mutiple features like price pool, matches result, team/player, heros etc. We want to help professional players summarize and find strategies more efficiently so that there will be better play in future games. On the other hand, as the die-hard of dota2, we hope that more and more people could have a clearer understanding of this game and tournament, and even love this game.

## Project Objectives

Provide the primary questions you are trying to answer with your visualization. What would you like to learn and accomplish? List the benefits

- How much attention Ti8 gets around the world?
- How do I know the matche details about group stage and main event?
- How does Team and Player performance in Ti8?
- How dose heros performance in Ti8?
- Which matche is the most popular in Ti8?
- Whay the strength or shortcoming for the specific player or hero?
- Whcih hero is the most frequently appear on ban/pick list?
- etc

As we said before, we want to develop a visualization tool that is interesting for audience who not familiar with esports and informative for players to capture the key to win a game. So the object could be split two parts, one part for normal palyer or someone who are interested in this game. We would like to show some basic and interesting for them. Another part is professional player, we would like to provide such a useful statics to help them know enemies better. To attain these objectives, we need to first discuss about data we can obtain. For data to visualize the process of TI8, there are some types of data we find after searching.

- Some data that reflects huge influence of Ti. Like price pool, viewers peak stage, team quota of regions, top matches etc.

Investors and advertisers could find the benefit potential of Ti tournametal through these statics.

- League information box; Team information box; Player information box; Hero information box; Group matches and main event etc.

These informations box could help normal palyer have a basic knowledge about this game and player. They could find the useful information that they are interested.

- Data for Strategies. For example, player's ability graph, hero's bubble graph etc  
Professional plyaer could find the strengths and weaknesses of their enemies and other professional player as well by analysis him signature's hero and ability graph. Besides, they also could find the strong or weak heroes on current game version by analysis Heor's bubble graph. It will give them some game advantanges in future games.

## Data

We will get the dota2 data we need from some statistics website. We found some alternative data sites

- DOTABUFF - Dota 2 Statistics (<https://www.dotabuff.com/>)
- Liquipedia (<https://liquipedia.net/dota2>)
- Datdota (<https://www.datdota.com/>)
- Esports Vistior Statistics (<https://esc.watch/tournaments/dota2/international-2018>)

