Breast Cancer Detection

Project Team

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Contents

Introduction

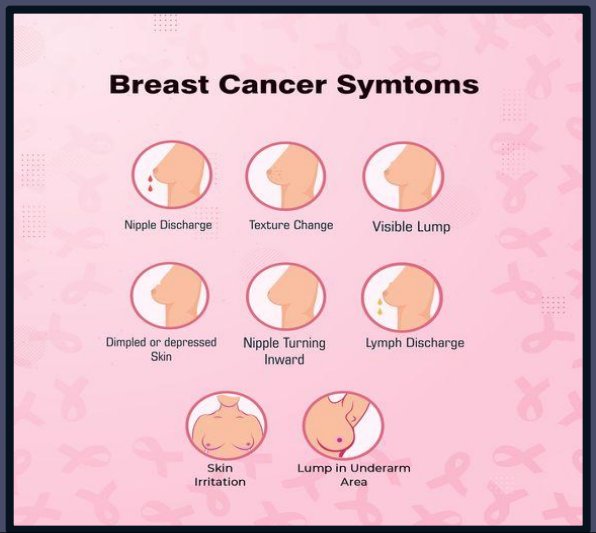
- Breast cancer is a disease in which abnormal breast cells grow out of control and form tumors. If left untreated, tumors can spread throughout the body and become fatal.
- Breast Cancers in women occur with no identifiable risk factors other than sex and age.
- Breast Cancer occurs in every country in the world.
- There are several factors contributing to the spread of Breast Cancer

FAQs

These FAQs provide a starting point for understanding breast cancer

Symptoms

Symptoms of breast cancer can include:

