```
pip install gradio
```

```
Collecting semantic-version~=2.0 (from gradio)
  Downloading semantic_version-2.10.0-py2.py3-none-any.whl.metadata (9.7 kB)
Collecting starlette<1.0,>=0.40.0 (from gradio)
  Downloading starlette-0.46.2-py3-none-any.whl.metadata (6.2 kB)
Collecting tomlkit<0.14.0,>=0.12.0 (from gradio)
  Downloading tomlkit-0.13.2-py3-none-any.whl.metadata (2.7 kB)
Requirement already satisfied: typer<1.0,>=0.12 in /usr/local/lib/python3.11/dist-packages (from gra
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Collecting uvicorn>=0.14.0 (from gradio)
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Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from gradio-client
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Requirement already satisfied: certifi in /usr/local/lib/python3.11/dist-packages (from httpx>=0.24.
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx>
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Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas<
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from panda
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Downloading fastapi-0.115.12-py3-none-any.whl (95 kB)
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Downloading python_multipart-0.0.20-py3-none-any.whl (24 kB)
Downloading ruff-0.11.10-py3-none-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (11.6 MB)
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Downloading semantic_version-2.10.0-py2.py3-none-any.whl (15 kB)
Downloading starlette-0.46.2-py3-none-any.whl (72 kB)
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Downloading ffmpy-0.5.0-py3-none-any.whl (6.0 kB)
Downloading pydub-0.25.1-py2.py3-none-any.whl (32 kB)
Installing collected packages: pydub, uvicorn, tomlkit, semantic-version, ruff, python-multipart, gr
Successfully installed aiofiles-24.1.0 fastapi-0.115.12 ffmpy-0.5.0 gradio-5.29.1 gradio-client-1.10
```

```
import pandas as pd
import matplotlib.pyplot as plt
```

```
import seaborn as sns
import gradio as gr
import numpy as np
from sklearn.datasets import load_diabetes
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report


raw = load_diabetes()
X = pd.DataFrame(raw.data, columns=raw.feature_names)
y = (raw.target > 140).astype(int)  # Turn it into a binary problem

df = X.copy()
df["Disease"] = y


print("🔹 df.head():")
print(df.head())


print("\n🔹 Before Scaling:")
print(df.describe())

scaler = StandardScaler()
X_scaled = scaler.fit_transform(X)

print("\n🔹 After Scaling:")
print(pd.DataFrame(X_scaled, columns=X.columns).describe())  # Screenshot this


plt.figure(figsize=(10, 6))
sns.heatmap(df.corr(), annot=True, cmap="coolwarm")
plt.title("Correlation Heatmap")
plt.tight_layout()
plt.savefig("correlation_heatmap.png")
plt.show()  # Screenshot this


X_train, X_test, y_train, y_test = train_test_split(X_scaled, y, test_size=0.2, random_state=42)
model = RandomForestClassifier()
model.fit(X_train, y_train)


print("\n🔹 Model Training Report:")
y_pred = model.predict(X_test)
print(classification_report(y_test, y_pred))


def predict_disease(*inputs):
    data = np.array(inputs).reshape(1, -1)
    scaled = scaler.transform(data)
    pred = model.predict(scaled)[0]
    return "🟢 No Disease Detected" if pred == 0 else "🔴 Disease Risk Detected"


input_components = [gr.Number(label=col) for col in X.columns]
```

```
    with gr.Blocks() as demo:
        gr.Markdown("## 🩺 AI-Powered Disease Predictor")
        gr.Markdown("Enter patient test data to predict disease risk.")
        iface = gr.Interface(fn=predict_disease, inputs=input_components, outputs="text")
        iface.render()


    demo.launch(debug=False)
```

