Week 6 Homework

1. In computer science/ information systems programs are often documented with UML. Class diagram describes the structure of a class. More information can be seen in https://medium.com/@smagid_allThings/uml-class-diagrams-tutorial-step-by-step-520fd83b300b.

   Draw the class diagrams for the following situations:

   a. In this week we have used 3 classes to demonstrate object-oriented programming. You may need to create some methods for the Candidates class.

   b. A class of countries is described by their name, population, capital city and its land mass. The code also contains a method to calculate the most populous country.

2. To infer from statistics, there is a guideline of concluding from the probability. Which is shown in the table below.

Impossible	Improbable	Even chance	Probable	Certain
0%	< 50%	50%	> 50%	100%

   In the following, what is your conclusion about the events described?

   a. In summer, there are 7200 people on average visit Bondi Beach per day. Yesterday, it was expected to see 1200 visitors buying ice cream.

   b. In an essay, there are 80% of a paragraph was the same from another text.

   c. I tossed 20 coins and checked how many heads observed. In the long run, I would expect the chance of observing heads is _____ if the coin is fair.

3. In data analytics, asking questions to the project owner is important to define the scope of your project. It helps you to understand the data, but also learn new knowledge from other areas. From the following case study, think about 2 questions that you may ask the project owner to define your project better.

You are starting to work in a legal-tech team and your project owner is a social changemaker. One day, your project owner come in and complain that the database is too large and complicated. She would need your help to scope the data project. In particular, she is hoping that there are some interesting insights from

the data and use them to lobby the policymakers.