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---------------------------ECXCEL-----------------------------

# Load necessary libraries

library(dplyr)

library(tidyr)

# Set up the data frame with a list of countries and years

countries <- c("Manila", "Rizal", "Laguna", "Bulacan", "Pampanga")

years <- 2000:2020

carbon\_emissions <- data.frame(

country = rep(countries, length(years)),

year = rep(years, each = length(countries))

)

# Generate random carbon emission values between 0 and 100

carbon\_emissions$emissions <- runif(nrow(carbon\_emissions), min = 0, max = 100)

# Pivot the data to wide format for easier viewing

wide\_emissions <- pivot\_wider(carbon\_emissions, names\_from = country, values\_from = emissions)

# Save the data to a CSV file

library(writexl)

write\_xlsx(wide\_emissions, "carbon\_emissions.xlsx", overwrite = TRUE)

-----------------------------------CHART----------------------------------------

# Load necessary libraries

library(dplyr)

library(tidyr)

library(ggplot2)

# Set up the data frame with a list of countries and years

countries <- c("Manila", "Rizal", "Laguna", "Bulacan", "Pampanga")

years <- 2000:2020

carbon\_emissions <- data.frame(

country = rep(countries, length(years)),

year = rep(years, each = length(countries))

)

# Generate random carbon emission values between 0 and 100

carbon\_emissions$emissions <- runif(nrow(carbon\_emissions), min = 0, max = 100)

# Pivot the data to wide format for easier viewing

wide\_emissions <- pivot\_wider(carbon\_emissions, names\_from = country, values\_from = emissions)

# Plot the data using ggplot2

ggplot(wide\_emissions, aes(x = year)) +

geom\_line(aes(y = Manila, color = "Manila")) +

geom\_line(aes(y = Rizal, color = "Rizal")) +

geom\_line(aes(y = Laguna, color = "Laguna")) +

geom\_line(aes(y = Bulacan, color = "Bulacan")) +

geom\_line(aes(y = Pampanga, color = "Pampanga")) +

xlab("Year") +

ylab("Carbon Emissions") +

ggtitle("Carbon Emissions by Province")