Strava Statistics

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```
library("tidyverse")
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
df_raw <- read_csv("activities_12_28_2024.csv")
```

```
## New names:
## Rows: 371 Columns: 94
## -- Column specification
## -------------------------------------------------------- Delimiter: "," chr
## (6): Activity Date, Activity Name, Activity Type, Activity Description,... dbl
## (51): Activity ID, Elapsed Time...6, Distance...7, Max Heart Rate...8, R... lgl
## (37): Commute...10, Activity Private Note, Athlete Weight, Bike Weight, ...
## i Use `spec()` to retrieve the full column specification for this data. i
## Specify the column types or set `show_col_types = FALSE` to quiet this message.
## * `Elapsed Time` -> `Elapsed Time...6`
## * `Distance` -> `Distance...7`
## * `Max Heart Rate` -> `Max Heart Rate...8`
## * `Relative Effort` -> `Relative Effort...9`
## * `Commute` -> `Commute...10`
## * `Elapsed Time` -> `Elapsed Time...16`
## * `Distance` -> `Distance...18`
## * `Max Heart Rate` -> `Max Heart Rate...31`
## * `Relative Effort` -> `Relative Effort...38`
## * `Commute` -> `Commute...51`
```

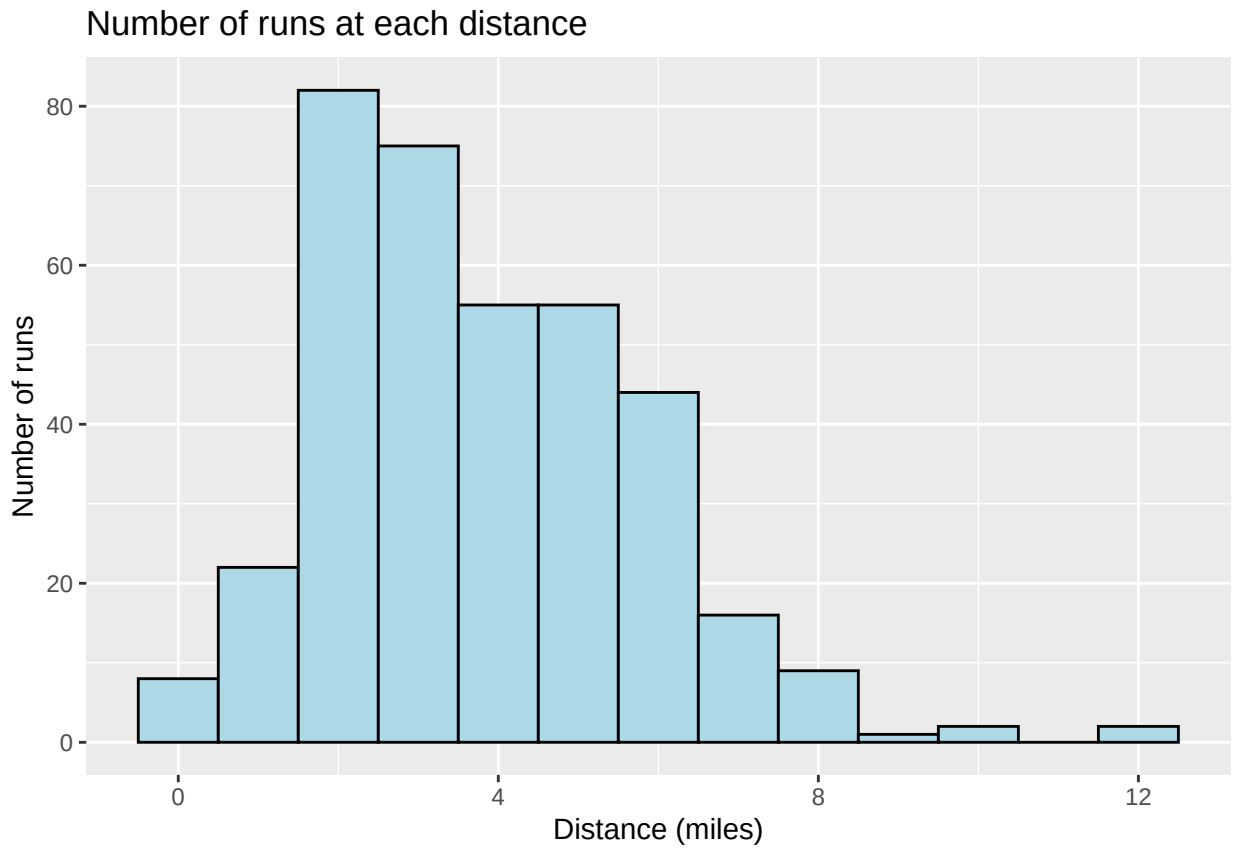
```
df_clean <- df_raw |>
  select(date = "Activity Date",
         name = "Activity Name",
         type = "Activity Type",
         description = "Activity Description",
```

