

# FIT3164 - Final Project presentation

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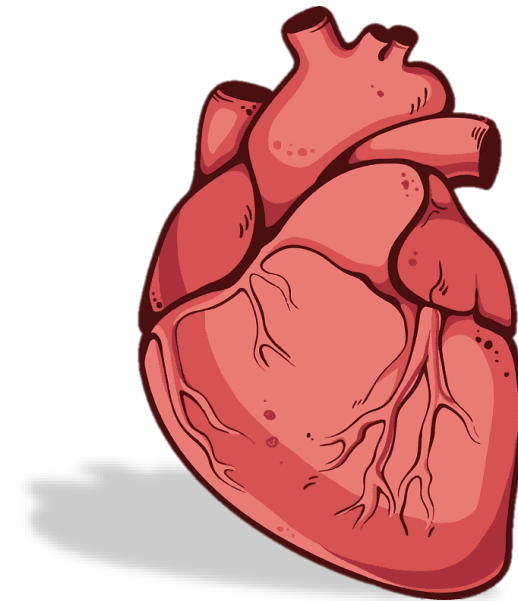
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## Project background

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- The aim of this project is to make users aware of heart disease and the risks associated
- Our product is designed to be the **first step** for users to see if they are at risk
- This is done by providing a prediction of risk based on user inputs
- And with important information around the disease and how to prevent it



# Functionality of product

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- The product was made to be simple, aesthetic and useful
- It takes user input of medical information via a form
- Outputs a prediction of high or low risk of heart disease
- Users will receive tailored information on next steps, based on their result

