Health Insurance cost

predict insurance costs?

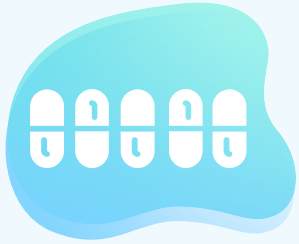
METHODOLOGE

INTRODUCTION

EDA

Feature engineering

Linear regression models



CONCLUSION


01
INTRODUCTION

Health Insurance cost

INTRODUCTION

Today we'll explore a Data Set dedicated to the price of treatment of various patients. the price of treatment depends on several factors: designation, form of clinic, town of residence, age then on. we've got no data on the diagnosis of patients. However, we have alternative information which will facilitate U.S.A. to create a conclusion regarding the health of patients and observe regression analysis.

FEATURES

SEX

insurance contractor gender, female, male

AGE

age of primary beneficiary

BMI

Body mass index , providing an understanding of body.

CHILDREN

Number of children covered by health insurance

SMOKER

Smoking , yes or No

REGION

the beneficiary's residential area in the US, south , north

CHARGES

Individual medical costs billed by health insurance

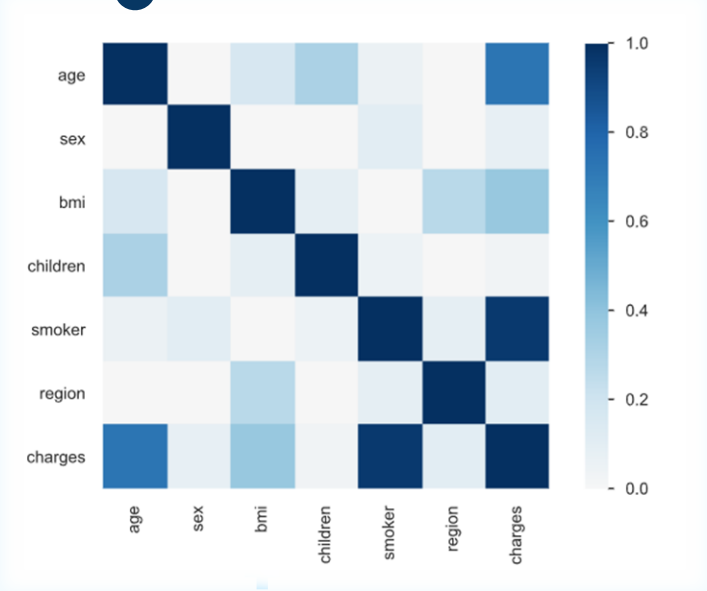

02
EDA

Free Null 01

Correlations 03

02 No Duplicate

Correlations




03
Feature
engineering

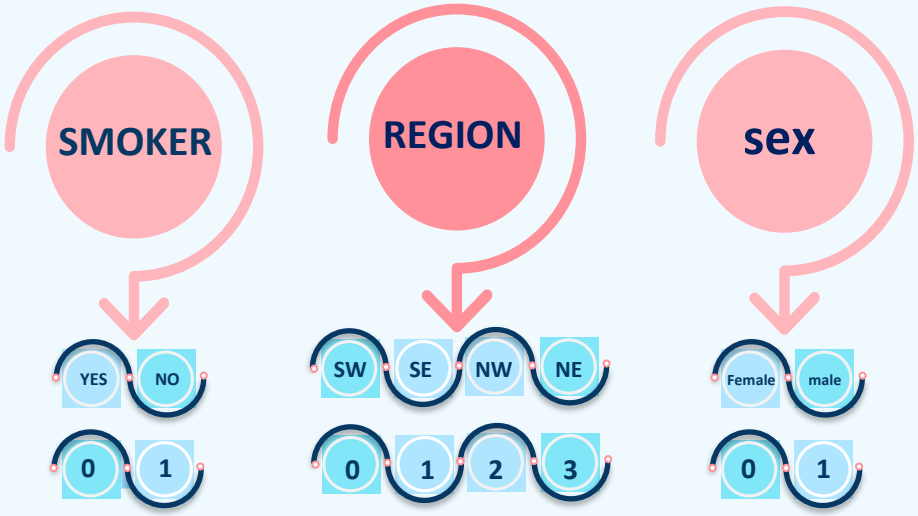
OUR TARGET

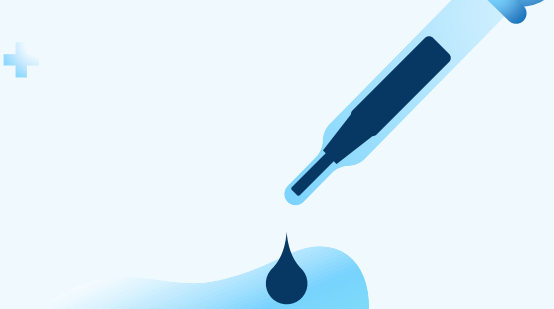
Charges

WHY Charges !!

