Wtech - Python ile Yapay Zeka

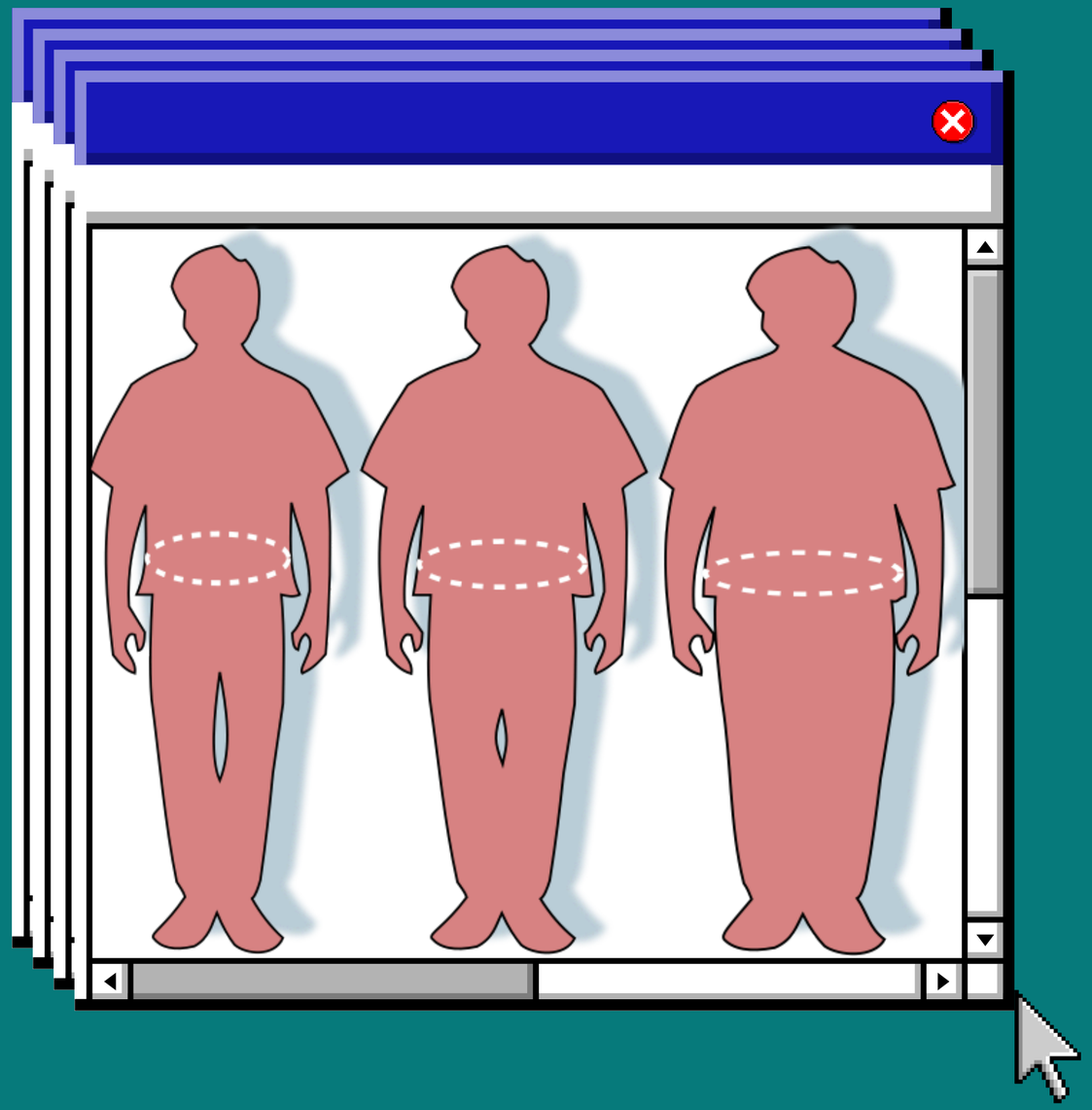
Beyza Nur Sarıkaya

Obezite Seviyesini Tahminleme Çalışması

11:11PM

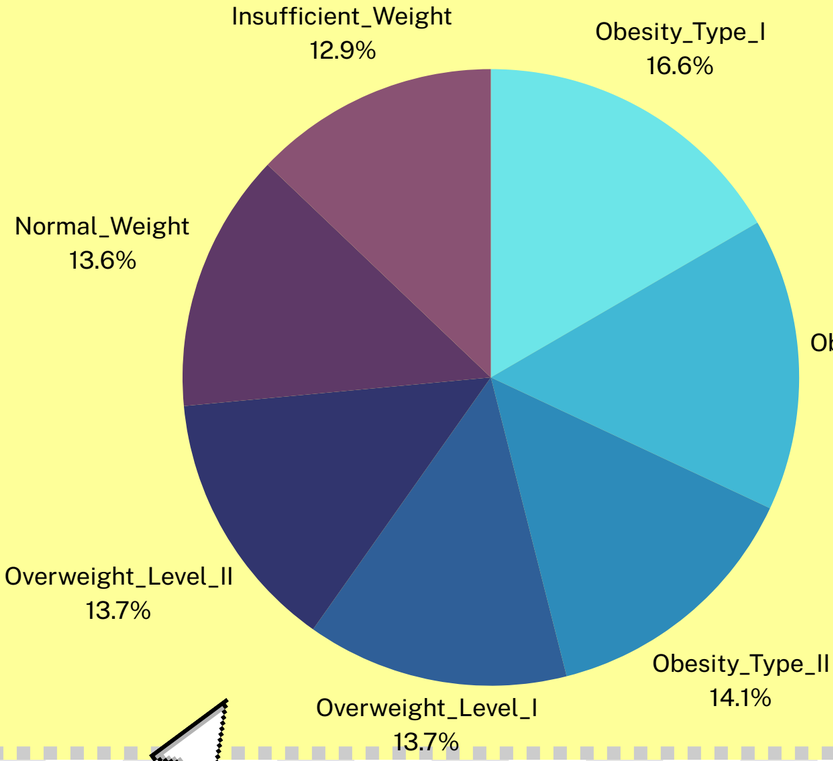
Veri Kaynağı: Obesity Levels (https://www.kaggle.com/datasets/fatemehmehrparvar/obesity-levels/data)

Obesity_Type_III
Obesity_Type_II
Obesity_Type_I
Overweight_Level_II
Overweight_Level_I
Normal_Weight
Insufficient_Weight



Veri İncelemesi

```
RangeIndex: 2111 entries, 0 to 2110
Data columns (total 17 columns):
 #   Column                          Non-Null Count  Dtype
---  ------                          --------------  -----
 0   Age                             2111 non-null   float64
 1   Gender                          2111 non-null   object
 2   Height                          2111 non-null   float64
 3   Weight                          2111 non-null   float64
 4   CALC                            2111 non-null   object
 5   FAVC                            2111 non-null   object
 6   FCVC                            2111 non-null   float64
 7   NCP                             2111 non-null   float64
 8   SCC                             2111 non-null   object
 9   SMOKE                           2111 non-null   object
 10  CH2O                            2111 non-null   float64
 11  family_history_with_overweight  2111 non-null   object
 12  FAF                             2111 non-null   float64
 13  TUE                             2111 non-null   float64
 14  CAEC                            2111 non-null   object
 15  MTRANS                          2111 non-null   object
 16  NObeyesdad                      2111 non-null   object
dtypes: float64(8), object(9)
memory usage: 280.5+ KB
```



Null Değer Yok.