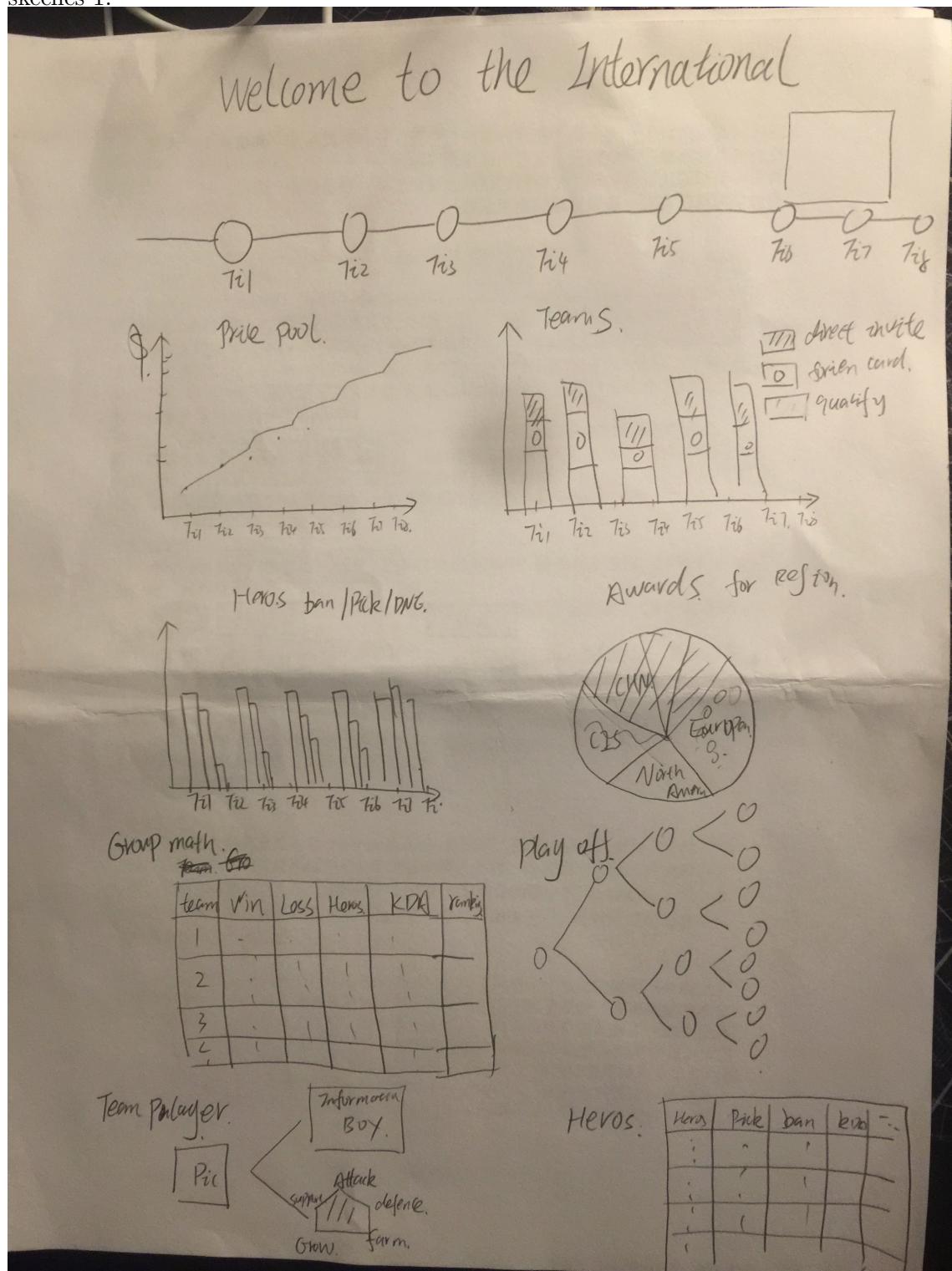
## Data Processing

We have to do substantial data cleanup for most of our data since there are some data we don't need. We will need to re-organize some data like game data using Excel and transfer to .csv file eventually. Besides, we might collect some data manually.