```
         total_time = "Elapsed Time...6",
         time = "Moving Time",
         distance = "Distance...7",
         elevation = "Elevation Gain") |>
  mutate(distance = distance * .621,
         total_time = total_time / 60,
         time = time / 60,
         pace = time / distance,
         elevation = if_else(is.na(elevation), 0, elevation),
         elevation = elevation * 3.281)

print(df_clean)
```

```
## # A tibble: 371 x 9
##    date        name  type  description total_time  time distance elevation  pace
##    <chr>       <chr> <chr> <chr>            <dbl> <dbl>    <dbl>     <dbl> <dbl>
##  1 Jun 8, 202~ Even~ Run   <NA>             50.0  30.1     3.32       454.  9.05
##  2 Jun 10, 20~ Even~ Run   <NA>             32.6  32.0     3.03       379. 10.5
##  3 Jun 11, 20~ Even~ Run   <NA>             18.1  17.9     2.00       268.  8.94
##  4 Jun 12, 20~ Morn~ Run   <NA>              8.62  8.62    1.05       160.  8.21
##  5 Jun 16, 20~ Even~ Run   <NA>             19.8  16.8     1.06         0  15.8
##  6 Jun 16, 20~ Even~ Run   <NA>             19.9  19.6     2.00         0   9.81
##  7 Jun 17, 20~ Even~ Run   <NA>              9.22  7.98    1.00         0   7.98
##  8 Jun 17, 20~ Even~ Run   <NA>              6.32  6.32    0.677        0   9.33
##  9 Jun 17, 20~ Even~ Run   <NA>             14.8  14.5     1.45         0   9.96
## 10 Jun 18, 20~ Even~ Run   <NA>             30.4  30.0     3.05         0   9.86
## # i 361 more rows
```

Total Statistics:

```
run_histogram <- df_clean |>
  ggplot(aes(x = distance)) +
  geom_histogram(color = "black", fill = "lightblue",binwidth = 1) +
  labs(x = "Distance (miles)",
       y = "Number of runs",
       title = "Number of runs at each distance")
print(run_histogram)
```




```
total_summary <- df_clean |>
  summarize(
    total_activities = n(),
    total_miles = sum(distance),
    total_hours = sum(time),
    total_elevation = sum(elevation)) |>
  mutate(total_hours = total_hours / 60)

print(total_summary)
```

```
## # A tibble: 1 x 4
##   total_activities total_miles total_hours total_elevation
##              <int>       <dbl>       <dbl>           <dbl>
## 1              371       1413.        204.          77565.
```

Adding month and year columns

```
df_dates <- df_clean |>
  mutate(
    year = case_when(
      grepl(2021, date) ~ 2021,
      grepl(2022, date) ~ 2022,
      grepl(2023, date) ~ 2023,
      grepl(2024, date) ~ 2024),
    month = case_when(
```

