

Final Project

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```
LOL <- read.csv("high_diamond_ranked_10min.csv", header = T, na.strings = "?", stringsAsFactors = T)
head(LOL)
```

```
##      gameId blueWins blueWardsPlaced blueWardsDestroyed blueFirstBlood
## 1 4519157822      0          28          2              1
## 2 4523371949      0          12          1              0
## 3 4521474530      0          15          0              0
## 4 4524384067      0          43          1              0
## 5 4436033771      0          75          4              0
## 6 4475365709      1          18          0              0
##  blueKills blueDeaths blueAssists blueEliteMonsters blueDragons blueHeralds
## 1         9         6         11          0          0          0
## 2         5         5          5          0          0          0
## 3         7        11          4          1          1          0
## 4         4         5          5          1          0          1
## 5         6         6          6          0          0          0
## 6         5         3          6          1          1          0
##  blueTowersDestroyed blueTotalGold blueAvgLevel blueTotalExperience
## 1                   0         17210         6.6         17039
## 2                   0         14712         6.6         16265
## 3                   0         16113         6.4         16221
## 4                   0         15157         7.0         17954
## 5                   0         16400         7.0         18543
## 6                   0         15899         7.0         18161
##  blueTotalMinionsKilled blueTotalJungleMinionsKilled blueGoldDiff
## 1                   195                   36          643
## 2                   174                   43         -2908
## 3                   186                   46         -1172
## 4                   201                   55         -1321
## 5                   210                   57         -1004
## 6                   225                   42          698
##  blueExperienceDiff blueCSPerMin blueGoldPerMin redWardsPlaced
## 1                -8         19.5         1721.0          15
## 2             -1173         17.4         1471.2          12
## 3             -1033         18.6         1611.3          15
## 4                -7         20.1         1515.7          15
## 5               230         21.0         1640.0          17
## 6               101         22.5         1589.9          36
##  redWardsDestroyed redFirstBlood redKills redDeaths redAssists
## 1                 6              0          6          9          8
## 2                 1              1          5          5          2
```

```
## 3          3          1          11          7          14
## 4          2          1          5          4          10
## 5          2          1          6          6          7
## 6          5          1          3          5          2
##   redEliteMonsters redDragons redHeralds redTowersDestroyed redTotalGold
## 1          0          0          0          0          16567
## 2          2          1          1          1          17620
## 3          0          0          0          0          17285
## 4          0          0          0          0          16478
## 5          1          1          0          0          17404
## 6          0          0          0          0          15201
##   redAvgLevel redTotalExperience redTotalMinionsKilled
## 1          6.8          17047          197
## 2          6.8          17438          240
## 3          6.8          17254          203
## 4          7.0          17961          235
## 5          7.0          18313          225
## 6          7.0          18060          221
##   redTotalJungleMinionsKilled redGoldDiff redExperienceDiff redCSPerMin
## 1          55          -643          8          19.7
## 2          52          2908         1173          24.0
## 3          28          1172         1033          20.3
## 4          47          1321          7          23.5
## 5          67          1004         -230          22.5
## 6          59          -698         -101          22.1
##   redGoldPerMin
## 1          1656.7
## 2          1762.0
## 3          1728.5
## 4          1647.8
## 5          1740.4
## 6          1520.1
```

Overview of dataset

1. What does it include?

This data set include the data like win or lose, Kill, Deaths, Assists of high diamond rank in the League of Legends which also called LOL.

2. Where and how will you be obtaining it? Include the link and source.

We will be obtaining it from the Kaggle website (<https://www.kaggle.com/datasets/bobbyscience/league-of-legends-diamond-ranked-games-10-min/data>) where it is available for download.

3. About how many observations? How many predictors?

```
dim(LOL)
```

```
## [1] 9879  40
```

There are 9879 obs and 40 predictors.

4. What types of variables will you be working with?

We will use 0 and 1 instead of True and False in the data set, so all of the variables are numerical.

5. Is there any missing data? About how much? Do you have an idea for how to handle it?

```
sum(is.na(LOL))
```

```
## [1] 0
```

There is no missing data.

overview of your research questions

1. What variable(s) are you interested in predicting? What question(s) are you interested in answering?

I am an old player of this game. However, the highest rank I've ever reached is platinum. Therefore, I want to learn what should I do according to the high diamond rank player to increase my win rate. I want to reach diamond at the end of this season. I will focus on the blue team data.

I am pretty interested in blueFirstBlood, blueKills, blueDeaths, blueTotalGold and blueAvgLevel.

2. Name your response/outcome variable(s) and briefly describe it/them.

blueWins will be my response variable. 1 if the blue team has won, 0 otherwise.

3. Will these questions be best answered with a classification or regression approach?

I think the regression models can help me to find the relationship between blueWins and other variables that i interested.

4. Which predictors do you think will be especially useful?

blueGoldDiff, blueFirstBlood, blueKills and blueDeaths

5. Is the goal of your model descriptive, predictive, inferential, or a combination? Explain.

The goal of our model is a combination of predictive and descriptive, with the aim of building a model that predicts the win rate of this game and show possible relationships of variables.

Project timeline

- Week 3: Load data, conduct basic exploratory data analysis.
- Week 4: Preprocess data, visualizations/distributions of variables.
- Week 5-8: Build regression models, select final model.
- Week 9-10: Decide final result and prepare final project paper.
- Week11: Try to reach diamond.

Question

Can i change my topic if I find a better data set later?