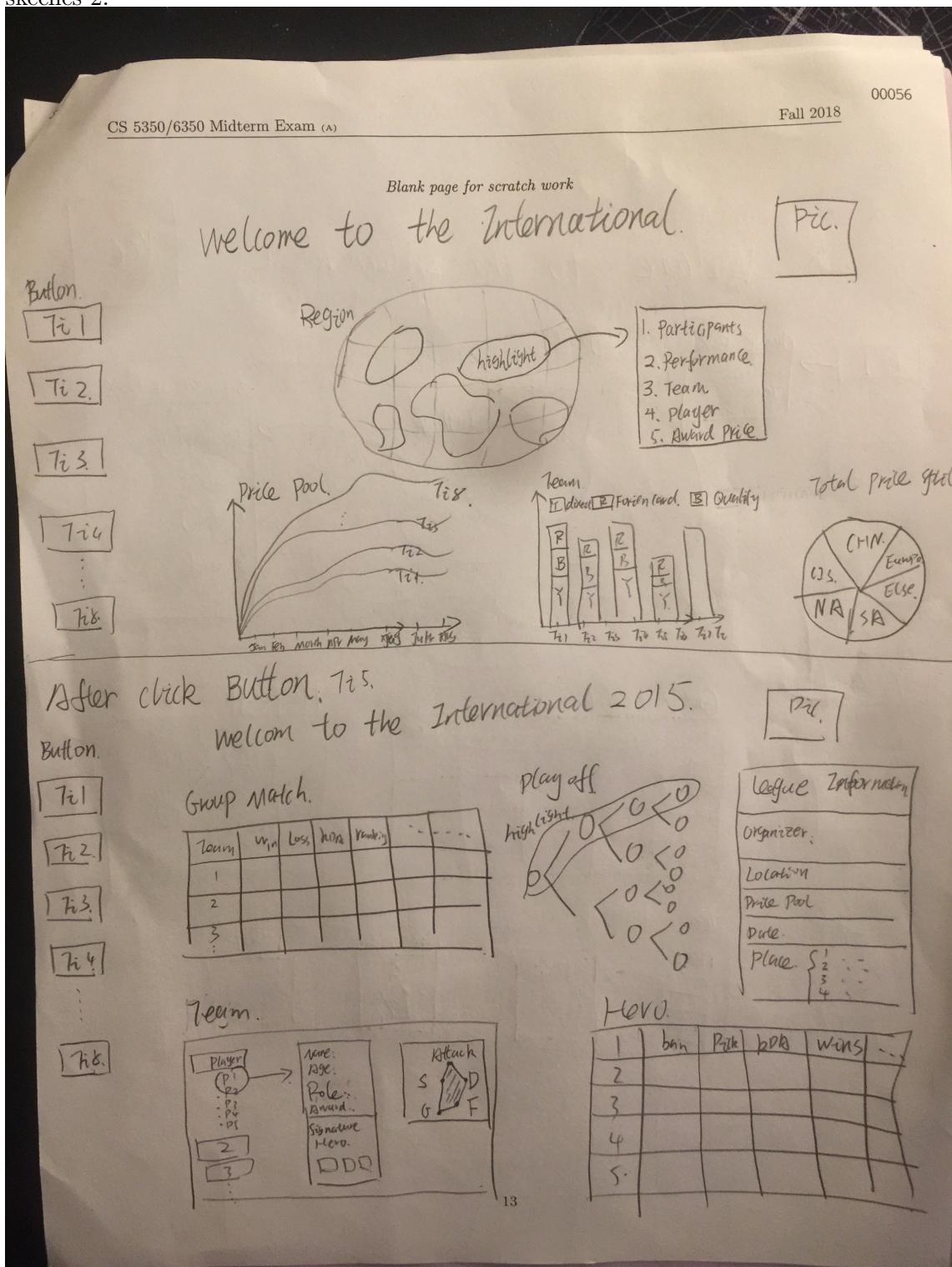
- 2015,2016,2017,2018 Ti daily price pool (120)
- 2018 Pirce Pool Distribution (12 parts)
- Viewers Peak Stats, 2017 and 2018 (6 to 7 aspects each year)
- Tean Quota of Regions (6 regions, 18 teams)
- total matches (148)
- Team (18) + player(90)
- Heros Number: more than 100

## Sketches and Design

sketches 1:

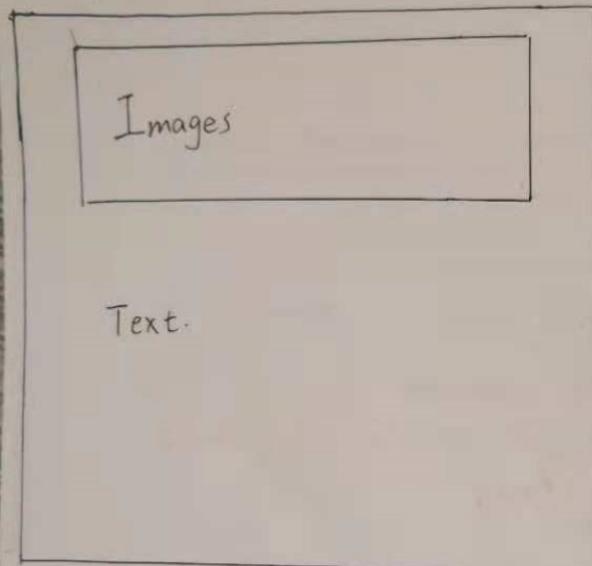


skeches 2:



skeches 3:

## Introduction



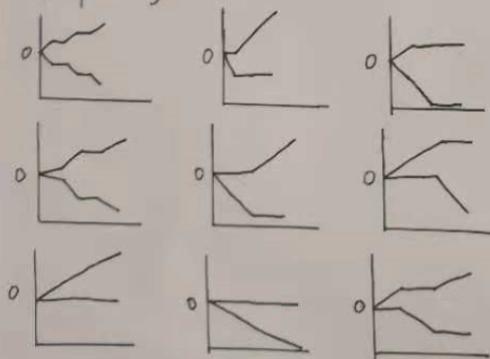
Text.