```
      grepl("Jan", date) ~ "Jan",
      grepl("Feb", date) ~ "Feb",
      grepl("Mar", date) ~ "Mar",
      grepl("Apr", date) ~ "Apr",
      grepl("May", date) ~ "May",
      grepl("Jun", date) ~ "Jun",
      grepl("Jul", date) ~ "Jul",
      grepl("Aug", date) ~ "Aug",
      grepl("Sep", date) ~ "Sep",
      grepl("Oct", date) ~ "Oct",
      grepl("Nov", date) ~ "Nov",
      grepl("Dec", date) ~ "Dec",
    )) |>
  select(date, year, month, everything())
```

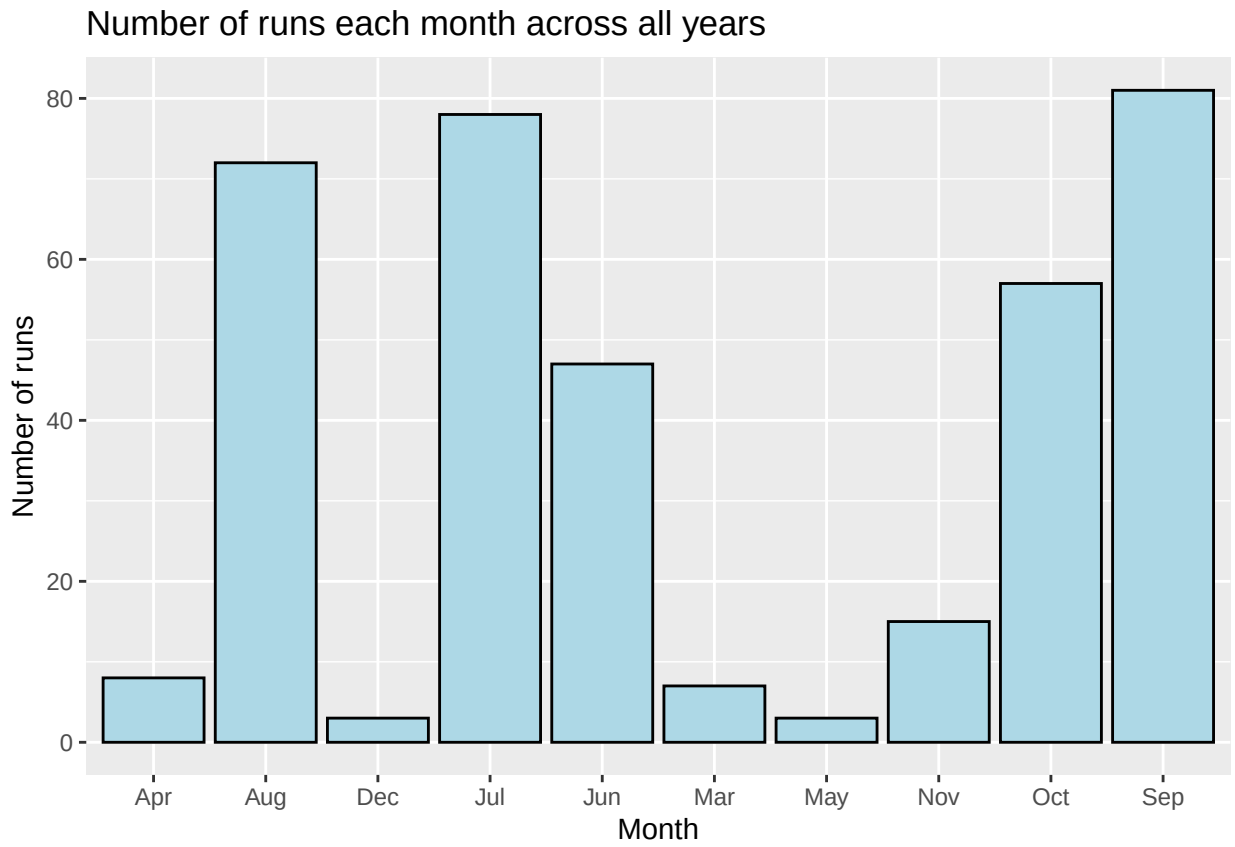
Yearly Summaries

