HealthCal

A SMART APP FOR DISEASE PREDICTION

Motivation

- Limited access to healthcare makes it difficult to individuals to predict risks and take precautions.
- High healthcare costs prevents people from routine checkup for common threats.
- Lack of awareness leads to neglecting health condition until people experience symptoms of serious health problem.

Why HealthCal?

- To provide risk assessments and prediction for a range of health condition
- To help users better understand their health
- To reduce healthcare costs by early detection

Now let’s dive deeper into how HealthCal actually works!

Data Collection

We collected the datasets from kaggle.

* **Diabetes Prediction:** ~1000 Data with nine columns.

* **Heart attack risk prediction:** ~500 Data with fourteen columns.

* **Stroke risk prediction:** ~5000 Data with six columns.

* **Maternal health risk prediction:** ~1000 Data with six columns

Data Preprocessing

Steps used for data pre-processing :

* **Data Exploration**
* **Data Cleaning**
* **Handling Missing Values and Outliers**
* **Encoding Categorical Variables**
* **Data Transformation**
* **Feature Selection**
* **Data Splitting**
* **Data Normalization**

MODELS USED

We tried multiple models for each section and choose the best one based on performance.

* **Diabetes Prediction:** MLPClassifier - A Neural Network based model that provided ~80% accuracy.

* **Heart attack risk prediction:** Support Vector Classification (SVC) - a type of supervised learning algorithm that is based on the concept of finding the best decision boundary to separate data points that ensured 85% accuracy.

* **Stroke risk prediction:** Gaussian Naive Bayes model- A probabilistic approach for classification providing 88% accuracy.

* **Maternal health risk prediction:** Random Forest - A decision tree based model that provided 78% accuracy in our dataset.