## Prize Pool

|            |                  |                 |  |
|------------|------------------|-----------------|--|
| OG         |                  |                 |  |
| PSG.LGD    | Evil<br>Geniuses | Team<br>Secret  |  |
| Virtus.pro | Team<br>Liquid   | Optic<br>Gaming |  |

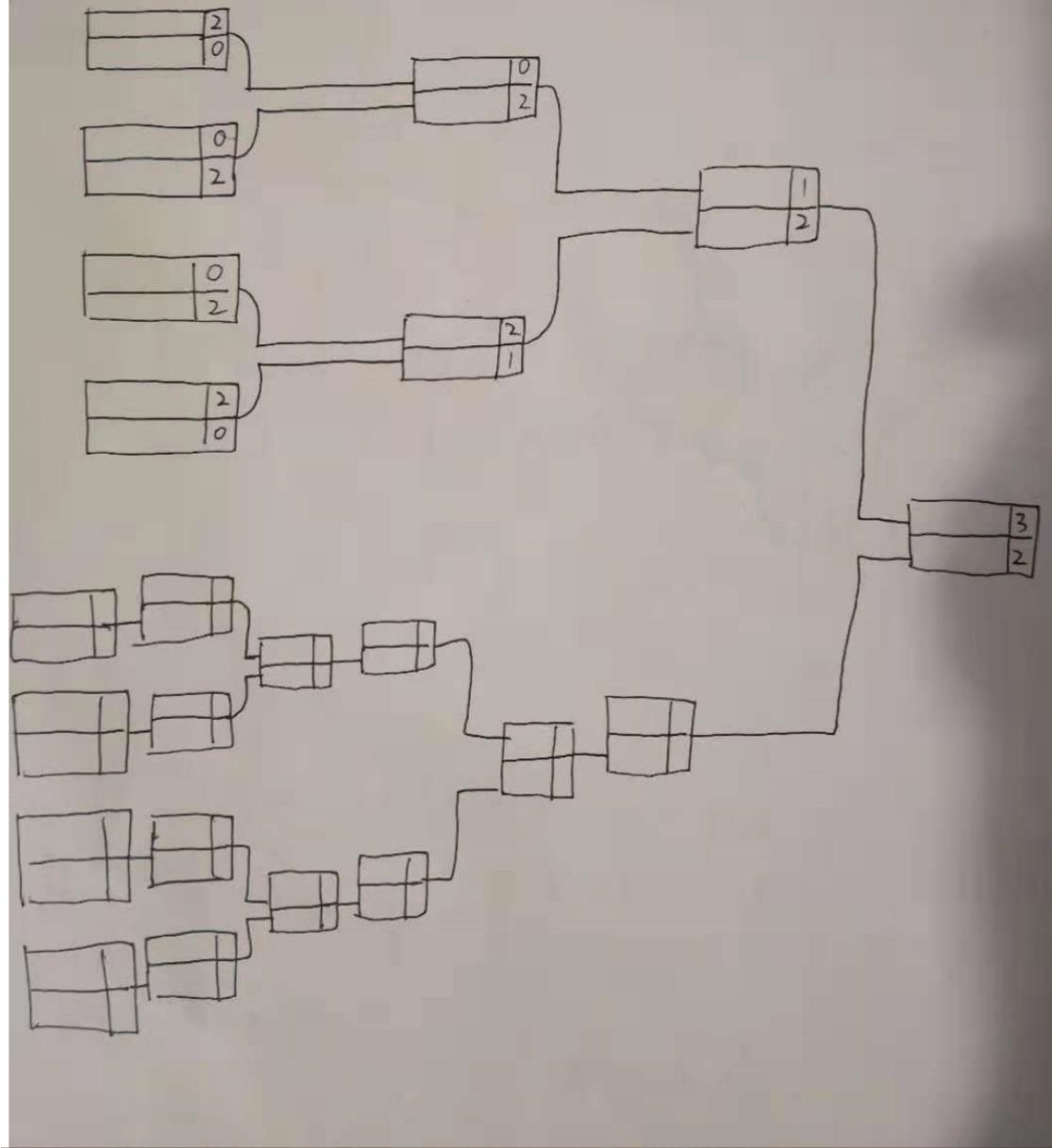
VGJ.  
Storm

## Group Stage



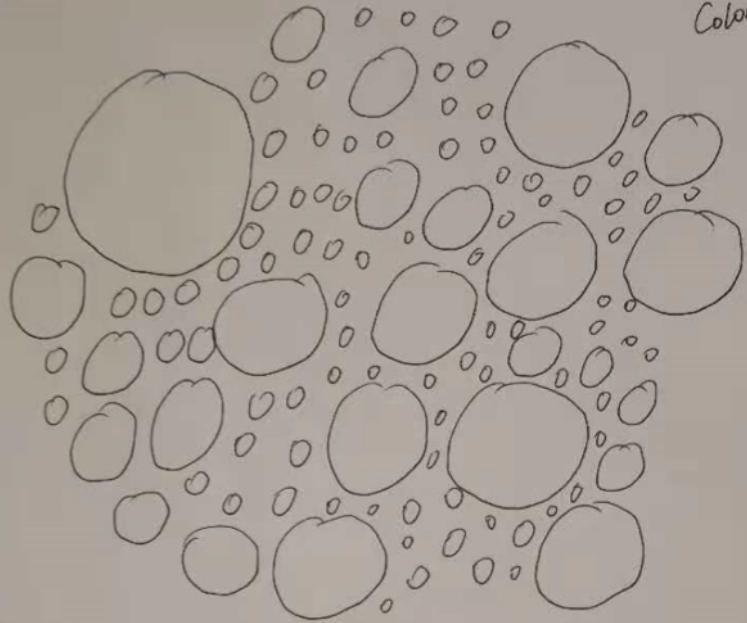
|     | IG  | 0-2 | 1-1 | 0-2 | 1-1 | 0-2 | 0-2 | 0-2 | 0-2 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LGD | 2-0 |     | 0-2 | 1-1 | 2-0 | 2-0 | 1-1 | 1-1 | 2-0 |
| EG  | 1-1 | 2-0 |     | 0-2 | 2-0 | 2-0 | 2-0 | 2-0 | 2-0 |
| TL  | 1-1 | 1-1 | 2-0 |     | 1-1 | 2-0 | 2-0 | 2-0 | 2-0 |
| FN  | 1-1 | 0-2 | 0-2 | 1-1 |     | 1-1 | 1-1 | 2-0 | 2-0 |
| MN  | 1-1 | 0-2 | 0-2 | 0-2 | 1-1 |     | 0-2 | 1-1 | 2-0 |
| DG  | 2-0 | 1-1 | 0-2 | 0-2 | 1-1 | 2-0 |     | 2-0 | 1-1 |
| VGJ | 2-0 | 1-1 | 0-2 | 0-2 | 0-2 | 1-1 | 0-2 |     | 2-0 |
| WT  | 2-0 | 0-2 | 0-2 | 0-2 | 1-1 | 0-2 | 1-1 | 0-2 |     |
|     | IG  | LGD | EG  | TL  | FN  | MN  | OG  | VGJ | WT  |

