**Analysis of Data:**

**Analysis-1:**

A diagram with a curve

Description automatically generated with medium confidence

The histogram features "Height (inches)" on the x-axis and "Frequency" on the y-axis, depicting the distribution of heights among individuals between 66 and 71 inches. It shows a higher frequency of individuals in the ranges of 67-68 inches and 70-71 inches, suggesting two prominent clusters. The overlaid KDE curve indicates a bimodal distribution, revealing distinct height groups, while the continuous nature of the bars suggests a well-distributed dataset.

**Analysis-2:**

A graph of a function

Description automatically generated with medium confidence

This pair plot visualizes the relationships between multiple numerical variables in your data frame 'df'. Each square in the grid represents a scatter plot for one pair of variables. The diagonal plots, however, use kernel density estimation (KDE) to depict the distribution of each individual variable. By examining these plots together, we can gain valuable insights into potential correlations and trends between the features. For instance, if we see a positive correlation between height and weight in the upper left corner, it would suggest that as height increases, weight tends to increase as well. Conversely, a negative correlation between age (bottom right corner) and grip strength might indicate that grip strength weakens as age advances. By analyzing all the plots together, we can identify interesting relationships that deserve further exploration and potentially uncover underlying patterns within the data set.

**Analysis-3:**

A graph with orange dots

Description automatically generated

The scatter plot reveals a general trend of decreasing grip strength with increasing age. This suggests a negative correlation between these two variables. However, individual variations are evident, as not all older individuals exhibit weaker grip strength. Factors beyond age, such as health, lifestyle, and genetics, likely influence grip strength. It appears that individuals under the age of 40 generally exhibit higher grip strength compared to those over 40. This suggests a trend of decreasing grip strength with age.

**Folder Structure:**

grip\_strength\_project(project/main folder)

1. data\_clean(folder1 under project folder)

cleaned\_data.csv

1. data\_raw(folder2 under project folder)

raw\_data.csv

1. results(folder3 under project folder)

analysis.png

1. src(folder4 under project folder)

processed\_data.csv

analysis\_data.csv

This is the folder structure that I have used to complete the Assignment1. In the assignment1 first I have created one main folder named Assignment1 and then I have created 2 more folders under the Assignment1 named grip\_strength\_project and Students\_Performance\_Project. For these individual folders I have created a folder structure mentioned above. For each folder first I have created 4 more sub-folders named data\_clean, data\_raw, results and src. Then in each folder I have given the respected data. I have performed data analysis on the given dataset so, In the data\_raw folder I have given the given/unprocessed data and in data\_clean folder I have given the processed data. In src folder I have given 2 python notebook file which are the data preprocessed file and analysis file and also in results folder I gave the data plotted images.

**The folder structure in my windows machine are follows:**

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