Technologies

- Python
- JavaScript
- CSS
- HTML
- Flask

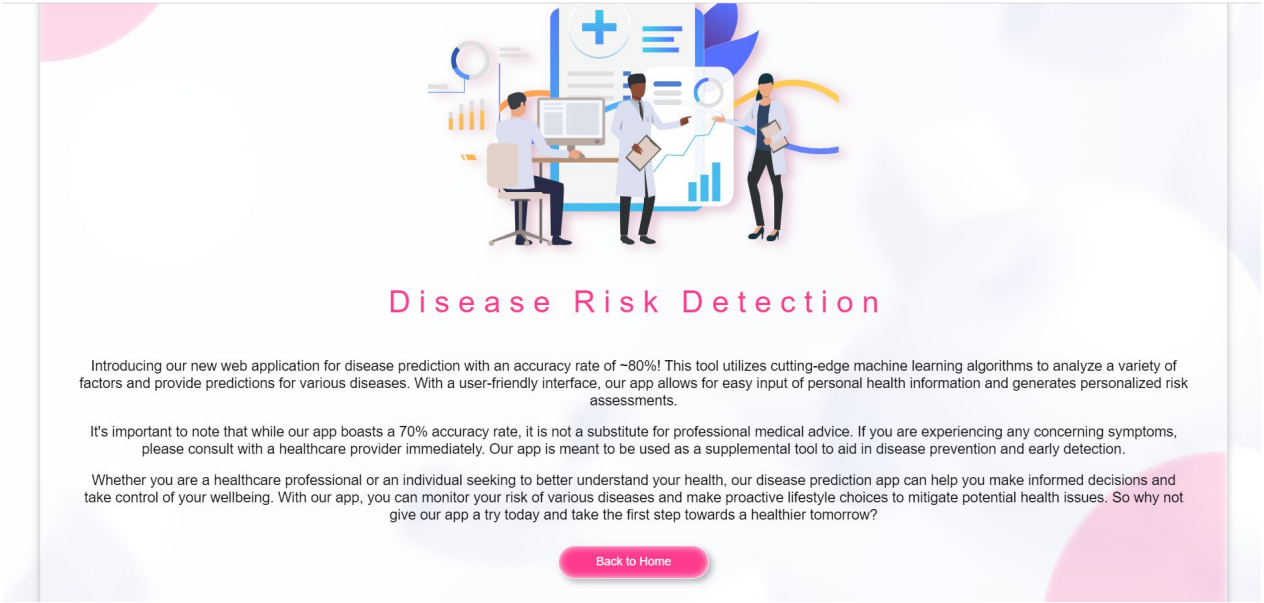
HealthCal in a nutshell

Landing Page of HealthCal

Landing page of HealthCal

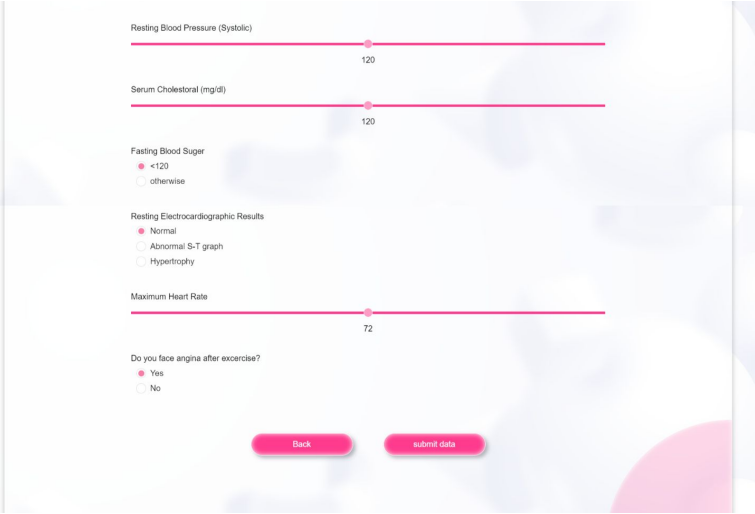
- Introduction on HealthCal
- Navigation system to know more page
- Routing to separate disease prediction page