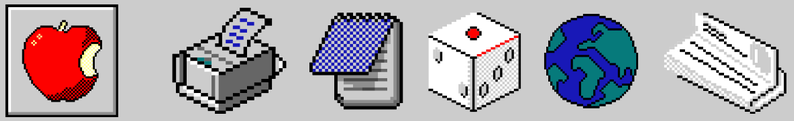
Artificial Neural Network

```
input_dim: 16
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 dense (Dense)               (None, 64)                1088

 gizli_katman1 (Dense)       (None, 32)                2080

 gizli_katman2 (Dense)       (None, 16)                528

 dense_1 (Dense)             (None, 7)                 119

=================================================================
Total params: 3815 (14.90 KB)
Trainable params: 3815 (14.90 KB)
Non-trainable params: 0 (0.00 Byte)
_________________________________________________________________
Epoch 1/50
169/169 [==============================] - 5s 12ms/step - loss: 1.9315 - accuracy: 0.2583 - val_loss: 1.6211 - val_accuracy: 0.3688
Epoch 2/50
169/169 [==============================] - 1s 7ms/step - loss: 1.4212 - accuracy: 0.3886 - val_loss: 1.3189 - val_accuracy: 0.3853
Epoch 3/50
169/169 [==============================] - 2s 10ms/step - loss: 1.2429 - accuracy: 0.4579 - val_loss: 1.1980 - val_accuracy: 0.4634
Epoch 4/50
...
Epoch 49/50
169/169 [==============================] - 2s 9ms/step - loss: 0.3685 - accuracy: 0.8578 - val_loss: 0.3793 - val_accuracy: 0.8416
Epoch 50/50
169/169 [==============================] - 1s 8ms/step - loss: 0.3626 - accuracy: 0.8560 - val_loss: 0.4745 - val_accuracy: 0.8085
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
<keras.src.callbacks.History at 0x1ed9a6495d0>
```

```
14/14 [==============================] - 0s 2ms/step - loss: 0.4079 - accuracy: 0.8298

[0.4078839421272278, 0.8297872543334961]
```



POST /predict_obesity/ Predict Obesity

Parameters

Cancel Reset

No parameters

Request body required

application/json

```
{
  "Age": 26,
  "Gender": "Female",
  "Height": 1.52,
  "Weight": 87,
  "CALC": "Sometimes",
  "FAVC": "no",
  "FCVC": 2,
  "NCP": 1,
  "SCC": "no",
  "SMOKE": "no",
  "CH20": 3,
  "family_history_with_overweight": "yes",
  "FAF": 1,
  "TUE": 0,
  "CAEC": "Sometimes",
  "MTRANS": "Public_Transportation"
}
```

