A foremost aviation industry player with a significant presence in New York City has launched an in-depth data analysis project focused on identifying trends in flight durations in air travel. This initiative aims to delve into a wealth of data related to flight schedules and operational patterns, with the objective of optimizing flight times and enhancing the overall travel experience for passengers. As the head data analyst, you have access to rich datasets, sourced from the 'nycflights2022' collection produced by the ModernDive team. These datasets include records of flights departing from major New York City airports, including JFK (John F. Kennedy International Airport), LGA (LaGuardia Airport), and EWR (Newark Liberty International Airport), during the second half of 2022. They offer a comprehensive view of flight operations, covering various aspects such as departure and arrival times, flight paths, and airline specifics:

- `flights2022-h2.csv` contains information about each flight including

Variable	Description
`carrier`	Airline carrier code
`origin`	Origin airport (IATA code)
`dest`	Destination airport (IATA code)
`air_time`	Duration of the flight in air, in minutes

- `airlines.csv` contains information about each airline:

Variable	Description
`carrier`	Airline carrier code
`name`	Full name of the airline

- `airports.csv` provides details of airports:

Variable	Description
`faa`	FAA code of the airport
`name`	Full name of the airport

```r
# Import required packages
library(dplyr)
library(readr)

# Load the data
flights <- read_csv("flights2022-h2.csv", show_col_types = FALSE)
airlines <- read_csv("airlines.csv", show_col_types = FALSE)
airports <- read_csv("airports.csv", show_col_types = FALSE)

frequent <- flights %>%
  filter(origin %in% c("JFK", "LGA", "EWR")) %>%
  left_join(airlines, by = "carrier", suffix = c("_flight", "_airline")) %>%
  left_join(airports, by = c("dest" = "faa"), suffix = c("", "_airport")) %>%
  rename(
    airline_name = name,          # This is the airline name from airlines.csv
    airport_name = name_airport   # This is the airport name from airports.csv
  ) %>%
  mutate(air_time = air_time / 60) %>%
  group_by(airport_name, airline_name) %>%
  summarise(
    flights = n(),
    avg_air_time = mean(air_time, na.rm = TRUE),
    .groups = "drop"
  ) %>%
  arrange(desc(flights)) %>%
  slice_head(n = 1) %>%
  select(airline_name, airport_name, flights, avg_air_time)
frequent

longest <- flights %>%
  filter(origin %in% c("JFK", "LGA", "EWR")) %>%
  left_join(airlines, by = "carrier", suffix = c("_flight", "_airline")) %>%
  left_join(airports, by = c("dest" = "faa"), suffix = c("", "_airport")) %>%
  rename(
    airline_name = name,          # This is the airline name from airlines.csv
    airport_name = name_airport   # This is the airport name from airports.csv
  ) %>%
  mutate(air_time = air_time / 60) %>%
  group_by(airport_name, airline_name) %>%
  summarise(
    flights = n(),
    avg_air_time = mean(air_time, na.rm = TRUE),
    .groups = "drop"
  ) %>%
  arrange(desc(avg_air_time )) %>%
```

```
  slice_head(n = 1) %>%
  select(airline_name, airport_name, avg_air_time)
longest

least_sol <- flights %>%
  filter(origin == "JFK") %>%
  left_join(airlines, by = "carrier", suffix = c("_flight", "_airline")) %>%
  left_join(airports, by = c("dest" = "faa"), suffix = c("", "_airport")) %>%
  rename(
    airline_name = name,        # This is the airline name from airlines.csv
    airport_name = name_airport # This is the airport name from airports.csv
  ) %>%
  mutate(air_time = air_time / 60) %>%
  group_by(airport_name) %>%
  summarise(
    flights = n(),
    .groups = "drop"
  ) %>%
  arrange(flights) %>%
  slice_head(n = 1) %>%
  select(airport_name, flights)
least <- apply(least_sol, 1, paste, collapse = ", ")
least
```

index	airline_name	airport_name	flights	avg_air_time
1	Delta Air Lines Inc.	Hartsfield Jackson Atlanta International Airport	5264	1.8202

Rows: 1   Expand

index	airline_name	airport_name	avg_air_time
1	Delta Air Lines Inc.	Daniel K Inouye International Airport	10.7167

Rows: 1   Expand

'Eagle County Regional Airport, 17'