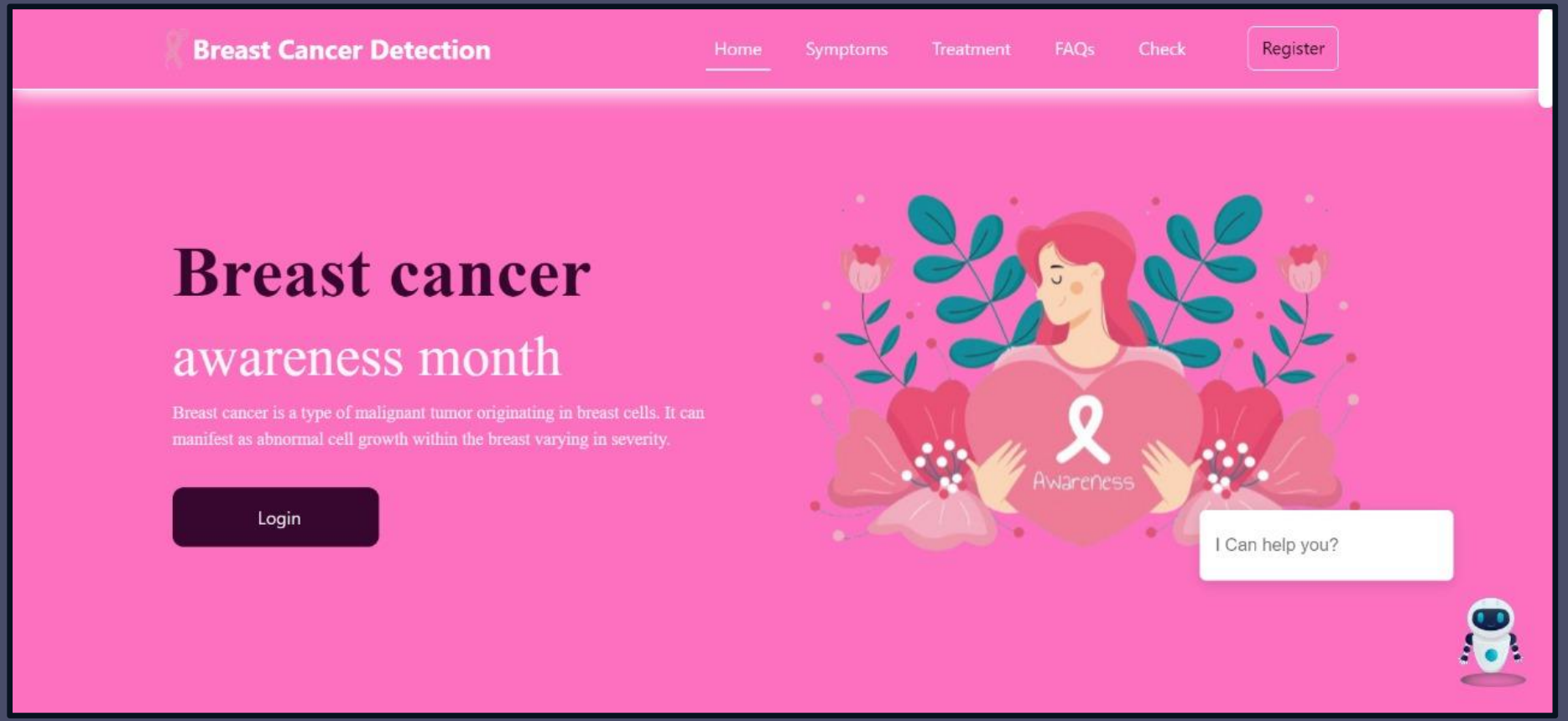


Project Idea

- Web application using deep learning techniques

- We enter the image from the user for deep learning Model as a input , and it classifies the image if the user has Breast Cancer or not “ it's Benign or Malignant ”

Home Screen


Breast Cancer Detection
Home
Symptoms
Treatment
FAQs
Check
Register
Breast cancer
awareness month
Breast cancer is a type of malignant tumor originating in breast cells. It can manifest as abnormal cell growth within the breast varying in severity.
Login
Awareness
I Can help you?

Symptoms Screen

Breast Cancer Detection

Home | Symptoms | Treatment | FAQs | Check | Register

check out Symptoms and Diagnosis of breast Cancer


Lump


breast size and shape


breast size and shape


change in skin texture


changes in color


changes in nipples


discharge from nipple

Symptoms of breast cancer

Tumor/lump/flax in the breast or underarm. Changing the shape or size of the breasts. Nipple shape or color change: crusts, limping, bounce, excretion. Altering in the form of breast skin: protrusion, peel, orange peel. Not ordinary pains.