Execute

Request URL

```
http://127.0.0.1:8000/predict_obesity/
```

Server response

Code	Details
200	Response body

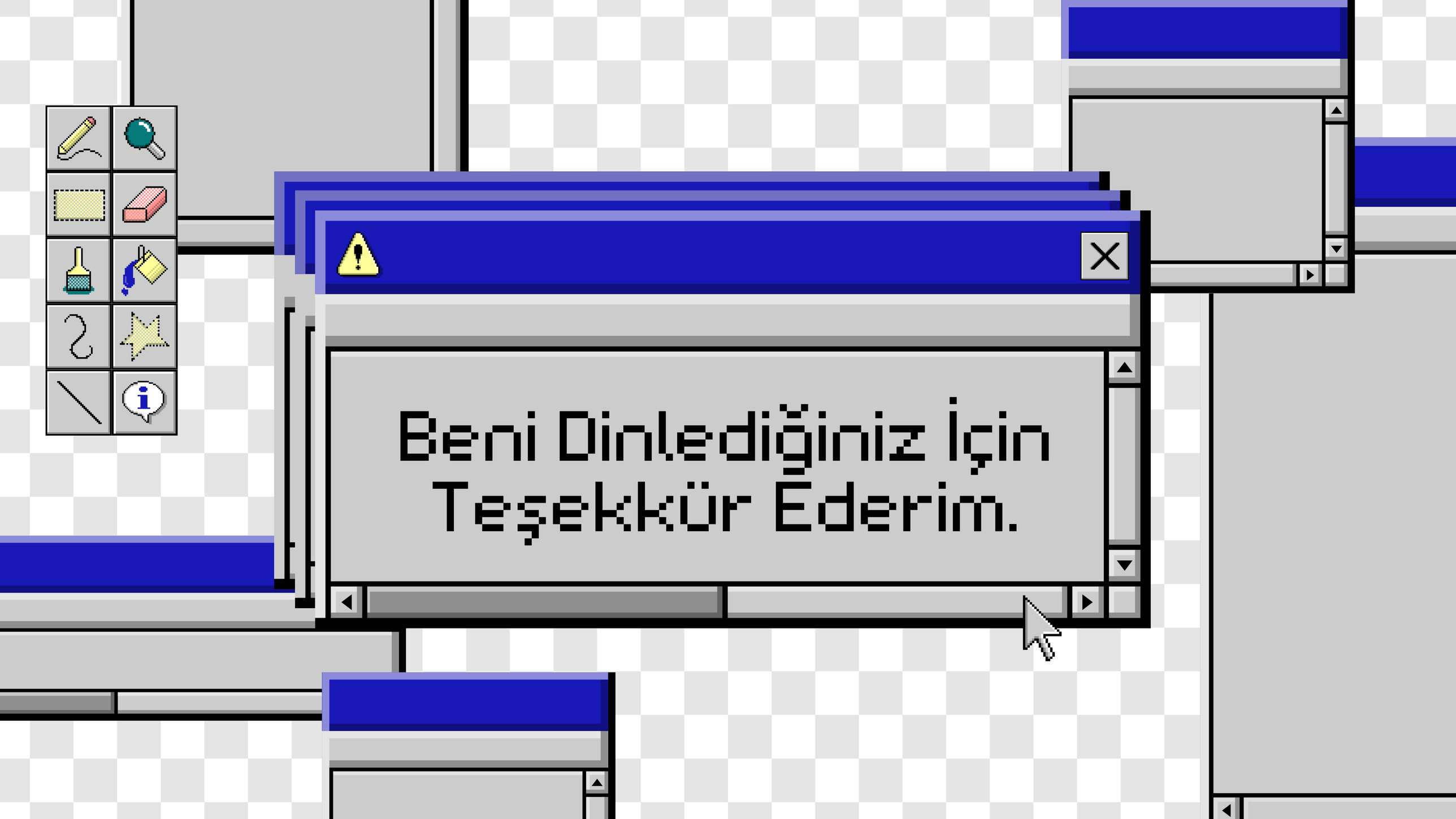
```
{
  "Nobeyesdad": "Obesity_Type_I"
}
```

Response headers

```
content-length: 31
content-type: application/json
date: Thu,25 Apr 2024 07:36:11 GMT
server: uvicorn
```

Responses

```
INFO:     127.0.0.1:50934 - "GET /openapi.json HTTP/1.1" 200 OK
2024-04-25 10:36:12.469953: I tensorflow/core/platform/cpu_feature_guard.cc:182] This TensorFlow binary is optimized to use available CPU instructions in performance-crit
ical operations.
To enable the following instructions: SSE SSE2 SSE3 SSE4.1 SSE4.2 AVX AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compiler flags.
1/1 [==============================] - 0s 440ms/step
[[4.8454581e-19 3.5120152e-08 6.5042388e-01 3.2486013e-01 1.0816744e-03
  2.3385900e-04 2.3400379e-02]]
[4.8454581e-19 3.5120152e-08 6.5042388e-01 3.2486013e-01 1.0816744e-03
 2.3385900e-04 2.3400379e-02]
2
INFO:     127.0.0.1:50953 - "POST /predict_obesity/ HTTP/1.1" 200 OK
```


Beni Dinlediğiniz İçin
Teşekkür Ederim.