◆ df.head():

```
        age       sex       bmi        bp        s1        s2        s3  \
0  0.038076  0.050680  0.061696  0.021872 -0.044223 -0.034821 -0.043401
1 -0.001882 -0.044642 -0.051474 -0.026328 -0.008449 -0.019163  0.074412
2  0.085299  0.050680  0.044451 -0.005670 -0.045599 -0.034194 -0.032356
3 -0.089063 -0.044642 -0.011595 -0.036656  0.012191  0.024991 -0.036038
4  0.005383 -0.044642 -0.036385  0.021872  0.003935  0.015596  0.008142

         s4        s5        s6  Disease
0 -0.002592  0.019907 -0.017646        1
1 -0.039493 -0.068332 -0.092204        0
2 -0.002592  0.002861 -0.025930        1
3  0.034309  0.022688 -0.009362        1
4 -0.002592 -0.031988 -0.046641        0
```

◆ Before Scaling:

```
                age           sex           bmi            bp            s1  \
count  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02
mean  -2.511817e-19  1.230790e-17 -2.245564e-16 -4.797570e-17 -1.381499e-17
std    4.761905e-02  4.761905e-02  4.761905e-02  4.761905e-02  4.761905e-02
min   -1.072256e-01 -4.464164e-02 -9.027530e-02 -1.123988e-01 -1.267807e-01
25%   -3.729927e-02 -4.464164e-02 -3.422907e-02 -3.665608e-02 -3.424784e-02
50%    5.383060e-03 -4.464164e-02 -7.283766e-03 -5.670422e-03 -4.320866e-03
75%    3.807591e-02  5.068012e-02  3.124802e-02  3.564379e-02  2.835801e-02
max    1.107267e-01  5.068012e-02  1.705552e-01  1.320436e-01  1.539137e-01

                s2            s3            s4            s5            s6  \
count  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02
mean   3.918434e-17 -5.777179e-18 -9.042540e-18  9.293722e-17  1.130318e-17
std    4.761905e-02  4.761905e-02  4.761905e-02  4.761905e-02  4.761905e-02
min   -1.156131e-01 -1.023071e-01 -7.639450e-02 -1.260971e-01 -1.377672e-01
25%   -3.035840e-02 -3.511716e-02 -3.949338e-02 -3.324559e-02 -3.317903e-02
50%   -3.819065e-03 -6.584468e-03 -2.592262e-03 -1.947171e-03 -1.077698e-03
75%    2.984439e-02  2.931150e-02  3.430886e-02  3.243232e-02  2.791705e-02
max    1.987880e-01  1.811791e-01  1.852344e-01  1.335973e-01  1.356118e-01

          Disease
count  442.000000
mean     0.500000
std      0.500567
min      0.000000
25%      0.000000
50%      0.500000
75%      1.000000
max      1.000000
```

◆ After Scaling:

```
                age           sex           bmi            bp            s1  \
count  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02  4.420000e+02
mean  -8.037814e-18  2.290777e-16  2.009453e-17 -1.607563e-17  8.037814e-18
std    1.001133e+00  1.001133e+00  1.001133e+00  1.001133e+00  1.001133e+00
min   -2.254290e+00 -9.385367e-01 -1.897929e+00 -2.363050e+00 -2.665411e+00
25%   -7.841722e-01 -9.385367e-01 -7.196249e-01 -7.706500e-01 -7.200196e-01
50%    1.131724e-01 -9.385367e-01 -1.531324e-01 -1.192138e-01 -9.084100e-02
75%    8.005001e-01  1.065488e+00  6.569519e-01  7.493678e-01  5.961931e-01
max    2.327895e+00  1.065488e+00  3.585718e+00  2.776058e+00  3.235851e+00

                s2            s3            s4          s5            s6
count  4.420000e+02  4.420000e+02  4.420000e+02  442.000000  4.420000e+02
mean   4.018907e-18 -4.018907e-18  2.330966e-16    0.000000 -4.018907e-17
std    1.001133e+00  1.001133e+00  1.001133e+00    1.001133  1.001133e+00
min   -2.430626e+00 -2.150883e+00 -1.606102e+00   -2.651040 -2.896390e+00
25%   -6.382488e-01 -7.382960e-01 -8.303008e-01   -0.698949 -6.975491e-01
50%   -8.029125e-02 -1.384305e-01 -5.449919e-02   -0.040937 -2.265729e-02
75%    6.274425e-01  6.162390e-01  7.213025e-01    0.681851  5.869224e-01
```