# Static Code for App

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**Quarto**

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see https://quarto.org.

**Running Code**

When you click the **Render** button a document will be generated that includes both content and the output of embedded code. You can embed code like this:

```
#Read in packages
library(httr)
library(jsonlite)
library(dplyr)
library(lubridate)
```

query API

```
data_rainfall_wind <- function(lat, lon, start_date, end_date, time_interval = "1 hours") {
  url <- "https://archive-api.open-meteo.com/v1/archive"
  response <- GET(url, query = list (
    latitude = lat,
    longitude = lon,
    start_date = start_date,
    end_date = end_date,
    hourly = "precipitation,wind_speed_10m,wind_gusts_10m",
    timezone = "auto"
  ))
  data1 <- fromJSON(content(response, as = "text"))
```

```r
  df <- tibble(
    time = ymd_hm(data1$hourly$time),
    precipitation = data1$hourly$precipitation,
    wind_speed = data1$hourly$wind_speed_10m,
    wind_gust = data1$hourly$wind_gusts_10m
  )
  # 4-hour summary
  df_hr <- df %>%
    mutate(interval = floor_date(time, time_interval)) %>%
    group_by(interval) %>%
    summarize(
      precipitation_sum = sum(precipitation, na.rm = TRUE),
      wind_speed_avg = mean(wind_speed, na.rm = TRUE),
      wind_gust_max = max(wind_gust, na.rm = TRUE),
      .groups = "drop"
    )

  return(df_hr)
}

#Asheville Helene flood
rain_asheville_nc <- data_rainfall_wind(35.5975, -82.5461, "2024-09-25", "2024-09-27")

#Busick nc helene flood
rain_busick_nc <- data_rainfall_wind(35.7698, -82.1829, "2024-09-25", "2024-09-27")

#houston July 2025 flood
rain_kerrville_tx <-data_rainfall_wind(30.0474, -99., "2025-07-03", "2025-07-05")

#Nc Chantal July 2025 flood
rain_orangecounty_nc <- data_rainfall_wind(36.0263, -79.1097, "2025-07-06", "2025-07-07")
```

```
Warning: There were 3 warnings in `summarize()`.
The first warning was:
i In argument: `wind_gust_max = max(wind_gust, na.rm = TRUE)`.
i In group 46: `interval = 2025-07-07 21:00:00`.
Caused by warning in `max()`:
! no non-missing arguments to max; returning -Inf
i Run `dplyr::last_dplyr_warnings()` to see the 2 remaining warnings.
```

```r
#add location and storm name
rain_asheville_nc <- rain_asheville_nc %>%
  mutate(location = "Asheville", storm_name = "Helene")

rain_busick_nc <- rain_busick_nc %>%
  mutate(location = "Busick", storm_name = "Helene")

rain_kerrville_tx <- rain_kerrville_tx %>%
  mutate(location = "Kerrville", storm_name = "Barry")

rain_orangecounty_nc <- rain_orangecounty_nc %>%
  mutate(location = "Orange County", storm_name = "Chantal")

#combine data sets into One
all_data <- bind_rows(rain_asheville_nc, rain_busick_nc, rain_kerrville_tx, rain_orangecounty
```

The `echo: false` option disables the printing of code (only output is displayed).