Practice Project Overview

Estimated Effort: 5 mins

Project Scenario

You have to perform data analytics on a medical insurance charges dataaset. This is a filtered and modified version of the Medical Insurance Price Prediction dataset, available under the CC0 1.0 Universal License on the Kaggle website.

Parameters

The parameters used in the dataset are:

1. **Age**
   Age of the insured. Integer quantity.

2. **Gender**
   Gender of the insured. This parameter has been mapped to numerical values in the following way.

Gender	Assigned Value
Female	1
Male	2

3. **BMI**
   Body Mass Index of the insured. Float value quantity.

4. **No_of_Children**
   Number of children the insured person has. Integer quantity.

5. **Smoker**
   Whether the insured person is a smoker or not. This parameter has been mapped to numerical values in the following way.

Smoker	Assigned Value
Smoker	1
Non smoker	2

6. **Region**
   Which region of the USA does the insured belong to. This parameter has been mapped to numerical values in the following way.

Region	Assigned Value
Northwest	1
Northeast	2
Southwest	3
Southeast	4

7. **Charges**
   Charges for the insurance in USD. Floating value quantity.

Objectives

In this project, you will:

- Load the data as a pandas dataframe
- Clean the data, taking care of the blank entries
- Run exploratory data analysis and identify the attributes that most affect the charges
- Develop single variable and multi variable Linear Regression models for predicting the charges
- Use Ridge regression to refine the performance of Linear regression models.

Author(s)

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Changelog

Date (YYYY-MM-DD)	Version	Changed By	Change Description
2023-09-16	0.1	Abhishek Gagneja	Initial Version Created
2023-09-19	0.2	Vicky Kuo	Reviewed and Revised