# Route visualisations:

## Create a new layer in ArcGIS with all the trips of one vessel (e.g., Rodney)

On the Figure 1, we can see all trips for boat with name Rodney. Each trip is from different month.

A screenshot of a computer

Description automatically generated with medium confidence

Figure : all the trips of one vessel.

## Visualize and compare the same trajectory using the fishing and AIS datasets.

On Figure 2 we can see compared trajectories of boat Rodney. The blue lines represent trajectories from AIS dataset (they look checkered since we normalized them in the previous assignment). The red lines represent trajectories from fishing dataset. We can see that in AIS dataset we had much more points and we can observe that boat was traveling from port in Mar del Plata.

A picture containing text, screenshot, map

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Figure : compared trajectories.

## Create a chart to show each route’s total length (distance) of one vessel (e.g., Rodney)

According to Figure 3, the total length traveled by boat Rodney can be observed for each trip. The largest length covered by Rodney was in trip 2020-2, which is illustrated in Figure 1 as a red-colored line.

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Figure : each route’s total length

# Plotting fishing data

## Create a chart to show the total quantity of fish per different vessels.

On Figure 3 we can see amount of fish caught by different vessels. The most fishes were caught by Rodney boat.

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Figure : total quantity of fish per different vessels

## Create a chart to show the trend of average fish caught in different trips of one vessel in one year (e.g., Rodney in 2020)

Figure 5 presents the average weight of fish caught by Rodney across different trips. Interestingly, despite Rodney undertaking the longest trip in 2020-2, the highest average weight of caught fish is observed in the 2020-3 trip.A picture containing text, screenshot, number, font

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Figure Average of fish caught in different trips for Rodney

# 3) Plotting temperature and chlorophyll

## a. Create chart to show the correlation between the fish caught and temperature for one vessel (e.g., Rodney).

In Figure 6, it is evident that there is no correlation between the temperature and the amount of fish caught for Rodney. The R-squared value is 0, indicating no significant relationship. Additionally, the available data points for temperature between 5 and 8 degrees are limited.

A screen shot of a graph

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Figure Correlation between the fish and temperature for Rodney

## b. Visualize the chlorophyll as a Raster

**A picture containing text, font, screenshot, graphics

Description automatically generated**Figure 7 displays a chlorophyll raster, where high levels of chlorophyll are represented by the color green, with a maximum value of 6.6712. On the other hand, low values of chlorophyll are depicted by the color red, with a minimum value of 0.434392. In sea area level of chlorophyll is mostly low at north and high on south. Good fishing spots with high level in chlorophyll are represented with green color.A screenshot of a map

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Figure Chlorophyll as a Raster

## 

## c. Plot the distribution of the temperature for the raster created

A picture containing text, font, screenshot, design

Description automatically generatedIn Figure 8, a temperature raster is presented, where the color red represents high levels of temperature. The maximum temperature value depicted is 293.978 degrees. Conversely, lighter shades of red indicate low temperature values, with a minimum value of 281.546. Notably, the raster reveals a noticeable pattern where areas with high temperature levels coincide with low chlorophyll levels, and vice versa. Interestingly, when analyzing the fishing data, it was observed that all the fishing spots were located in areas with lower temperature levels.A screenshot of a map

Description automatically generated with medium confidence

Figure Temperature as a Raster