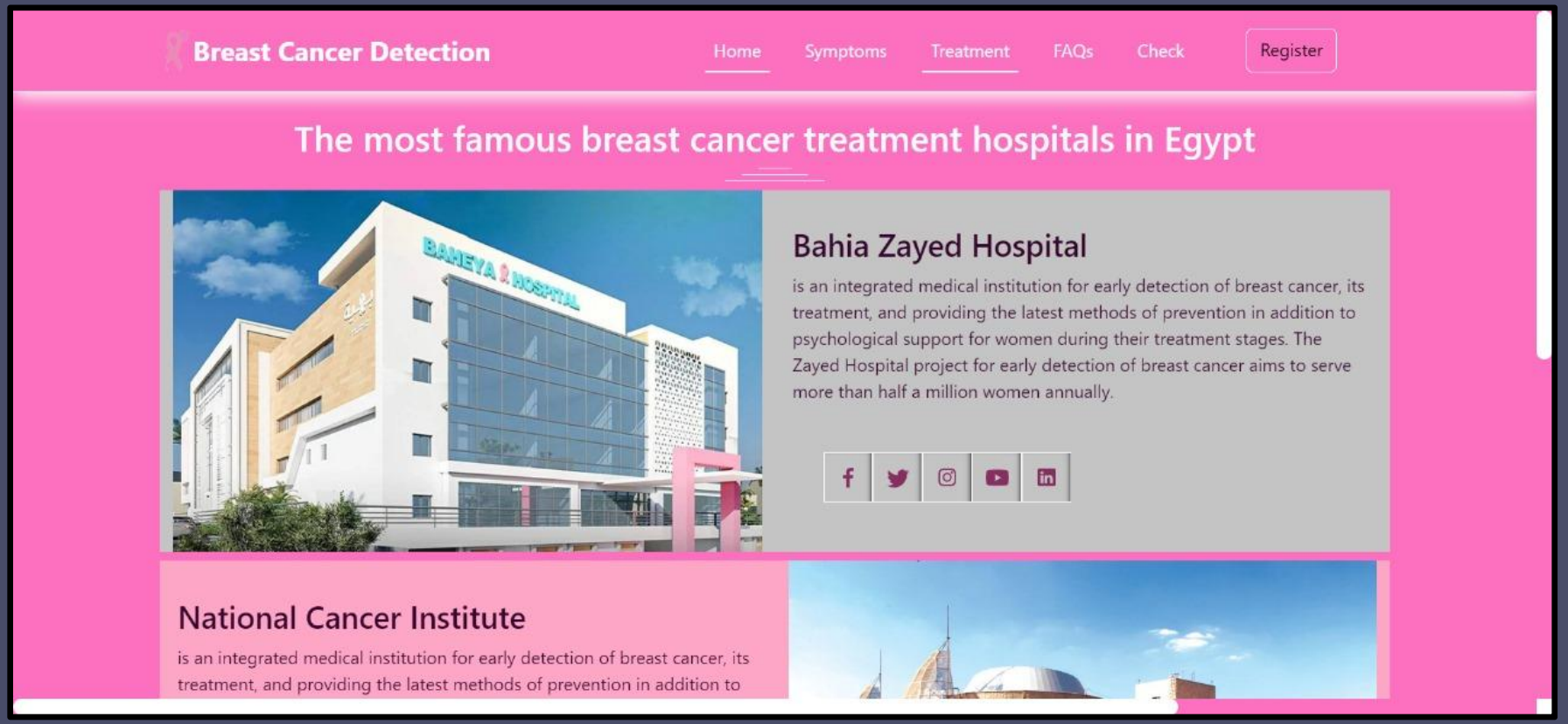
Risk factors

Aging. Genetic factors. Sick history of (mother, sister, aunt, and father). Personal history. Early puberty (13 years) and late menopause (55 years). Exposure to radiation treatment (in the case of illnesses such as lymphoma). Some merry breast disease like LCIS or ADH.