Input your information below

Typical chest pain\*

Age\*

Dm\*

Ht\*

Tinversion\*

Fbs\*  
  
98-120 if unsure

Esr\*  
  
15-19 if unsure

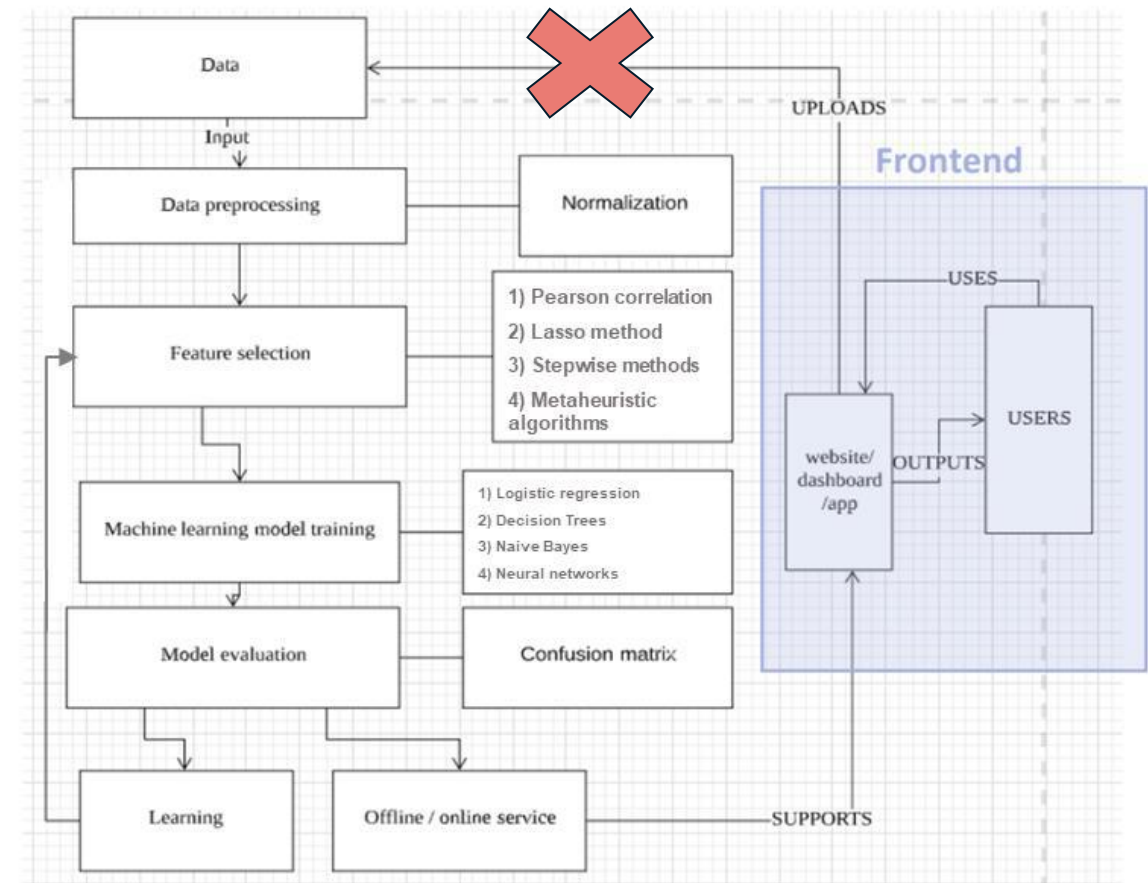
Ef tte\*  
  
47-50 if unsure

Dip\*

Diastolic murmur\*

# How our product is built (Methodology)

- 1 Data pre-processing
- 2 Feature Selection  
→ Top 15 most frequent Features (MS excel)
- 3 Model Training  
+ Voting Classifier
- 4 Website Implementation

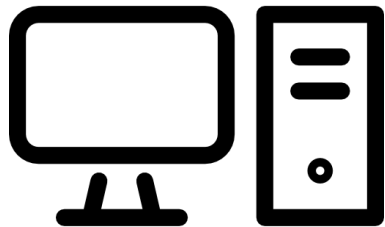


# Software & hardware used

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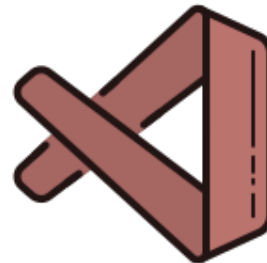
## Hardware

- Personal laptop
- Desktop computer



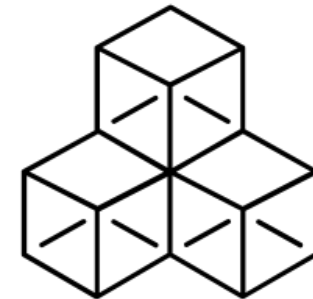
## Software

- Visual Studio Code
  - Python
  - R
  - Git
- PyCharm



## Modules/Packages

- Built-in functions
- GA
- Scikit-learn
  - Pre-processing
  - Classifiers
  - Metrics
- Django



# Project management

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**Scope**

**Team management**

**Risks**



# Project management methodology

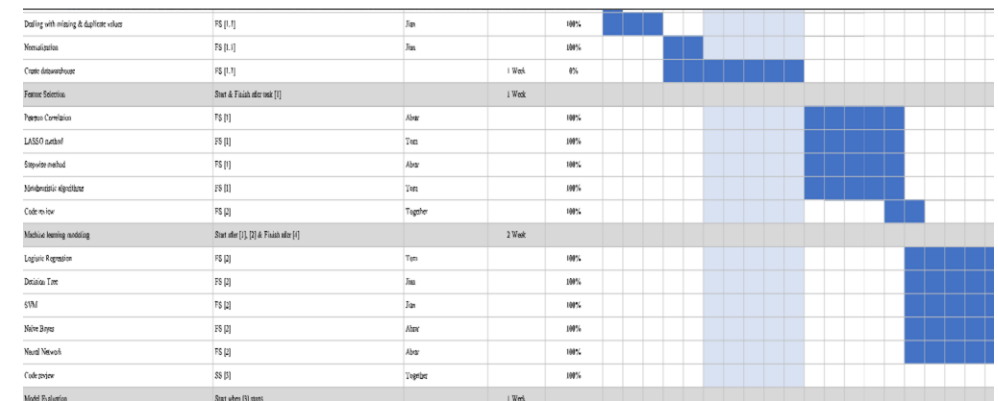
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- Main approach to software development has been **iterative approach**
  - This include an iterative style with feedback loop between process steps
  - Particularly apparent in building predictive models
  - Also apparent in website development



