**Project Report on Predicting Salary Based on Level using Polynomial Regression**

**Overview of the project**

The overview of the project is to predict the Salary of an Employee based on which Level he falls. There are levels 1 to 10 and the salary should be predicted based on it. The model should predict what Salary should be offered to the new employee.

**Solution Structure**

**Data importing and processing**

Important packages were imported in the Jupyter Notebook environment. Data is loaded and the copy of data is created. Basic facts or information of the data is collected. The columns are ‘Position’, ’Level’ and ‘Salary’. No null values determined.

**Exploratory Data Analysis (EDA)**

Scatter plot: This plot deduced the relation between Salary and Level that as their Level increased the Salary Increased.

Bar plot: The same idea is being drawn from the Bar plot as well as the Scatter plot.

Heatmap: The heatmap is the key to determine the relation between the columns of the dataset. The correlation between the columns ‘Level’ and ‘Salary’ are high.

**Building of the Model**

Model was built by importing the Skikit-learn library. The data is divided into train and test data. First a linear model is being built and tested. Since this linear model with R2 Score of only 67% is achieved, we are now trying to create another model of Polynomial Regression of degree 4.

This Polynomial Regression Model created with degree ‘4’ gave an R2-Score of 99.7% which is a significant model to predict the Salary based on the Level.

This model is saved and can be used to predict the Salary based on which level the Employee is categorized.

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| **Model Name** | **Accuracy Score** |
| Linear Regression | 67% |
| Polynomial Regression | 99.7% |

**Conclusion**

The end result of the model concludes this model can be used in predicting some scientific experiment results, finance sectors, progression in disease epidemics, etc. This model can predict when the relation between the data fits in polynomial order.