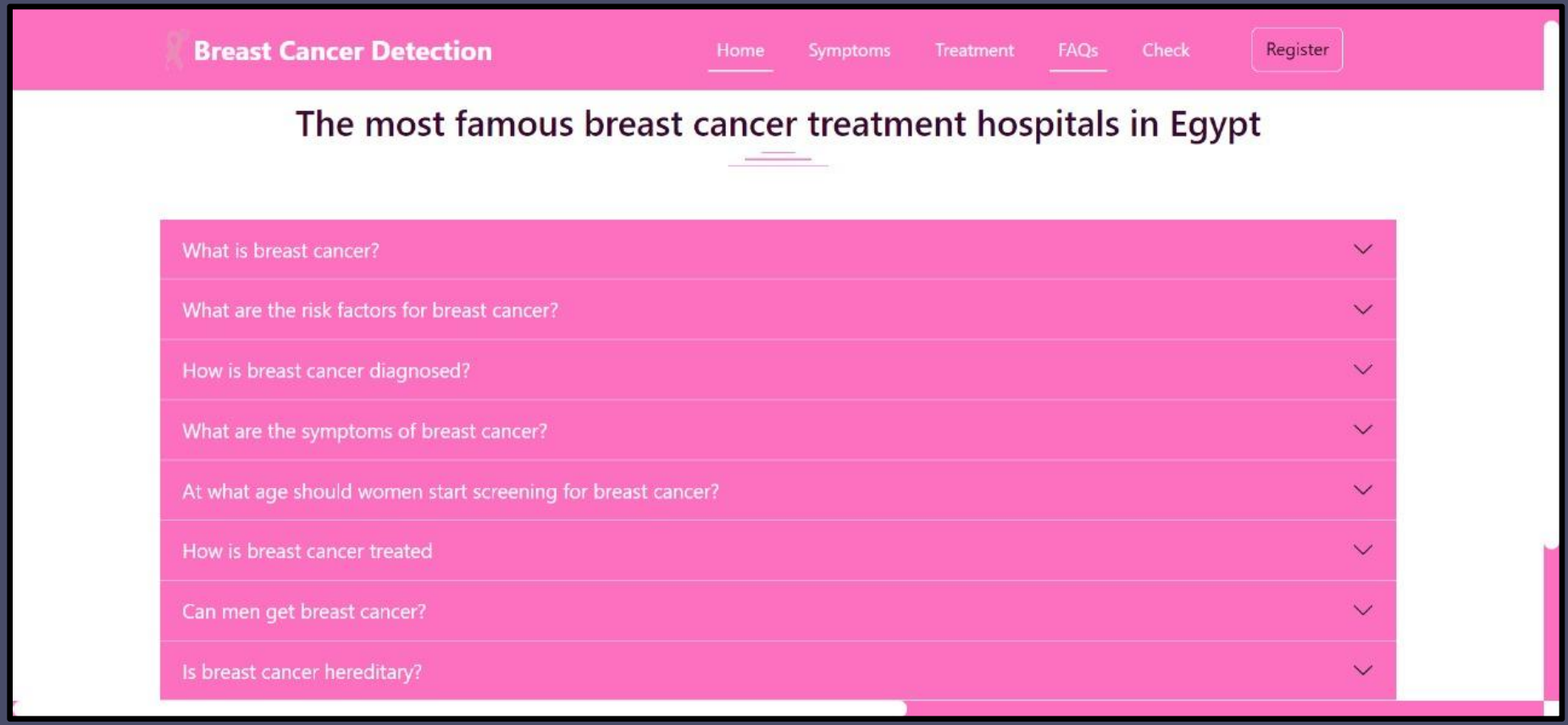
Early detection of breast cancer

Self-detection week through cycle. The rotational mammogram is the most accurate. From the age of 40. From the age 35, if there is a history of illness in the family, At any age if there are symptoms.

