

## Notes

### Project

This is primarily a data science project that utilized health data. By no means it can replace a doctor, nurse, or other health professional. The application raises awareness of heart disease risk factors. Heart diseases are a leading cause of morbidity and mortality worldwide. A better understanding of the contributing factors can improve early interventions.

### Model and Data

The user input is evaluated with a pre-trained machine learning model (random forest). The model was trained on a dataset containing 253,680 survey responses from cleaned Behavioral Risk Factor Surveillance System (BRFSS) 2015 survey data.

### Model Evaluation

The model is more sensitive towards risk factors for heart diseases as they become more significant (e.g. very high blood pressure or high cholesterol) and/or with the accumulation of risk factors (e.g. low general or mental health and more).

As a result, the model may be biased

# Health Screening

## for Coronary Heart Disease or Myocardial Infarction

Has High Blood Pressure been confirmed by a doctor, nurse, or other health professional?

Yes



Have you ever been told by a doctor, nurse or other health professional that your blood cholesterol is high?

No



Did you have a cholesterol check within the past five years

No



What is your Body Mass Index (BMI)

25



Have you smoked at least 100 cigarettes in your entire life?

Yes



Did you ever have a stroke?

No



Do you have diabetes? If yes, do you have diabetes level 1 or 2?

No



Did you do physical activity or exercise during the past 30 days?

Yes



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Age 50 to 54



What is your highest level of education?

Grades 9 through 11 (Some high school)



What is your annual income?

Less than \$25,000 (\$20,000 to less than \$25,000)

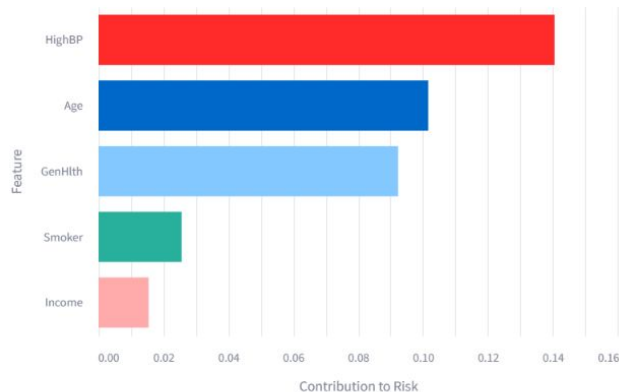


Confirm

The risk for a heart disease is currently 'Low Risk'

Heart Disease Risk in Percentage: 31.42%

### Top 5 Contributing Factors



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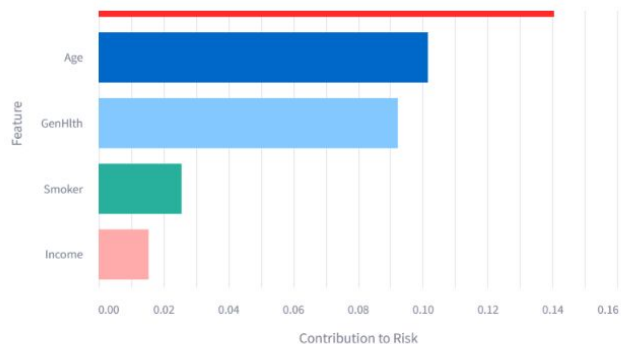
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## Personalized Health Advice for Top Risk Factors

**HighBP:** Maintain a healthy weight, reduce sodium intake, engage in regular exercise, and manage stress to lower blood pressure.

**Age:** Follow age-appropriate health guidelines, including screenings and vaccinations.

**GenHlth:** Focus on preventive care, regular check-ups, and a balanced lifestyle to improve general health.

**Smoker:** Consider smoking cessation programs, nicotine replacement therapy, or behavioral support to quit smoking.

**Income:** Utilize community resources and budgeting strategies to access affordable healthcare and nutritious food.