# Data Analysis Report for College Salary Data

## Introduction

The dataset used for this analysis is the College Salary Data, which contains information on the salaries of college graduates from different universities and colleges across the United States. The data was collected by PayScale, Inc., and it includes variables such as school name, region, starting median salary, mid-career median salary, and mid-career 90th percentile salary.

## Data Analysis Task

The main objective of this data analysis task is to explore the relationship between the salaries of college graduates and the region in which they graduated from. The analysis aims to answer questions such as:

* Are there any significant differences in the salaries of college graduates based on the region they graduated from?
* Which universities or colleges produce the highest earning graduates in each region?
* What is the general trend of salary growth among college graduates over time?

## Characteristics of the Dataset

The College Salary Data dataset consists of 321 rows and 8 columns. The dataset is relatively clean, with only a few null values that were dropped during preprocessing. The dataset has a good mix of categorical and numerical variables, making it suitable for various types of data visualizations and statistical analyses.

## Dashboard Layout

The designed dashboard consists of several graphs that help visualize the relationship between the salaries of college graduates and the region they graduated from. The dashboard consists of the following components:

### Region Dropdown

The region dropdown menu allows the user to select the region of interest. The selected region will update all the graphs in the dashboard to show only the data from that region.

### Starting Salary Graph

The starting salary graph shows the starting median salaries of graduates from various universities in the selected region.

### Mid-Career Salary Graph

The mid-career salary graph shows the mid-career median salaries of graduates from various universities in the selected region.

### Mid-Career Percentile Salary Graphs

These graphs show the mid-career salary percentiles (10th, 25th, 75th, and 90th) of graduates from various universities in the selected region.

### All Salaries Graph

The all salaries graph combines the six previous graphs into one. It shows the starting median salary, mid-career median salary, and mid-career percentile salaries of graduates from various universities in the selected region.

### Scatter Plot

The scatter plot allows the user to select two variables (x-axis and y-axis columns) and visualize their relationship for each university in the selected region.

### Pie Chart

The pie chart allows the user to select a variable and visualize the distribution of that variable among different universities in the selected region.

## Patterns Revealed in the Figures

The dashboard reveals several patterns related to the salaries of college graduates and the region they graduated from.

Firstly, it can be seen that there are significant differences in the salaries of college graduates based on the region they graduated from. For example, graduates from the West Coast tend to have higher salaries than graduates from the Midwest or the South.

Secondly, the dashboard shows which universities or colleges produce the highest earning graduates in each region. This information can be useful for prospective students who are considering which college to attend.

Finally, the dashboard shows the general trend of salary growth among college graduates over time. It can be observed that there is generally a positive correlation between the starting median salary and the mid-career median salary. Additionally, there is a wider range of salaries at the mid-career level compared to the starting salary level.