

LOW LEVEL DESIGN

INSURANCE PREMIUM PREDICTION

Document Control

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ABSTRACT

Now a day's Data is playing a central role and is carrying the big asset in the insurance industry. Using Machine Learning in Insurance domain good models can be built which can help to choose right/appropriate Insurance policies. Creating the policy is a really important and challenging task. In order to determine health insurance premium quotes, there are several factors that have to be taken into consideration when defining a premium, such as pre-existing diseases, age, gender, family medical history, lifestyle, etc.

1. Introduction

1.1. What is Low-Level design document?

The goal of LLD or a low-level design document (LLD) is to give the internal logical design of the actual program code for Food Recommendation System. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can directly code the program from the document.

1.2. Uses Of LLD

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work

2 OBJECTIVE

The purpose behind this project is to build an machine learning model which will predict rough estimate of insurance premium based on some parameters like age, BMI, sex, etc. Which would help user to choose appropriate health insurance policy.

3 Problem Statement

The goal of this project is to give people an estimate of how much insurance premium they need based on their individual health situation. After that, customers can work with any health insurance carrier and its plans and perks while keeping the projected cost from our study in mind. This can assist a person in concentrating on the health side of an insurance policy rather has the ineffective part.

4 Proposed Solution

The web application created will predict the amount of insurance Premium which will help the user to choose appropriate health insurance policy based on his/her current health situation.

5 Dataset Description

The dataset contains 1338 observations (rows) and 7 features (columns). The dataset contains 4 numerical features (age, BMI, children and expenses) and 3 nominal features (sex, smoker and region). This features can help for predicting future medical expenses of individuals that help medical insurance to make decision on charging the premium.

Dataset Overview

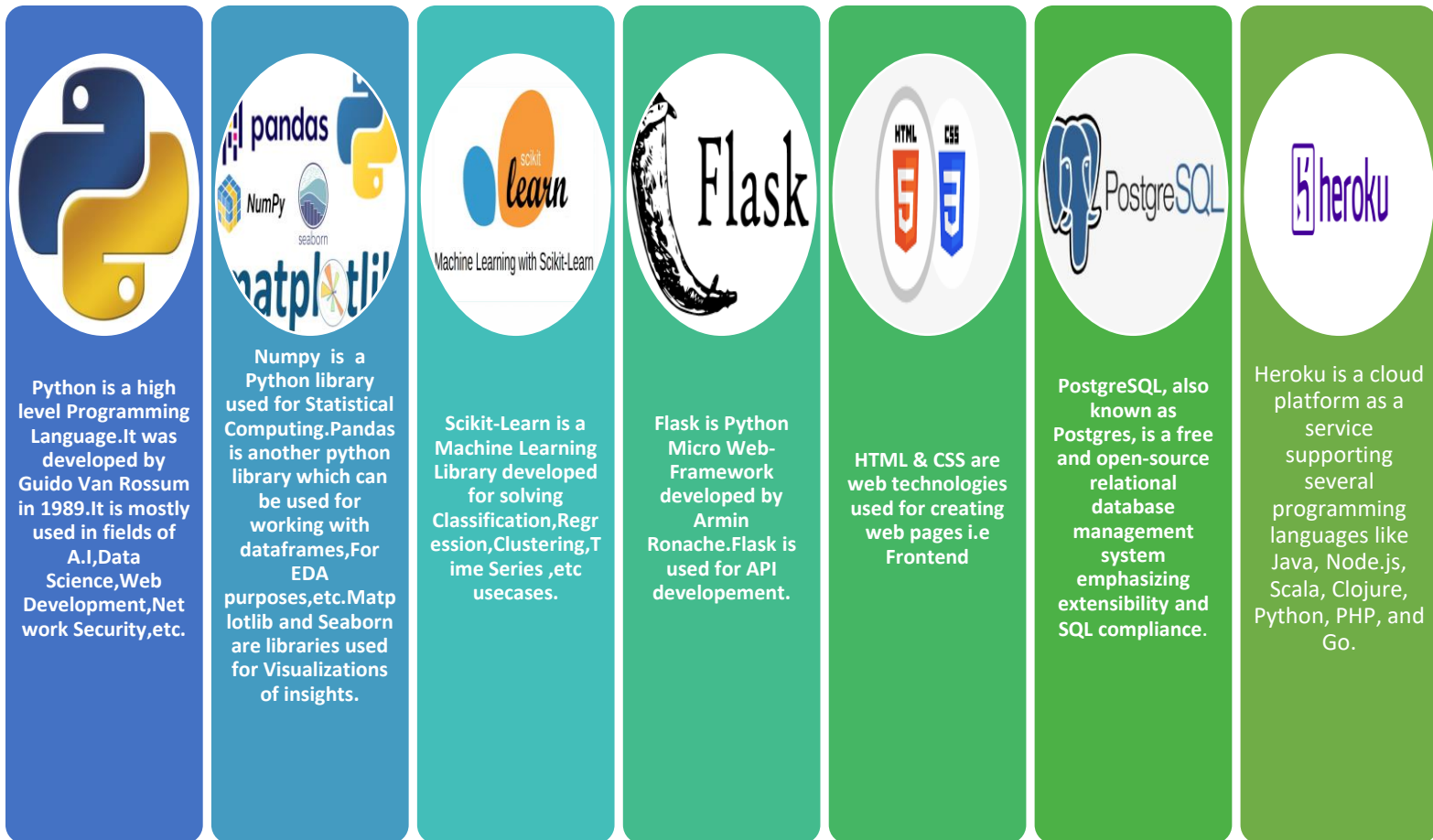
A	B	C	D	E	F	G
age	sex	bmi	children	smoker	region	expenses
19	female	27.9	0	yes	southwest	16884.92
18	male	33.8	1	no	southeast	1725.55
28	male	33	3	no	southeast	4449.46
33	male	22.7	0	no	northwest	21984.47
32	male	28.9	0	no	northwest	3866.86
31	female	25.7	0	no	southeast	3756.62
46	female	33.4	1	no	southeast	8240.59
37	female	27.7	3	no	northwest	7281.51

