1. Write a summary in your own words of  
   a. the goals of the original study:

Hypothesis – Homophily around a specialized behavior—dolphins foraging with the assistance of artisanal fishermen—underlies social preferences and can structure animal populations.

The intent of this study was to see how social structures could be determined based on foraging approaches.

They intended to use social animals who would regularly work with fishermen casting nets, bottlenose dolphins in southern Brazil, to herd fish around in order to increase their chances of catching fish.  
b. the methodology that the authors used to produce the data

Initially they had to find groups of dolphins and attempt to create a photo-identification chart using pictures and recordings of the time, location, group size, behavioral state. Once this was done, more in depth identifications were used including identifying marks on the dorsal fin including lack of marking at all in calves. Some skin samples were collected in order to use molecular analyses and genotyping to determine sex and relatedness.

Once groups were identifiable, they were assigned to behavioral contexts: cooperative foraging, non-cooperative foraging, and non-foraging. Non-foraging included behavioral states of travelling, socializing, and resting as well as all behavior.

After all data was collected, they ran many different tests and analyses to come to the conclusion that “behavioral specializations can define social affiliations and shape animal social structures.”  
c. the type of data that are available to you: 4 separate .csv files  
1. format?  
a. Matrix of photo-identification protocols

b. Matrix with home rang overlap values

c. Matrix of covariables of 52 photo-identified individuals

d. Matrix with pairwise genetic relatedness  
2. size?

a. 17.09 Kb

b. 4.996 Kb

c. 1.157 Kb

d. 1.261 Kb  
3. any inconsistencies in the data files? anything that looks problematic?

No inconsistencies, only problematic because it is going to be a lot of information  
4. what the data represent about the biology?

Identification, relatedness, foraging behavioral traits

2. **Now for the substance of the project**: Define and describe an analysis that YOU want to do with the data. This could be (i) repeating an analysis from the paper (as long as the authors did NOT give code that you are simply re-running ;-) ), (ii) doing something new that the authors didn't do, or (iii) a combination of the two. The challenge you define for yourself should indeed be something you expect to be *challenging*. For example: "Import the data and calculate the mean of each variable" would **NOT** be a sufficient challenge. This is supposed to be a *project* that will require you to do some creative programming, not an easy few lines of code. Your challenge should also follow from some question about the biology of the system you are investigating. Hence, **you should formulate a question**, and **your challenge statement should address both the biological elements of the question and the computational challenge involved**.

I would like to repeat the analysis from the paper since they have not given ANY codes they used to reach their conclusions. It’s a lot of information and will be very challenging to hopefully reach the same results they have.

<https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2018.0909>

<https://datadryad.org/resource/doi:10.5061/dryad.20vd145>

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