```
yearly_summaries <- df_dates |>
  group_by(year) |>
  summarize(
    total_activities = n(),
    total_miles = sum(distance),
    total_hours = sum(time),
    total_elevation_feet = sum(elevation)) |>
  mutate(total_hours = total_hours / 60)

print(yearly_summaries)
```

```
## # A tibble: 4 x 5
##    year total_activities total_miles total_hours total_elevation_feet
##   <dbl>            <int>       <dbl>       <dbl>                <dbl>
## 1  2021              139       543.        81.9                38009.
## 2  2022              115       349.        46.6                16829.
## 3  2023              110       505.        73.3                22350.
## 4  2024                7        15.6        2.25                 376.
```

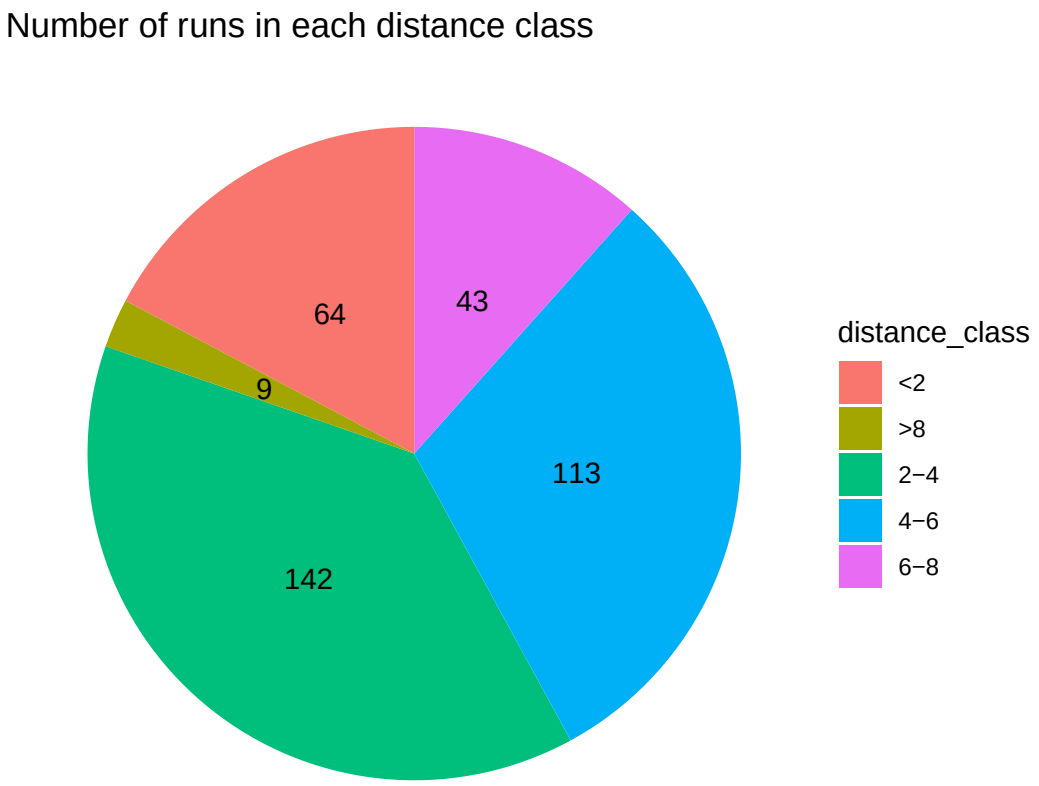
Number of runs in each month

