```
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title: "EV Power - Lab 4 Project Report"
format: typst
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# Example Solution 1

## **Part 0: libraries**
```

```{r}
library(tidyverse)
library(lubridate)
library(leaflet)
library(sf)
library(ggplot2)
```

Part 1: **Defining Research Question**

Chosen Question: Are there more EV registered vehicles in states with higher total energy used?

Part 2: Data Preparation and Cleaning

```{r}
re_2021 <- read_csv("renew_use_2021.csv")
re_2022 <- read_csv("renew_use_2022.csv")
re_2023 <- read_csv("renew_use_2023.csv")

energy_2021 <- read_csv("total_energy_2021.csv")
energy_2022 <- read_csv("total_energy_2022.csv")
energy_2023 <- read_csv("total_energy_2023.csv")

energy_price <- read_csv("av_energy_price_2021-2023.csv")
registration <- read_csv("ev_registrations-by_state_2023.csv")

re_2021 <- re_2021 %>%
  rename(
      state = State)

```

Part 3: Joining / Pivoting Datasets for Analysis

```{r}
renew <- renew_wide |>
  pivot_longer(
    cols
    names_to = "year"
) |>
mutate(year = as.integer(year))

energy <- energy_wide |>
  inner_join(energy, by = c("year")) |>

```

Part 4: Mapping Visualization

```{r}
ggplot(us_states, aes(x = long, y= lat)) +
geom_map(
  energy_ev)
aes(state),
color = "white" +
```

```
labs(
title = "U.S. Renewable Energy Use by State and Year")
```