**Explanation:**

Simple linear regression is used to predict the relationship between Dependent variable and independent variable. For the analysis, I have taken a piece of Dietary Data from the site kaggle.com

The two variables are assumed to be linearly related. Hence, we try to find a linear function that predicts the dependent variable (y) as accurately as possible as a function of the independent variable (x). The linear regression equation is of the form y=Bo+B1\*x where Bo is the y-intercept and B1 is the slope.

For the implementation of linear regression in python programming I used below steps:

1. Used packages like numpy, pandas, matplotlib and sklearn. All these modules need to be installed in python to use.
2. The input excel file named "﻿Data\_file.xlsx" is the Dietary Data containing fields BMI (x-variable/Independent) and percentage of body fat (y-variable/Dependent).
3. I have written a code as shown in the image below.

Text

Description automatically generated

**Output:**

The above code will create and fit the linear regression model. In the output both the y-intercept and regression coefficient are displayed. Using this model, we can make the prediction using Y\_pred method. For predicting % of body fat, we need to give a set of values for BMI. In the above program, the BMI from the same input file "Data\_file.xlsx" is used. We can see the predicted values for the % of body fat in the output shown below.

Chart, scatter chart

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