Feature Description :-

- 1 Age :- Gives General information about human age.
- 2 sex :- Gives General information about gender.
- 3 bmi :- It tells the Body Mass Index of the certain person.
- 4 children :- It tells if the person has children or not.
- 5 smoker :- It indicates if person is smoker or not.
- 6 region :- This column tells from which region person is from.

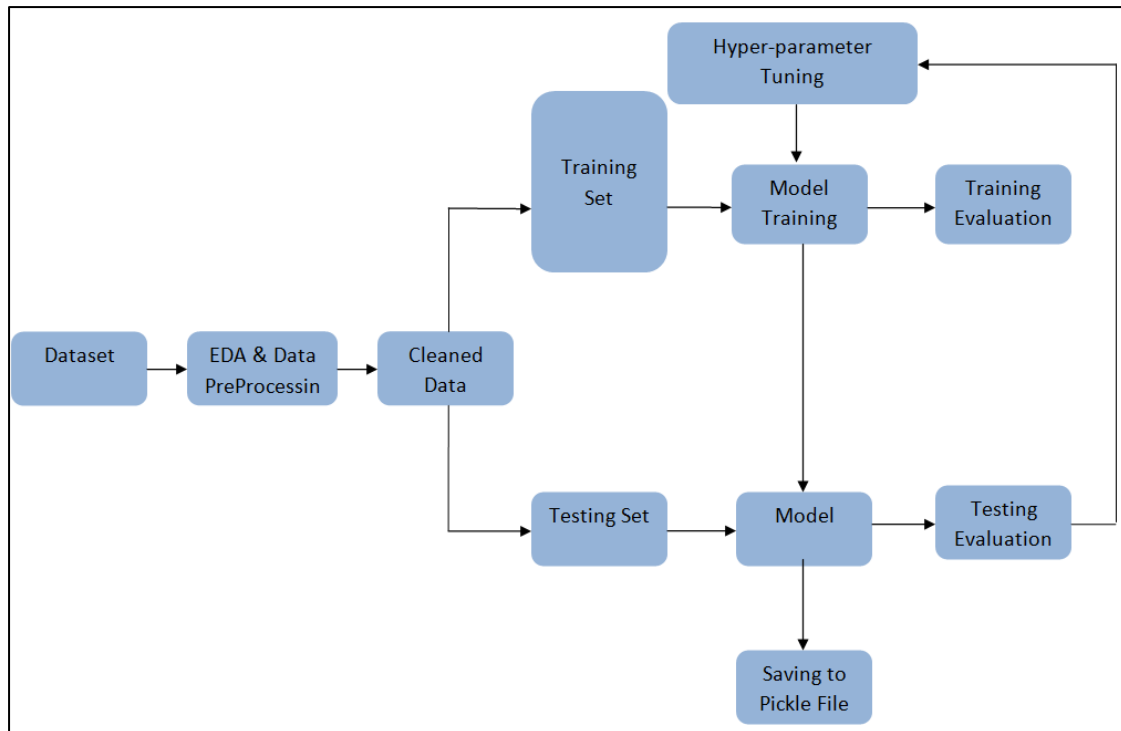
7 expenses :- It gives information about expenses of person.

