

## Application Building

### Python code

Team ID	PNT2022TMID51209
Project Name	Project - Fertilizers Recommendation System For Disease Prediction

```
import os

from flask import Flask, redirect, render_template, request

from PIL import Image

import torchvision.transforms.functional as TF

import CNN

import numpy as np

import torch

import pandas as pd

import torch.nn as nn


disease_info = pd.read_csv('disease_info.csv' , encoding='cp1252')
supplement_info = pd.read_csv('supplement_info.csv',encoding='cp1252')


model = CNN.CNN(39)
model = nn.DataParallel(model)
model.load_state_dict(torch.load(r"..../Model/model.pth" , map_location=torch.device("cpu")))
model.eval()


def prediction(image_path):
    image = Image.open(image_path)
    image = image.resize((224, 224))
    input_data = TF.to_tensor(image)
    input_data = input_data.view((-1, 3, 224, 224))
    output = model(input_data)
    output = output.detach().numpy()
```

```
index = np.argmax(output)

return index
```

```
app = Flask(__name__)
```

```
@app.route('/')
def home_page():
    return render_template('home.html')
```

```
@app.route('/index')
def ai_engine_page():
    return render_template('index.html')
```

```
@app.route('/mobile-device')
def mobile_device_detected_page():
    return render_template('mobile-device.html')
```

```
@app.route('/submit', methods=['GET', 'POST'])
def submit():
    if request.method == 'POST':
        image = request.files['image']
        filename = image.filename
        file_path = os.path.join('static/uploads', filename)
        image.save(file_path)
        print(file_path)
        pred = prediction(file_path)
        title = disease_info['disease_name'][pred]
        description = disease_info['description'][pred]
        prevent = disease_info['Possible Steps'][pred]
        image_url = disease_info['image_url'][pred]
```

```

supplement_name = supplement_info['supplement name'][pred]
supplement_image_url = supplement_info['supplement image'][pred]
supplement_buy_link = supplement_info['buy link'][pred]

return render_template('submit.html' , title = title , desc = description , prevent = prevent ,
                        image_url = image_url , pred = pred ,sname = supplement_name , simage =
supplement_image_url , buy_link = supplement_buy_link)

@app.route('/market', methods=['GET', 'POST'])
def market():

    return render_template('market.html', supplement_image = list(supplement_info['supplement
image']),

                        supplement_name = list(supplement_info['supplement name']), disease =
list(disease_info['disease_name']), buy = list(supplement_info['buy link']))

if __name__ == '__main__':
    app.run(debug=True)

```