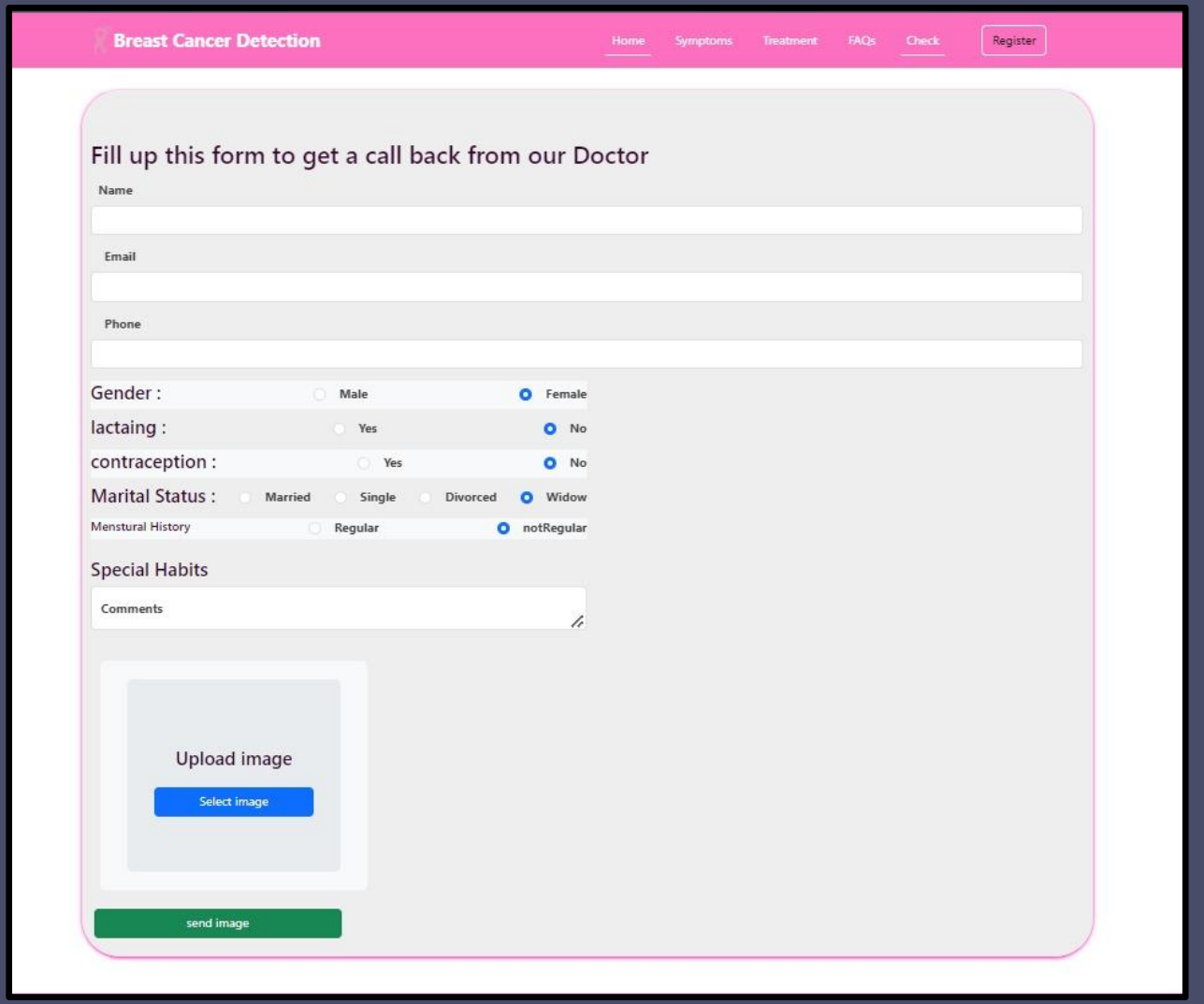
Treatment Screen



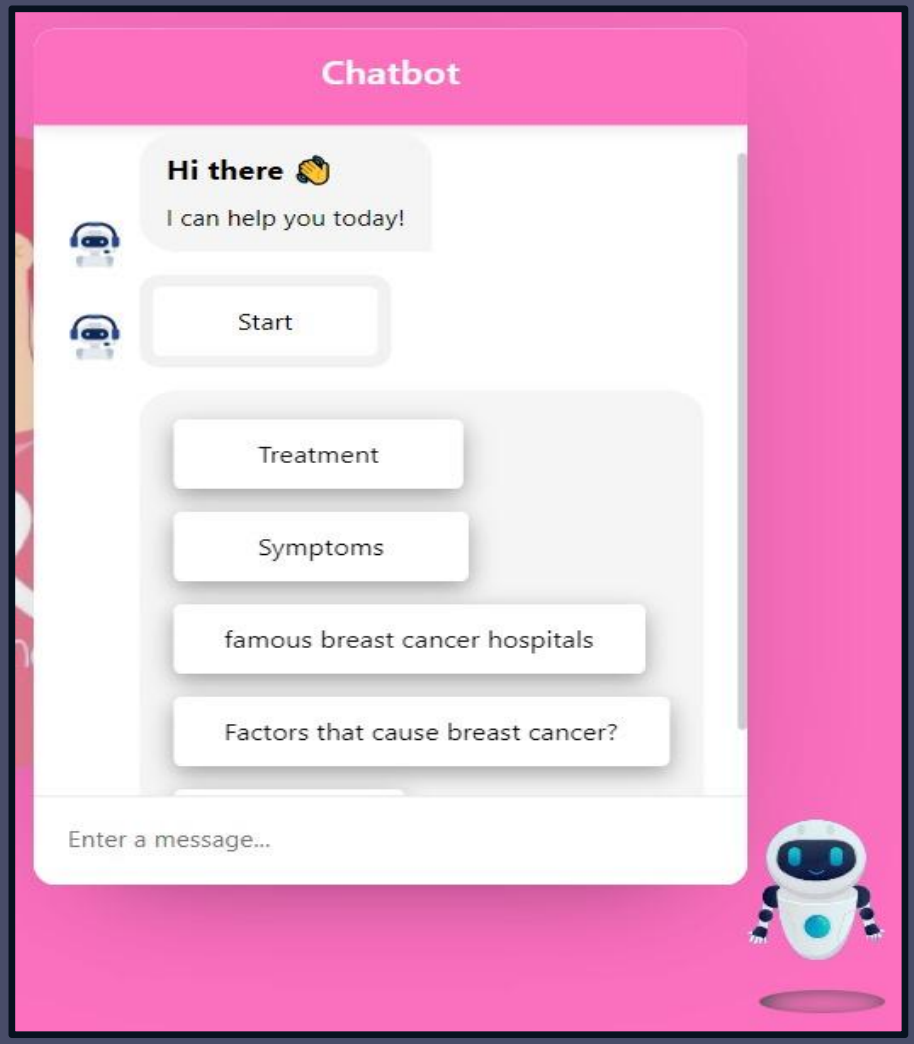
FAQs Screen


Breast Cancer Detection
Home
Symptoms
Treatment
FAQs
Check
Register
The most famous breast cancer treatment hospitals in Egypt
What is breast cancer?
What are the risk factors for breast cancer?
How is breast cancer diagnosed?
What are the symptoms of breast cancer?
At what age should women start screening for breast cancer?
How is breast cancer treated
Can men get breast cancer?
Is breast cancer hereditary?

