

# Day02 Exercise

March 2022

## 1 Introduction

Your goal is to reverse-engineer this document! Here's what to do:

1. Open Overleaf, sign in.
2. Create a blank project by:
  - (a) Clicking on "New Project"
  - (b) Clicking on "Blank Project"
3. Fill in the project so it looks like this page!

## 2 Use a figure environment

Replicate Figure 1.



Figure 1: The universe is big!

## 3 Create a table

Replicate Table 1.

Manufacturer	Model	City	Highway
Audi	A4	18	27
Subaru	Impreza	20	27
Toyota	Corolla	26	35
Volkswagen	GTI	22	29

Table 1: Fuel mileage for 2008 compact vehicles.

## 4 Equations and Citations

Write the following definition of entropy,  $H$ , from [1],

$$H = - \sum_i p_i \log p_i \quad (1)$$

where  $p_i$  is the probability of the  $i$ -th outcome.

## References

- [1] C. E. Shannon, "A mathematical theory of communication," *The Bell System Technical Journal*, vol. 27, no. 3, pp. 379–423, 1948.

## Hints

Unless you want more practice, you don't have to replicate this section!

### • Formatting

- The numbered headers use `section` commands.
- The margins have been adjusted to 0.5 in.
- The `[twocolumn]` option for `documentclass` creates two columns.
- Text formatting we've used includes `texttt`.

### • 1 Introduction

- There is a nested `enumerate` environment here!

### • 2 Use a figure environment

- To get the image of the universe, you can download the image [from Github](#).
- To center the figure, use the `\centering` command.
- To control the width of the `float`, use the `[width=\linewidth]` option with the `\includegraphics` command.

### • 3 Create a table

- If it's helpful, then use [tablesgenerator.com](#).
- Don't forget to make the headers bold!

### • 4 Equations and Citations

- If you need help finding symbols, then try [detexify](#).
- Download the database file (`example.bib`) [from Github](#).
- Don't forget to call `\bibliographystyle{ieeetr}` and `\bibliography{example}`