```
monthly_runs <- df_dates |>
  group_by(year) |>
  ggplot(aes(x = month)) +
  geom_bar(color = "black", fill = "lightblue") +
  labs(x = "Month",
       y = "Number of runs",
       title = "Number of runs each month across all years")

print(monthly_runs)
```



Pie Chart

```
distance_pie <- df_clean |>
  mutate(distance_class = case_when(
    distance >= 0 & distance <= 2 ~ "<2",
    distance > 2 & distance <= 4 ~ "2-4",
    distance > 4 & distance <= 6 ~ "4-6",
    distance > 6 & distance <= 8 ~ "6-8",
    distance > 8 ~ ">8"
  )) |>
  group_by(distance_class) |>
  summarize(count = n()) |>

  ggplot(aes(x = "", y = count, fill = distance_class)) +
    geom_bar(stat = "identity") +
    geom_text(aes(label = count),
              position = position_stack(vjust = 0.5)) +
    coord_polar(theta = "y") +
    theme_void() +
    labs(title = "Number of runs in each distance class")

print(distance_pie)
```



Splitting by year

```
df_2021 <- df_clean |>
  filter(grepl(2021, date))

df_2022 <- df_clean |>
  filter(grepl(2022, date))

df_2023 <- df_clean |>
  filter(grepl(2023, date))

df_2024 <- df_clean |>
  filter(grepl(2024, date))

# Decided this was unnecessary, but these are here in case I want to do
# anything in the future
```

All Tables and Graphs

Total Stats

```
print(total_summary)
```

```
## # A tibble: 1 x 4
##   total_activities total_miles total_hours total_elevation
##              <int>       <dbl>       <dbl>           <dbl>
## 1              371       1413.        204.          77565.
```

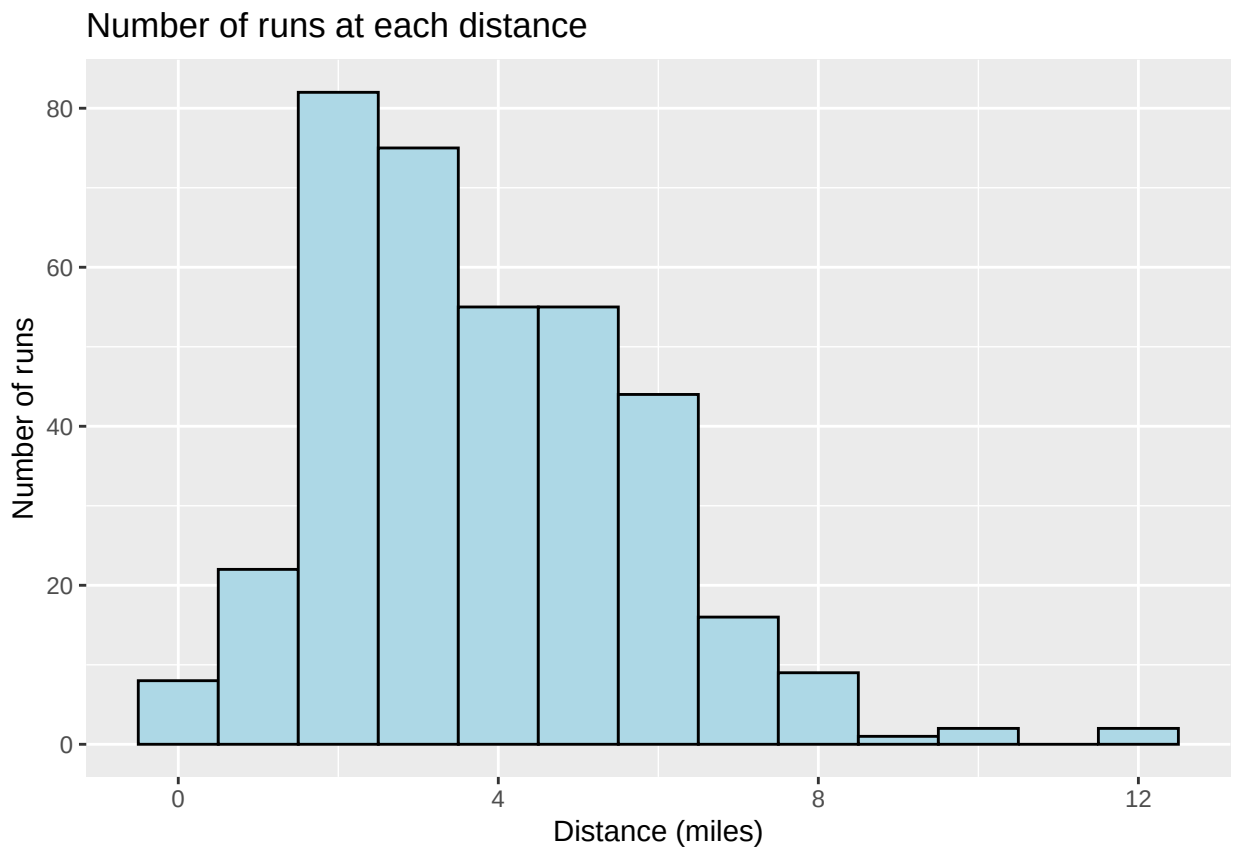
Stats by Year