## Project management tools

- File management
  - Github
  - Google Drive
- Schedule management
  - Excel WBS
- Communication
  - Messenger
  - Zoom



**Project outcome**

# Welcome to Hearty!

- User friendly and interactive
- Aesthetically pleasing
- User can input data
- Data input security
- Output prediction and what to do next

[Home](#)[Diagnosis](#)[Get started](#)

## Combining Machine Learning and Medicine

Use our state of the art technology to find out how healthy your heart really is!



Heart disease is one of the largest causes of death around the world. It's now more important than ever to stay on top of your health and get checked out regularly

We can help



Data and healthcare go hand in hand. Through the vast amounts of data and powerful modelling methods available today, there have been significant advances in modern medicine

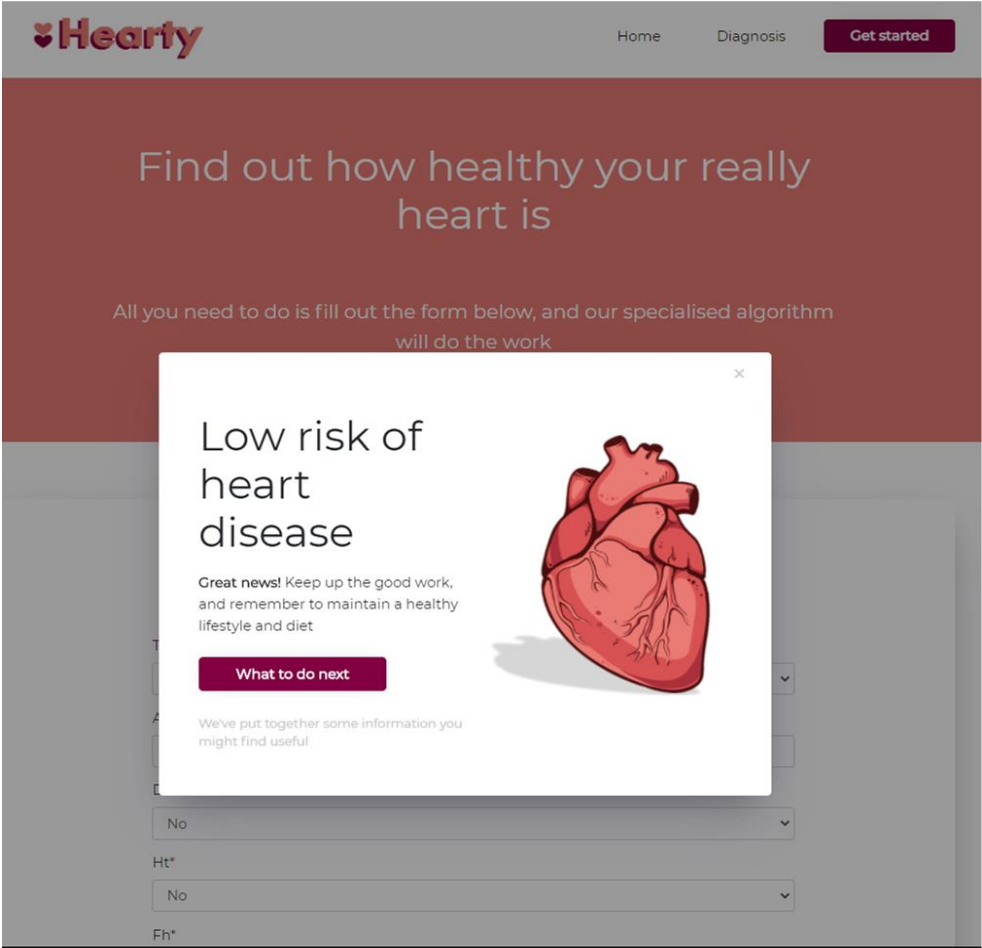
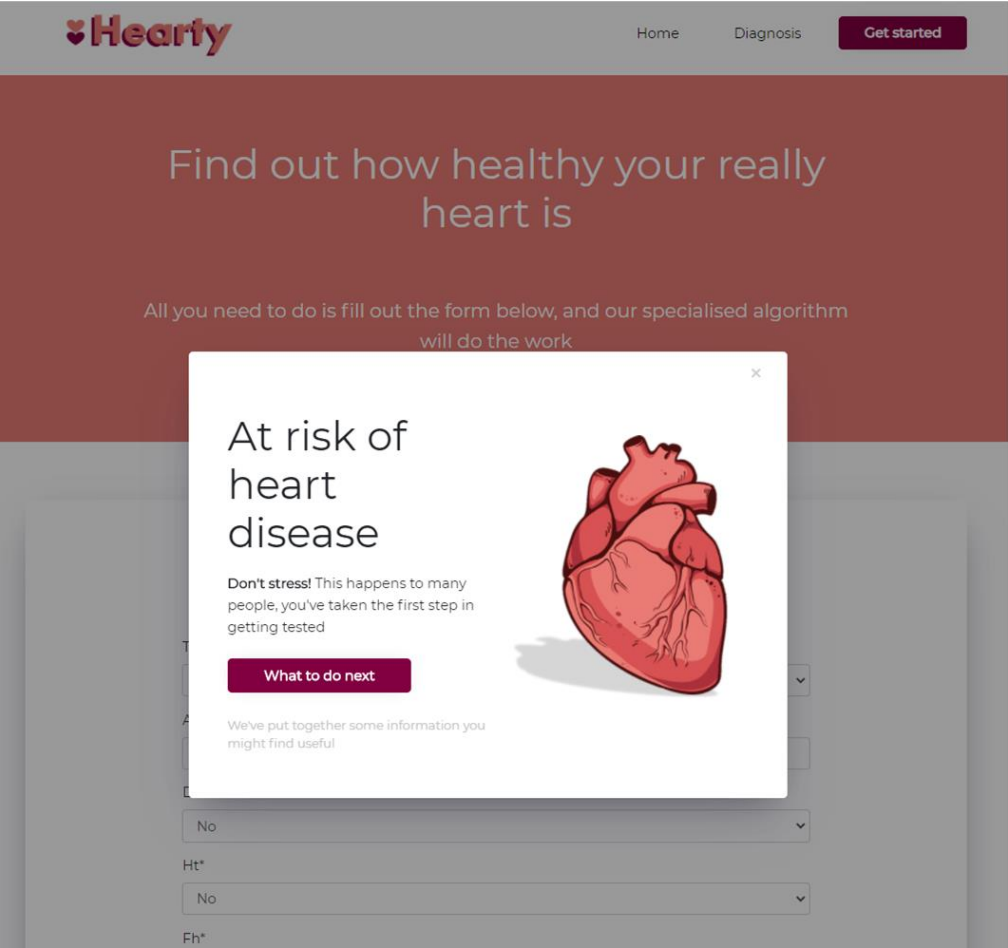
That's good for you



We've combined expertise in machine learning and artificial intelligence. By simply inputting your data, our state of the art modeling systems can accurately predict if you might be at risk

Want to try it out?