Main Event

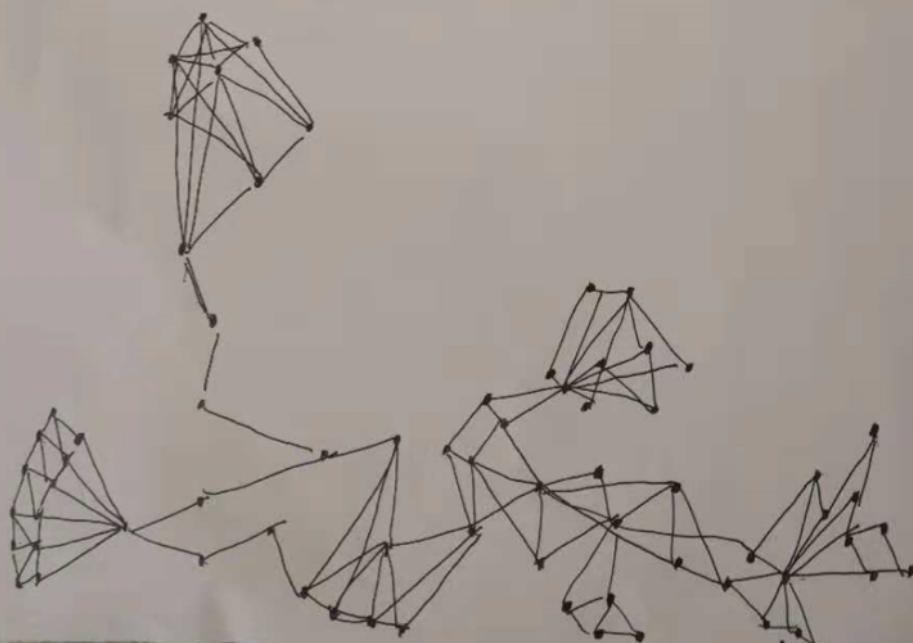


Heros.

Size  GPM   
Color  XPM.



Players.

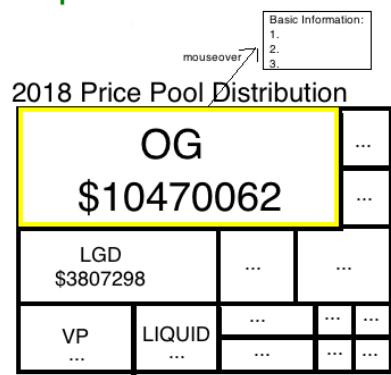
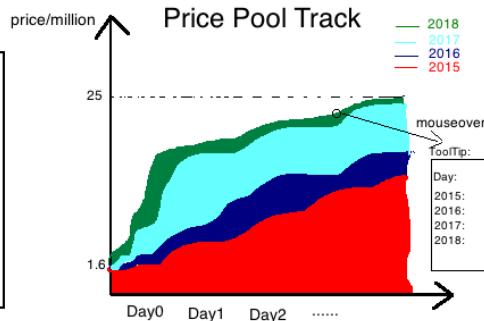


Final Design:

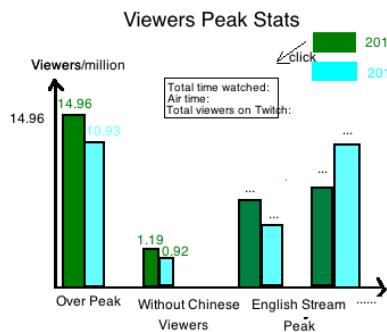


## Welcome To The International 2018 Dota2 Championship

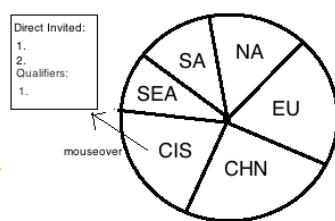
| League Information |  |
|--------------------|--|
| Series:            |  |
| Organizer:         |  |
| Version:           |  |
| Location:          |  |
| Venue:             |  |
| Teams:             |  |
| Price Pool:        |  |
| Date:              |  |



| Top Matches |  |
|-------------|--|
| #1          | LFY vs LIQUID<br>91283 viewers<br>Video Link: www..... |
| #2          |  |
| #3          |  |
| #4          |  |



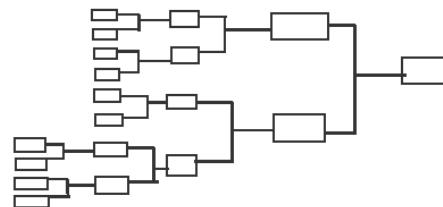
Team Quota of Regions



| Group A Stage: |       |
|----------------|-------|
| E              | 1-1   |
| A              | \     |
| B              | 2-0   |
| C              |       |
| A              | B C E |

| Group B Stage: |       |
|----------------|-------|
| X              | \     |
| W              | 0-2   |
| Y              | 1-1   |
| Z              |       |
| X              | W Y Z |