```
print(yearly_summaries)
```

```
## # A tibble: 4 x 5
##    year total_activities total_miles total_hours total_elevation_feet
##   <dbl>            <int>       <dbl>       <dbl>                <dbl>
## 1  2021              139       543.        81.9                38009.
## 2  2022              115       349.        46.6                16829.
## 3  2023              110       505.        73.3                22350.
## 4  2024                7        15.6        2.25                376.
```

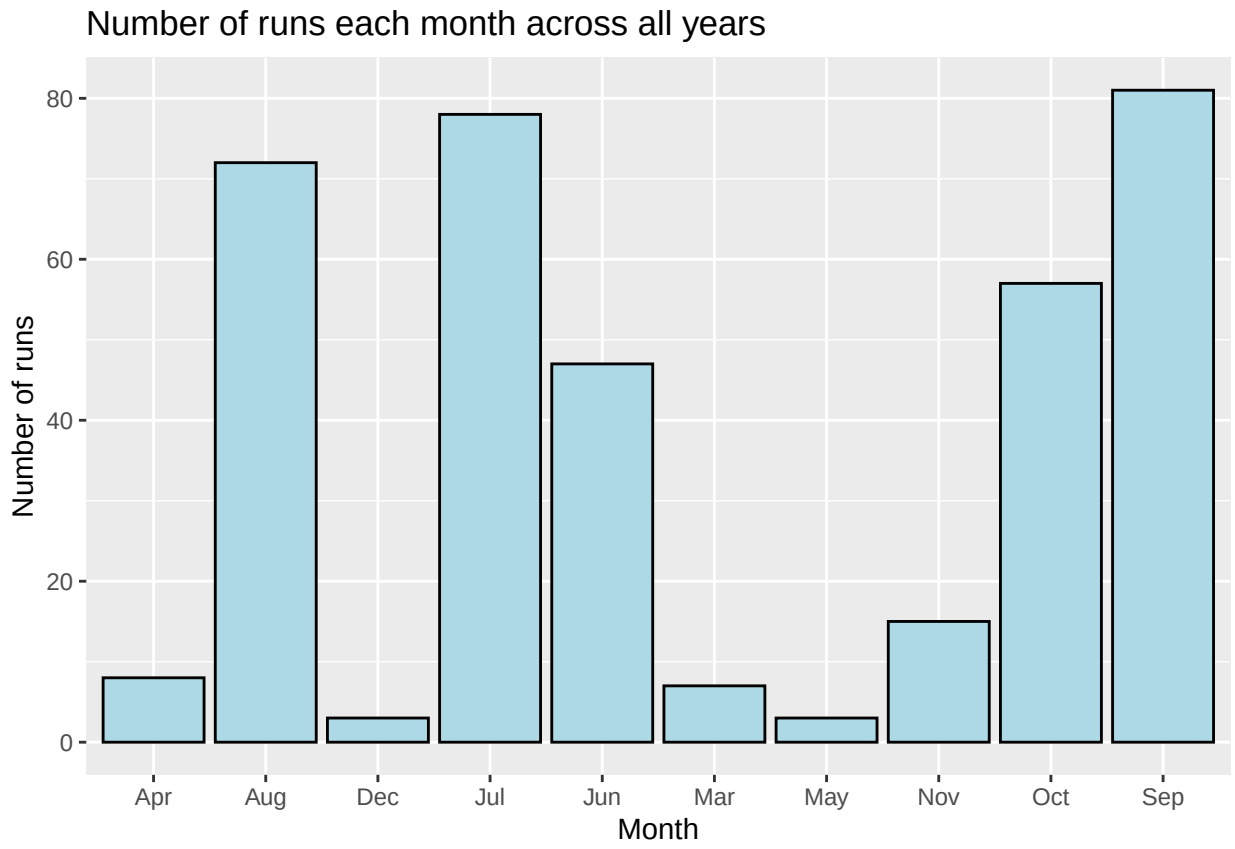
Run Distance Histogram