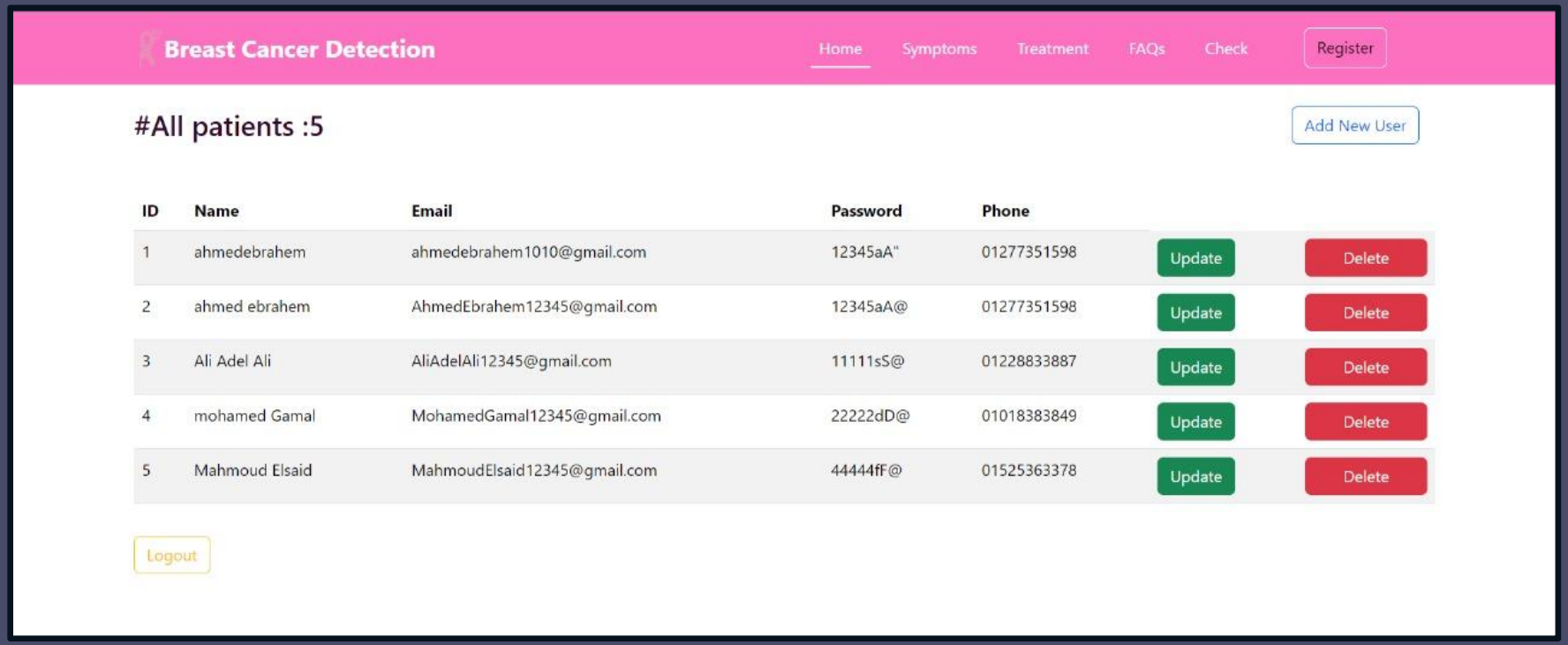
Check Screen



- Chat Bot (New Addition)



Dashboard Screen



Dataset

About Dataset

Name : Ultrasound Breast Images for Breast Cancer

Publisher : Vuppala Adithya

Published in :
Fri _Apr _10_ 2019

This dataset consists of ultrasound images related to benign and malignant breast cancers.

Ultrasound Breast Classification(2 directories)

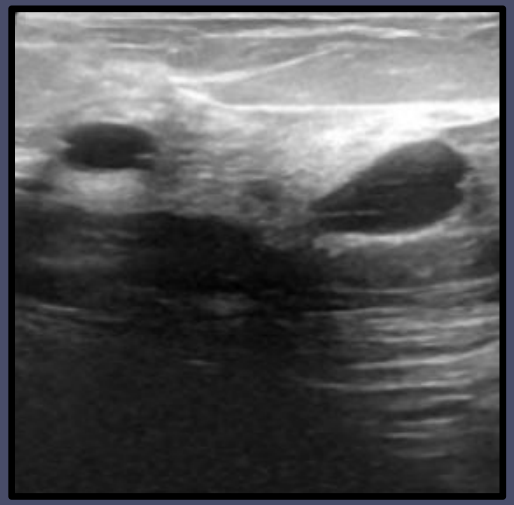
About this directory

The Train and Val files consists of two classes, namely Benign and Malignant tumors.