Columns	Correlation
Region	- 0.0062
SEX	0.0572
Children	0.0679
BMI	0.1983
AGE	0.2990
Smoker	0.7872
Charges	1.0000

In our project we used Label Encoder which converts from non-numerical labels to numerical.





04

Linear regression models

MODELS SCORES

Linear Regression

Train : 0.749008
validation : 0.742403

Random Forest

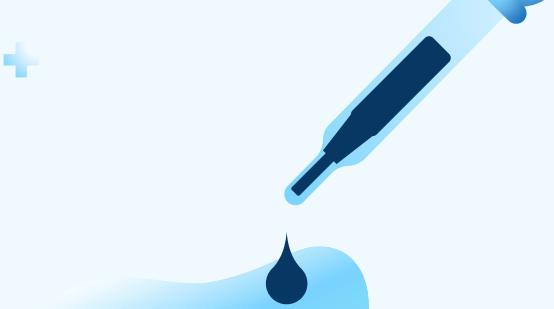
Train : 0.974000
validation : 0.869000

Polynomial Features

Train : 0.843331
validation : 0.822541

Lasso

Train : 0.749008
validation : 0.742103

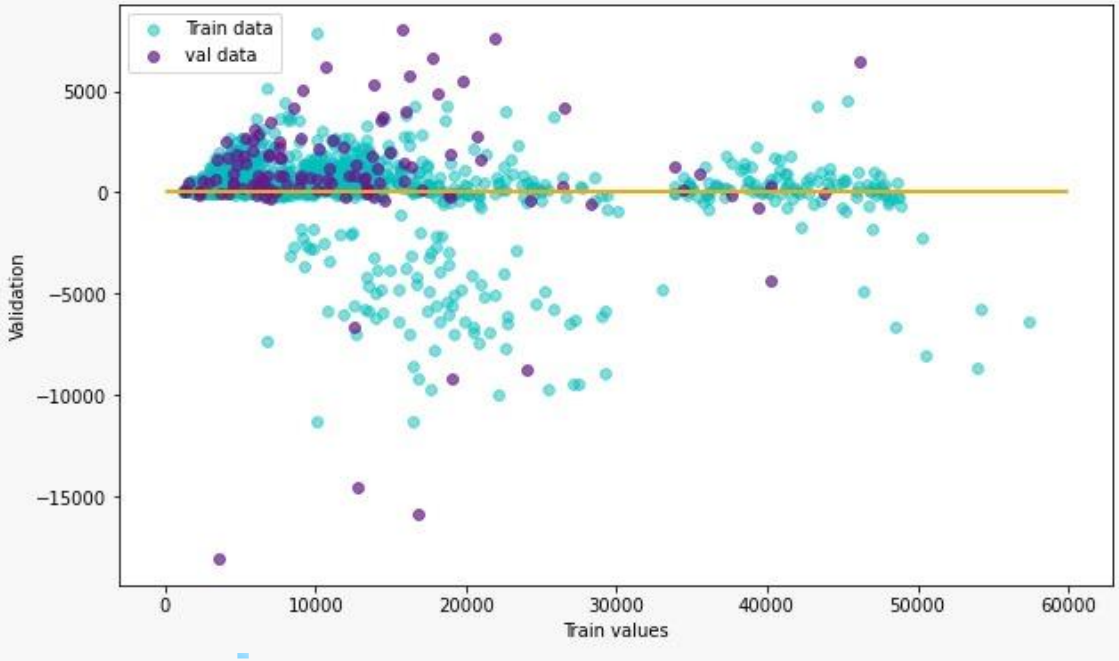


05

CONCLUSION

CONCLUSION

- In the end, the Polynomial has been selected because it's the highest ratio experiment .
- i


Train data
val data
5000
0
−5000
−10000
−15000
Validation
0
10000
20000
30000
40000
50000
60000
Train values

THANKS

For watching ..

Health Insurance cost

Presented by

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Abdulrahman Qureshi