

(Real World) Assignment

Due on April 8, 11:59pm, in groups of up to three students via Crowdmark.

The goal of this assignment is that you engage with a real world application of probability of your choice! The task is two-fold:

1. Pick a topic of your choice where probability theory is relevant.
2. Write a report (1/2 page – 1 page) or create a poster explaining your topic and how it relates to STAT 230. You can be creative here, and include graphs, graphics and even memes!

Examples for topics include, but are not limited to,

- Introducing a new named distribution and explaining where (and why) it is used, such as the Pareto distribution which is often used to model income, or the Gamma distribution as a sum of waiting times in a Poisson process.
- Introducing concepts beyond just named distributions, for instance, the compound Poisson process which is used in insurance contexts to model a random claim number and random claim amounts or the Monte Carlo method to estimate expectations by means of simulation.
- Exploring and analyzing other topics relevant to probability (is a coin really equally likely to land on heads and tails? See this discussion, for instance: <https://nationalpost.com/news/flipping-amazing-heads-or-tails-is-not-the-50-50-chance-you-thought#:~:text=That%20tendency%20was%20small%20and,landing%20the%20other%20way%20up.>)
- and many more!

The choice of topic is really up to you, and the grading is done by completeness: If your submission meets the minimum standards, it will get full marks.

Main rules summarized:

- You can submit in groups of 1, 2 or 3 students
- The deadline is April 8, 11:59pm via Crowdmark.
- You pick your own topic, as described above.
- You do NOT need to put too much effort in citing references - focus more on content than formalities!
- Have fun and enjoy the process! This is a very low stake, open ended assignment, with the goal that you engage with a (fun) probability relevant topic.