

# The Los Angeles Lakers: A Return to Dominance

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## I. INTRODUCTION

**T**HE Los Angeles Lakers' previous three seasons have been dreadful. Once the most dominant team in the NBA, they are now in the doldrums of the western conference.

In order to assist the Lakers in making the right free agent decisions this coming offseason, high level season summary statistics will be pulled and analyzed to determine what factors lead to wins. Further, we will also determine the upcoming free agents the Lakers should target to bolster their chances of making the playoffs in future seasons.

## II. RESEARCH METHODOLOGY

To determine the Lakers' best chance of making the playoffs, summary statistics will be analyzed from the previous three years for all NBA teams. These statistics will be inclusive of typical metrics such as field goal percentage, three pointers attempted, low post points and others.

In order to obtain these statistics, an API call will be set up to obtain the data from the SportsData API [1] using the python requests module, python pandas module and python 2.7.

These data will be stored in a relational (MySQL) database for manipulation, metrics building, easy access and analysis.

Analysis of the data will occur primarily in Python or SAS by performing multiple regression analysis to determine what coefficients lead to the most wins.

Resultant data will be visualized in Tableau and hosted to the Tableau public server [2] for data investigation and further ad-hoc data analysis. Custom player cards for optimal free agents targeted by our analysis will be created using Tableau.

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## III. HISTORICAL CONSIDERATIONS

Previous work related to this problem includes the 'Moneyball' analysis done by the Oakland Athletics.

Our approach will be similar in scope and nature, except methods will be applied to basketball statistics. Further, our methodology will be more robust and repeatable, as we will be setting up API calls that can be scheduled. Once a regression equation is built, wins predictions or coefficient importance can be obtained and established automatically.

## IV. RESEARCH SCHEDULE

Due Date	Objective	Owner
06/28/15	<b>Sprint 1:</b> Connect and Integrate  <b>Data:</b> Summary Statistics of NBA teams and players  <b>Actions:</b> Create python script to connect and retrieve team and player datasets through SportsData API [1] call  Create local MySQL database created,  Establish tableau public account,  Clean and transform data for load to MySQL.	Team
07/12/15	<b>Sprint 2:</b> Build Relationships and Analyze Data  <b>Actions:</b> Establish relationship between players data and teams data in RDBMS.	Team

	Research and create multiple regression model developed in Python or SAS to analyze data in MySQL.	
07/26/15	<b>Sprint 3: Data Visualization</b>  Finalize regression equation.  Establish ODBC to local MySQL database.  Apply regression equation to players data set.  Visualize top N players for the Los Angeles Lakers to target in Free Agency.	Team
08/09/15	<b>Sprint 4:</b>  Complete Research Proposal White Paper  Prepare and organize demo .	Team

#### V. RESOURCES

Python 2 and associated modules: pandas, statsmodels, matplotlib, numpy. MySQL and Tableau will be utilized to complete our research project. Depending on the success of python script, SAS will be utilized to confirm model assumptions.

#### VI. REFERENCES

- [1] [http://developer.sportradar.us/docs/NBA\\_API](http://developer.sportradar.us/docs/NBA_API)
- [2] <http://public.tableau.com/s/>