**AIR QUALITY MONITORING USING IOT**

# TEAM MEMBER

**511821106001:AHMED SHARIFF A**

PHASE 3 PROJECT

Name of the project:

AIR QUALITIY MONITORING

* Python code for air quality monitoring:

# Import necessary libraries

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

from sklearn.linear\_model import LinearRegression

from sklearn.metrics import mean\_squared\_error, r2\_score

from sklearn.model\_selection import train\_test\_split

# Load the air quality dataset

df = pd.read\_csv('air\_quality\_data.csv')

# Explore the data

print(df.head())

# Split the data into training and testing sets

X = df[['Temperature', 'Humidity', 'Wind Speed']]

y = df['Air Quality']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Train a linear regression model

model = LinearRegression()

model.fit(X\_train, y\_train)

# Evaluate the model on the test set

y\_pred = model.predict(X\_test)

mse = mean\_squared\_error(y\_test, y\_pred)

rmse = np.sqrt(mse)

r2 = r2\_score(y\_test, y\_pred)

print("Mean Squared Error: ", mse)

print("Root Mean Squared Error: ", rmse)

print("R-squared: ", r2)

# Visualize the predicted vs actual values

plt.scatter(y\_test, y\_pred)

plt.xlabel('Actual Air Quality')

plt.ylabel('Predicted Air Quality')

plt.title('Air Quality Prediction')

plt.show()