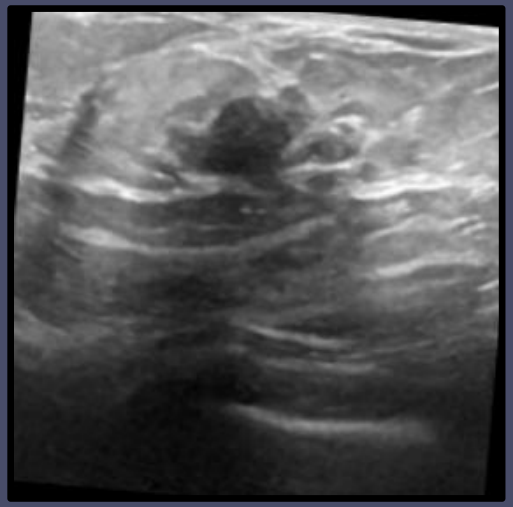
Downloads

1578
in the last 30 days

- **Our data-set Contains of Ultrasound Images of Breast for cancer detection that are split into train, val(Bengin,Maliganat). That all images are size of (592 MB) . 9016 files, Benign(4074 files) , Malignant(4042 files).**



Bengin

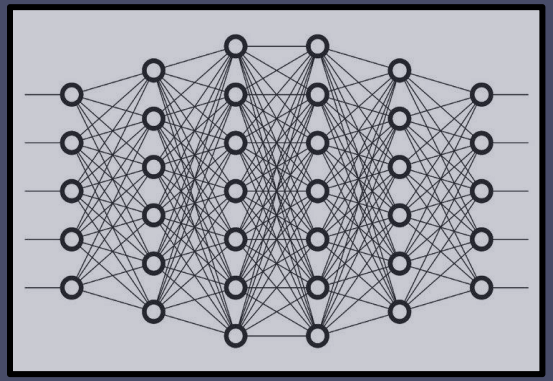


Malignant

DL Model

Why CNN ?

- CNNs do not require human supervision for the task of identifying important features.

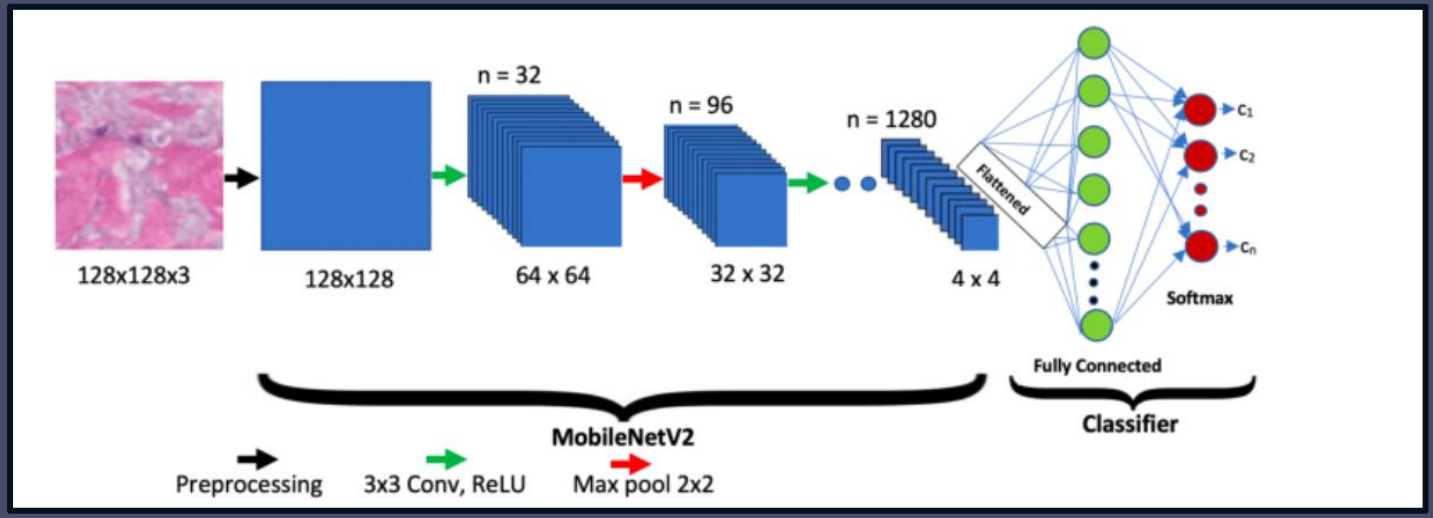


- They are very accurate at image recognition and classification.

