**Heart Disease Prediction Web Application ❤️**

This project is an end-to-end data science application that predicts a patient's likelihood of having heart disease based on their medical data. The machine learning model is deployed as a user-friendly, interactive web application using Streamlit.

**🚀 Live Application**

**You can interact with the live prediction model here:**

[**https://data-science-certification-taskgit-9cytluxjdsddatgzk6r8gv.streamlit.app/**](https://data-science-certification-taskgit-9cytluxjdsddatgzk6r8gv.streamlit.app/)

**📂 GitHub Repository**

The complete source code, documentation, and trained model are available in this GitHub repository:

[**https://github.com/rabindahal94-cell/Data-Science-Certification-Task.git**](https://github.com/rabindahal94-cell/Data-Science-Certification-Task.git)

**🛠️ How to Run This Project Locally**

To run this application on your own computer, please follow these steps.

**Prerequisites**

* Python 3.7+
* Git

**Instructions**

1. **Clone the repository:**
2. git clone [https://github.com/rabindahal94-cell/Data-Science-Certification-Task.git](https://github.com/rabindahal94-cell/Data-Science-Certification-Task.git)
3. cd Data-Science-Certification-Task
4. **Install the required libraries:**
5. pip install -r requirements.txt
6. **Run the Streamlit app:**
7. streamlit run app.py

The application will automatically open in a new tab in your web browser.

**📝 About the Project**

This project demonstrates a complete data science workflow, including data cleaning, exploratory data analysis (EDA), model training, and deployment.

* **Dataset**: The model was trained on a publicly available heart disease dataset from the TensorFlow repository. The data includes 13 medical attributes such as age, cholesterol level, and chest pain type.
* **Model**: A LogisticRegression classifier was used to build the prediction model. The entire process is detailed in the model\_training.py script.
* **Technology**: The project is built with Python and leverages key data science libraries:
  + **Pandas** for data manipulation.
  + **Scikit-learn** for model training and evaluation.
  + **Matplotlib & Seaborn** for data visualization.
  + **Streamlit** for building the interactive web application.