**Introduction** :

The dataset contains a list of species of fishes and their characteristics.

**Bar Graph**:

A graph of a number of different species

Description automatically generated

This graph compares the average weight of different species and this can be clearly seen that Sillaginopsis panijus has the highest average weight and Puntius tictoides has the lowest average weight.

**Scatter Plot**:

A diagram of weight and weight relationship

Description automatically generated

Each dot in this scatter plot shows the length of the fish and its corresponding weight.Clusters can seen which shows that groups of fish have similar weight and length.There is a general upward trend which tells us in many cases length is directly proportional to weight.

Heat Map:

A diagram of a heatmap

Description automatically generated

This heat map shows correlations between all the variables of the dataset .Length and weight have a positive correlation (0.40) which means they are directly proportional.Also , Length and w\_I\_ratio have a strong negative correlation which means they are inversely propotional.

Clustering elbow method :

A graph with a line

Description automatically generated

The x axis shows the number of cluster against y-axis which show the spread out of the data within each group.

Clustering with predictions:

A graph with different colored dots

Description automatically generated

Cluster 0 represents species with lesser height and weight and Cluster 2 represents species with the most weight and height. The purple cross represent the predicted data. They are far from the centroids which indicates that this data might be outliner.

**Linear Fit:**

# A graph of a graph with a red line Description automatically generated with medium confidence

Shaded area represents 95% of the confidence interval , This shows where most of the data points will fall.Areas on both ends indicates uncertainty in prediction for extreme values.

Length: 15, Predicted Weight: 3.59 ± 1.89

Length: 20, Predicted Weight: 3.89 ± 1.89

Length: 25, Predicted Weight: 4.18 ± 1.89