



# HEALTH-HOMIE

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- ▶ We are choosing goal #3 of the UN's primary 17 goals: Good Health and Well-being
- ▶ Just in the United States 795,000 people die or are disabled due to being undiagnosed or misdiagnosed
- ▶ In under-developed areas statistics are worse 😞
- ▶ Access to annual checkup routines and healthcare are not available everywhere
- ▶ Regular monitoring for common health issues would ensure human well-being
- ▶ Our objective is to provide an online portal to assess common ailments
- ▶ We begin with heart disease and diabetes

## PROBLEM AT-HAND



# COMMON HEALTH ISSUE 1: DIABETES

- ▶ According to the International Diabetes Federation, around 9.3% of the global adult population has diabetes.
- ▶ Diabetes can lead to many life-threatening issues, and it is necessary for people to catch it early.
- ▶ Our model helps people to check if they have diabetes by feeding their body info.
- ▶ This will help people catch on early if they have diabetes or not and if they need to see a doctor.



# COMMON HEALTH ISSUE 2: HEART DISEASE

- ▶ On average 50% male and 65% female of older adults die out of Cardiovascular disease – making it the leading cause of death worldwide
- ▶ Heart diseases are hard to find at the initial stage. Prevailing advanced treatment options could save many lives if diagnosed early.
- ▶ Our portal helps the common man to assess his heart condition by feeding in some vitals that are easy to capture using OTC gadgets
- ▶ The portal suggests to reach out to physicians if heart issues are diagnosed.



# HEALTH HOMIE

- ▶ Our product health homie can be accessed through internet and it is loaded as webpage.
- ▶ The user need not install anything and can visit the webpage any number of times. Hence the user need not worry about storage on device
- ▶ We use AI algorithms to train model using existing data set on diabetes and heart disease and improved the accuracy of the model for accurate predictions



# DIABETES PREDICTION N HEALTH HOMIE

- ▶ Our Diabetes Predictor has a dataset that consists of 7 parameters including pregnancies, glucose and blood pressure.
- ▶ Our dataset filters out data that have unusually high or low values and only keeping the data that correlates and increases the accuracy.
- ▶ An AI model is trained using a decision tree algorithm to diagnose the disease



# CARDIAC ISSUE PREDICTION IN HEALTH HOMIE

- ▶ Our dataset consists of 13 features indicative of heart issues including blood pressure, cholesterol, and max heart rate
- ▶ Dataset is filtered to remove the noise and by retaining the high correlated features
- ▶ A supervisory AI mode is trained using decision tree algorithm to diagnose the disease





- ▶ Our website is designed with HTML/CSS/javascript
- ▶ We display the buttons to select a health issue which lands the user in disease specific form
- ▶ The user feed in the data they collected using over the counter gadgets or laboratories
- ▶ The Flask API collects the form data,

# HEALTH HOMIE USER INTERFACE







# HEALTH HOMIE – ARCHITECTURE



- ▶ FLASK APIs collect the JSON form of input and feeds to python at backend
- ▶ Python hosts the trained model
- ▶ AI model gets the input as features and returns the label as output
- ▶ The model accuracy is about 94% after filtering the data
- ▶ The predicted output is returned in the same way as the input path in the JSON format and is printed in the input form
- ▶ The user can run the algorithm as many times as they wish

## HEALTH HOMIE – TECH SPECS



# HEALTH HOMIE ADVANTAGES

- ▶ People may be unaware in underdeveloped countries w/o means to healthcare
- ▶ Early detection of a disease can lead to prevention of complications with the diseases.



# LESSONS LEARNED

- ▶ Identifying right model
- ▶ Fine tuning for accuracy and performance
- ▶ Filtering out data and learning about each disease and its effects



# USABILITY & ACCESSIBILITY

- ▶ Seamless and user-friendly
- ▶ Website easy to view and navigate
- ▶ Easily accessible online – available only in local server for now
- ▶ Is usable for all ages – children, adults, senior citizens



# FUTURE EXPANSIONS

- ▶ **Future Enhancements**

- ▶ Need to include the level of severity of the health issue identified and to specify a timeline to meet the physician.
- ▶ Entering in their symptoms and determining the disease.
- ▶ Expand to other common diseases
- ▶ Non-profit organizations can call us and we can give out information to them.
- ▶ Chatbots support and automatic calls to healthcare providers



- ▶ More than half of U.S. adults don't know heart disease is leading cause of death, despite 100-year reign | American Heart Association  
<https://www.webmd.com/a-to-z-guides/news/20230719/misdiagnosis-seriously-harms-people-annually-study>

REFERENCES FOR COMMON ISSUE:1

- ▶ More than half of U.S. adults don't know heart disease is leading cause of death, despite 100-year reign | American Heart Association  
<https://www.webmd.com/a-to-z-guides/news/20230719/misdiagnosis-seriously-harms-people-annually-study>
- ▶ Prevalence and factors associated with undiagnosed and uncontrolled heart disease: A study based on self-reported chronic heart disease and symptom-based angina pectoris among middle-aged and older Indian adults  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10306230/#:~:text=The%20prevalence%20of%20undiagnosed%20heart%20disease%20was,females%20and%2049.7%%20among%20male%20older%20adults>
- ▶ Heart Disease Classification (kaggle.com) <https://www.kaggle.com/datasets/abhishek14398/heart-disease-classification/data>

## REFERENCES FOR COMMON ISSUE:2



THANK YOU!