```
print(run_histogram)
```



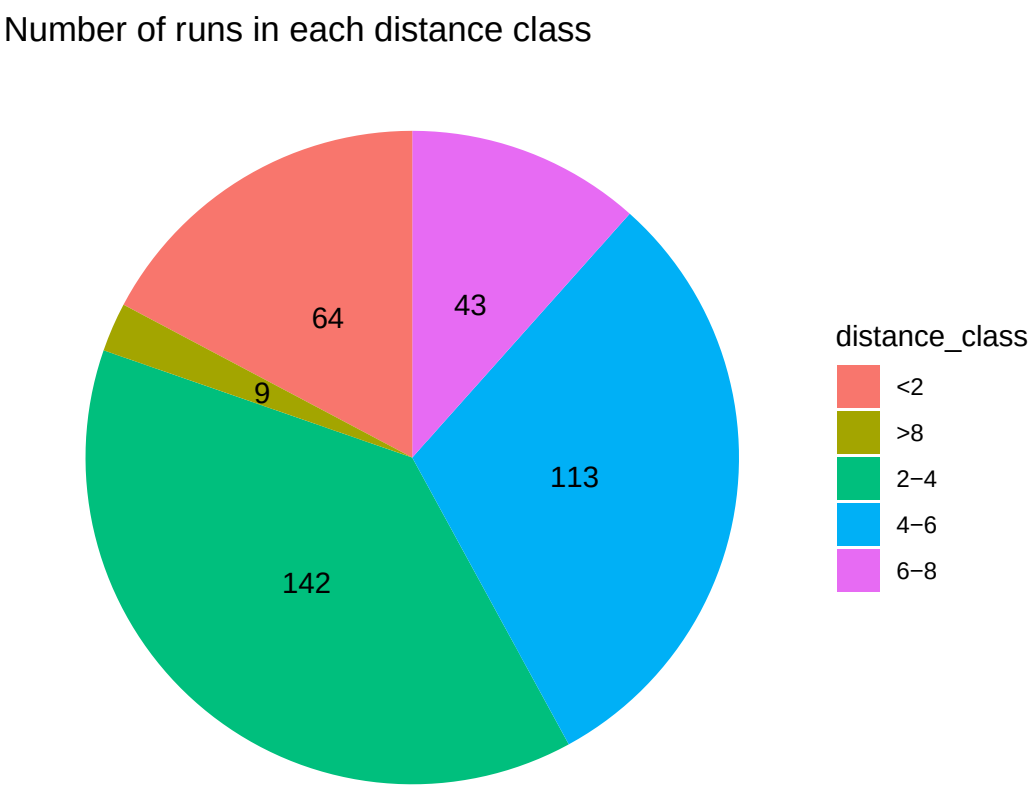
Runs in each month

```
print(monthly_runs)
```



Distance Class Pi Chart

```
print(distance_pie)
```


Number of runs in each distance class
64
9
142
113
43
distance_class
<2
>8
2−4
4−6
6−8