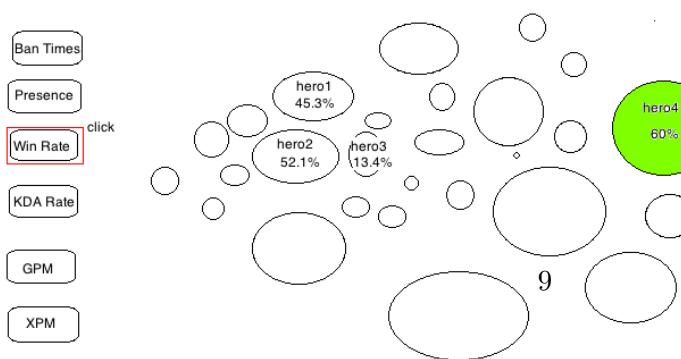
Main Event:



|        |        |     |     |     |
|--------|--------|-----|-----|-----|
| Team A | Team B | ... | ... | ... |
| Team C | Team d | ... | ... | ... |

Team Information: Player Information:

|  |         |
|--|---------|
| Team Players:<br>1.<br>2. click<br>3.<br>4.<br>5.<br>Honors:<br>Interviews:<br>... | Picture |
| Name:<br>Role:<br>Ability:<br>EPM<br>Attack<br>GPM<br>Defence<br>Support           |         |



Hero Information

|               |         |              |
|---------------|---------|--------------|
| Strength      | Agility | Intelligence |
| ●             | ●       | ●            |
| Speed:        |         |              |
| Damage:       |         |              |
| Attack Point: |         |              |

# Description

We can roughly divide this design into four parts:

- Introduction of Basic Information

- Information Box

People could have a basic knowledge about the Ti8 by these information easily and efficiently. They would not be trapped in the 'encirclement' of data.

- Price Pool Track;

We will visually reflect the popularity of Ti8 by showing the differences in prize pool compared with the past. Undoubtly, the price pool will be one of the most important aspect to prove how popualarity of Ti8.

- 2018 Price Pool Distributin

It could help people understand the opportunities of team's bonuses in the Ti8, especially encourage for people who would like to be a professional player. Besides,

- Viewers Peak States;

- Team Quota of Regions

- Matches

- Group Matches;

We will show these informations by tabel, people could query matche result easily. Each rectangular represent one match, which incldes intergration. Besides, we are going to display match details by showing tooltip box.

- Main Events and Awards. We will show these information by using tree. Since we could track each team match's sechedul.

–

- Team and Player

- Team Information It includes team player, achievements,Ti8 interviewers link etc. Help people to understand the team information and characteristics.

- Player Information Section;Include Name, Birth,Country,Role,Signature Hero etc. Let people have a basic knowledge about this player.

- Five-Star map. In order to more intuitively reflect the characteristics of the player, we decided to use a five-star map to represent it. Five aspects of ability: Attack(kill),Defence(death),Support(assist),Farm(GPM:gold per mins),Grow(EPM:experience per mins).

- Heros

- Bubble Chart The bubble chart is a good idea for visualizing heros. we come up with some designs for interaction. Using hover and click in visualization is a good way to show more detailed information with less crowded layout.

- we are going to use hero image in d3 circule, it will help people to looking specific hero witout a mount of time.

- We provide some choice like 'Presence','Win Rate', KDA Rate etc. It will help people to compare each hero's performance in Ti8 directly by the size of the circule.
- Heros Basic Information Box Help people to have a basic information about this hero, which include the type of hero(strength,agility,Intelligence),original damage,attack point etc.

## Must have Features

- League Information
- 2018 Price Pool Distribution
- Group matches and Playoff
- Team/Player; For each team, show basic information like team player,achievements etc. We need some informations for player as well like ability,role etc.
- Heros; Basic information such as GPM, XPM, win rate, appearance etc.

## Optional Features

- Top Matches Section.
- Viewers Peak State
- Team Quota Regions

## Project Schedule

- 10.29 - 11.09 MileStone, prepare all data and finish 'Price Pool Track','2018 Price Pool Distribution' section as possible
- 11.10 - 11.30 Rest of part. Add more section if times allow.