Learn more page of HealthCal

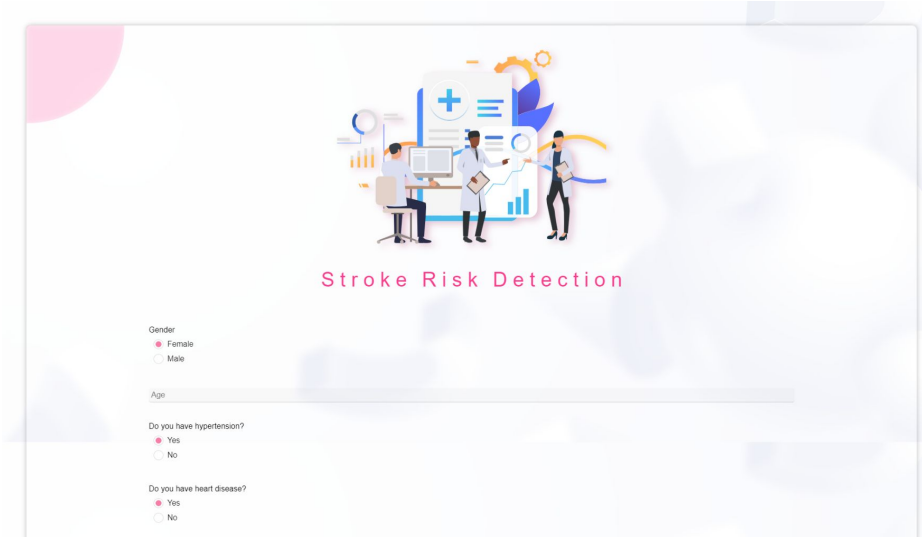


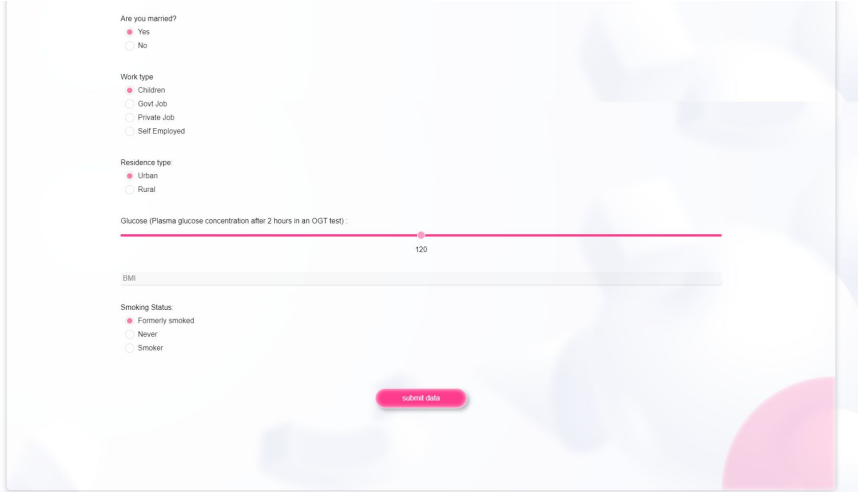
- A short overview on our app

Heart Risk Prediction

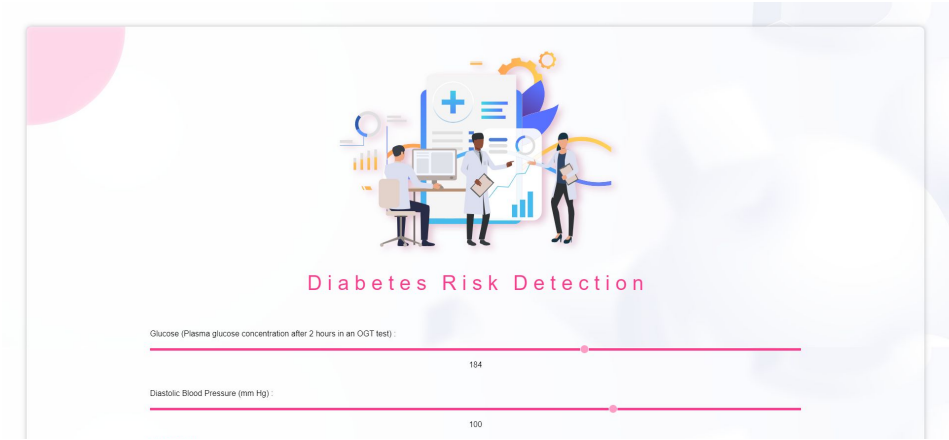


Stroke Risk Prediction

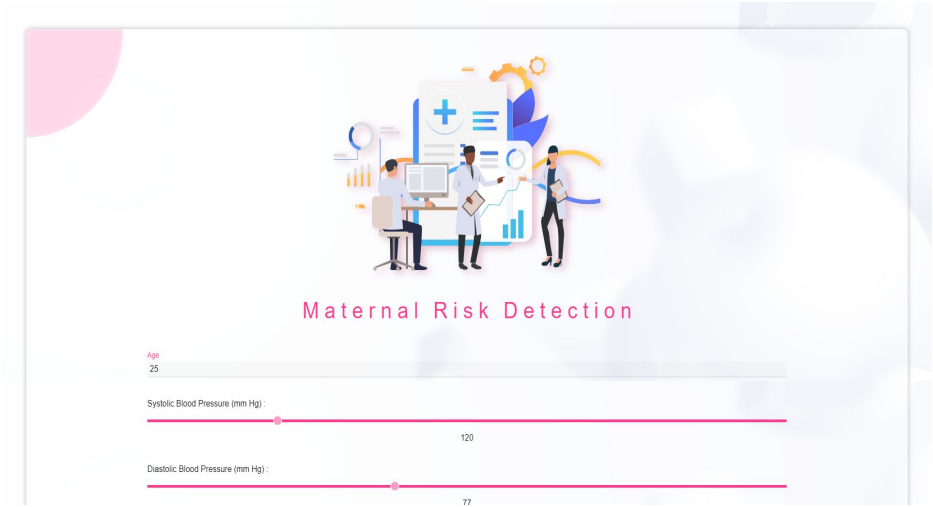


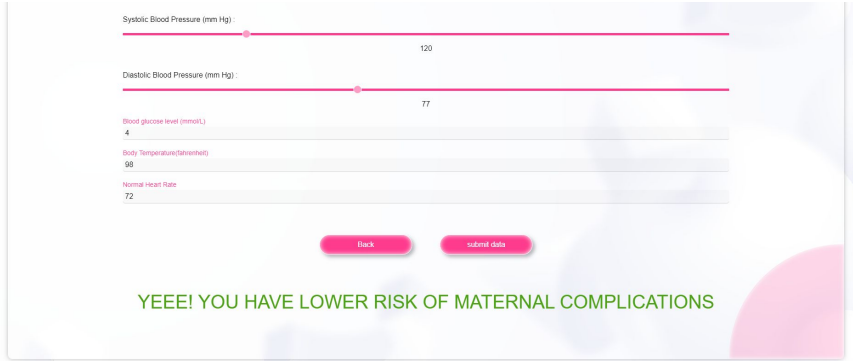


Diabetes Risk Prediction



Maternal Health Risk Prediction





Use Cases

Some use cases of HealthCal includes :

* **Early detection of diseases**
* **Remote disease diagnosis**
* **Pre-diabetes detection**
* **Health equity**
* **Health tracking**

Impacts

HealthCal can impact the society in many positive ways, including :

* **Reduced health-care costs**
* **Improved patient outcomes**
* **Health education**
* **Improved public health**
* **Public health monitoring**

Thank You

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