# Welcome to Hearty!

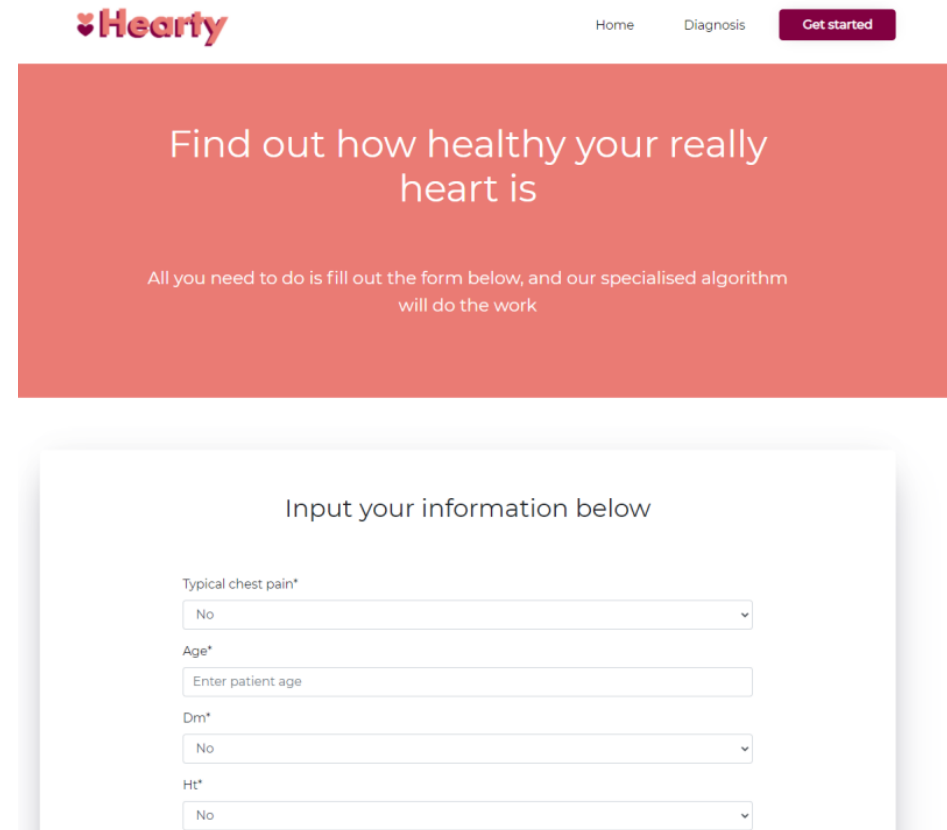


# A change of 'heart'

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We've remove some original features including:

- 'uploading file' functionality
- A 'contact us' page
- Input Data is not used for further training of the model



The screenshot displays the Hearty website's user interface. At the top, the 'Hearty' logo is on the left, and navigation links for 'Home', 'Diagnosis', and a 'Get started' button are on the right. The main content area has a red background with the text 'Find out how healthy your really heart is' and a subtext 'All you need to do is fill out the form below, and our specialised algorithm will do the work'. Below this is a white form titled 'Input your information below' containing four fields: 'Typical chest pain\*' (a dropdown menu with 'No' selected), 'Age\*' (a text input field with the placeholder 'Enter patient age'), 'Dm\*' (a dropdown menu with 'No' selected), and 'Ht\*' (a dropdown menu with 'No' selected).

## Limitations of product

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1

Not available if not connected to the Internet

2

Does NOT diagnose someone, ONLY predict how likely they have a heart disease

3

Currently, user needs to know all values to get the most accurate prediction

## Test summary

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| Test ID | Priority | Description   | Expected output                                      | Status  |
|---------|----------|---|--|---------|
| 1       | High     | Inputting characters & negative number should not be accepted | An error pops up stating to input correct input type | SUCCESS |
| 2       | High     | Accessible using the Internet                                 | All page scan be seen on browser                     | SUCCESS |
| 3       | Low      | Not available / accessible when offline                       | Error page   | SUCCESS |



# Conclusion

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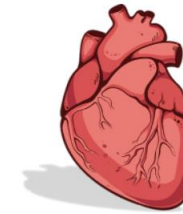
- Overall very content with the project
- We believe Hearty to be a success with what we initially set out to do for this unit
- All planning and processes prepared since start of the year have been essential
- We look forward to sharing the project with the world



[Home](#)

[Diagnosis](#)

[Get started](#)



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**Thank you**