- Convolutional neural networks also minimize computation in comparison with a regular neural network

MobileNetV2

MobileNetV2 is a neural network architecture designed for mobile and embedded vision applications. It is a variant of the MobileNet architecture, specifically optimized for efficiency and speed while maintaining high accuracy in tasks like image classification and object detection.

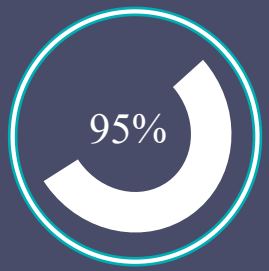


DL Model

- Breast Cancer Detection model

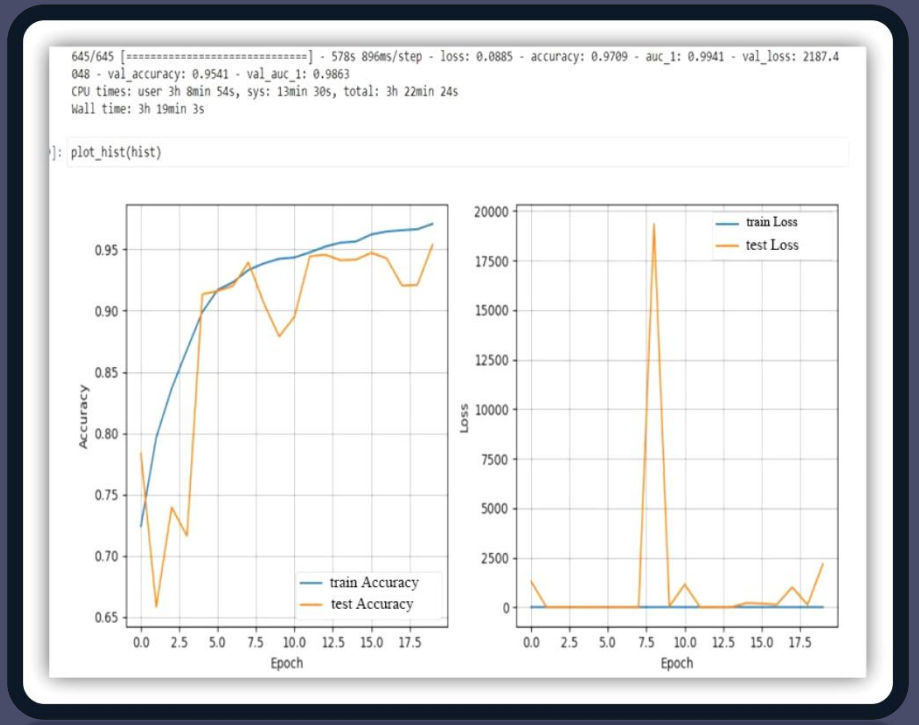
```
Model: "sequential_1"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 mobilenetv2_1.00_224 (Funct  (None, 7, 7, 1280)       2257984
 ional)

 global_average_pooling2d_1   (None, 1280)             0
 (GlobalAveragePooling2D)

 dropout_2 (Dropout)         (None, 1280)              0

 flatten_1 (Flatten)         (None, 1280)              0

 dense_2 (Dense)             (None, 32)                40992

 batch_normalization_1 (Batc  (None, 32)               128
 hNormalization)

 dropout_3 (Dropout)         (None, 32)                0

 dense_3 (Dense)             (None, 2)                 66

=================================================================
Total params: 2,299,170
Trainable params: 41,122
Non-trainable params: 2,258,048
```

Accuracy



Train Accuracy

Test Accuracy



Survey

In the Breast Cancer detection we used MobileNetV2 model because:

Model	Train Accuracy	Test Accuracy	# Epochs
VGG16	54%	52%	10
VGG16	65%	63%	20
VGG16	78%	76%	40

Future Work

We Hope

- Improved Model Performance
  - Improving User Experience
    - Enhanced User Interaction
      - Uplod It in Play Store

“ A GOAL WITHOUT A Plan IS JUST A WISH ”

- Scan QR Code

THANKS