6 Tools Used/Tech Stack



7 – Process Flow

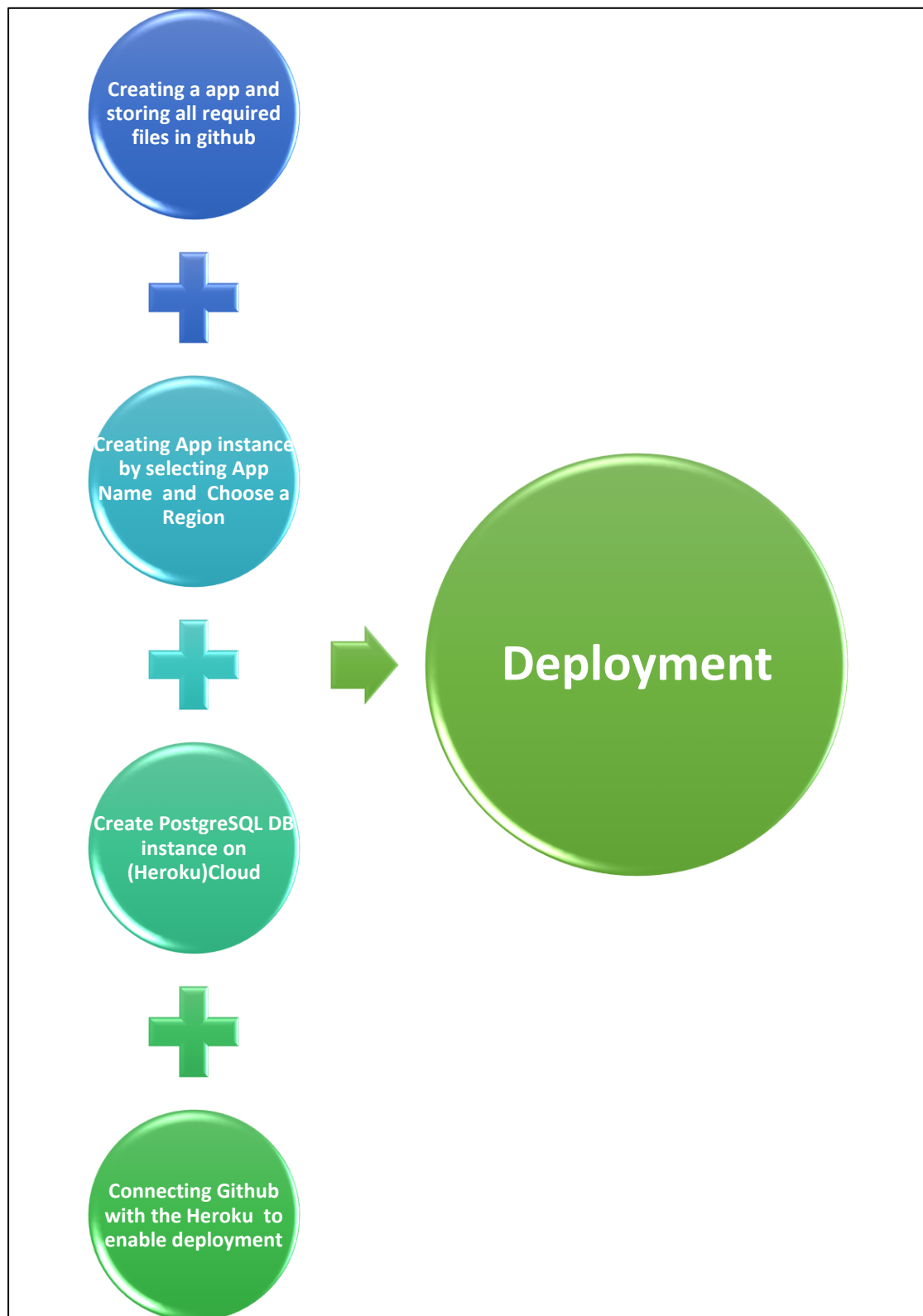
7.1 Training & Evaluation Workflow



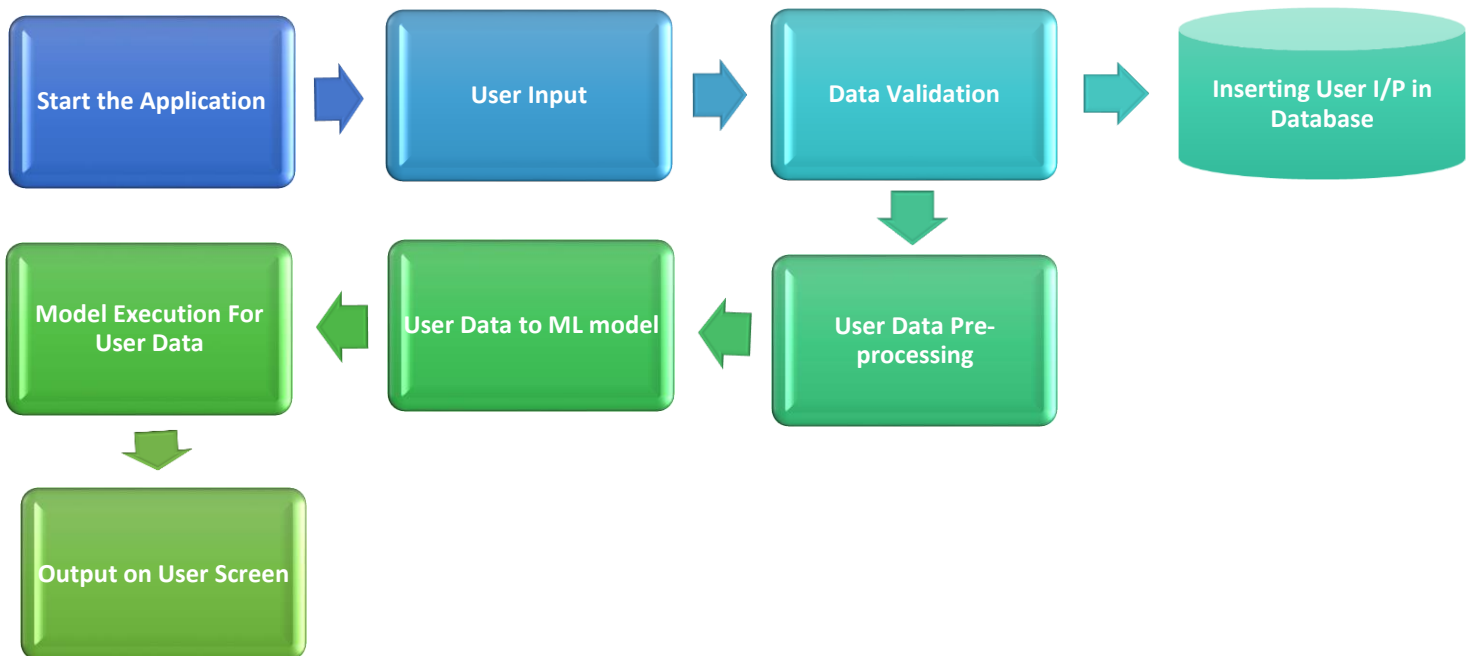
7.2 Frontend/API creation workflow



7.3 Deployment workflow (Heroku Cloud Platform)



7.4 Deployed Application Workflow



8 Conclusion

By using Machine Learning model we can predict rough estInsurance cost based on certain factors like age , bmi,sex,etc which will help an individual user to select appropriate insurance policy.