# Introduction to R Workshop

## Cal Poly Quantitative Analysis Club

Link to workshop slides

## Introduction to R

R is a programming language designed originally for *statistical analyses.*

## Variable Assignment

We assign objects in R using the syntax `object_name <- value`

```r
message <- "So long and thanks for all the fish"
message
```

```
[1] "So long and thanks for all the fish"
```

```r
year <- 2025
year
```

```
[1] 2025
```

```r
## Add the answer and earth_demolished below
```

## Functions & Function Arguments

- `vec` – object name
- `seq` – function name
- `from`, `to`, `by` – function arguments

```
vec <- seq(from = 1, to = 10, by = 2)
vec
```

```
[1] 1 3 5 7 9
```

```
# Other example base functionality
```

## Packages

```
# install.packages("tidyverse")
library(tidyverse)
```

## Create a graph with me! `ggplot`
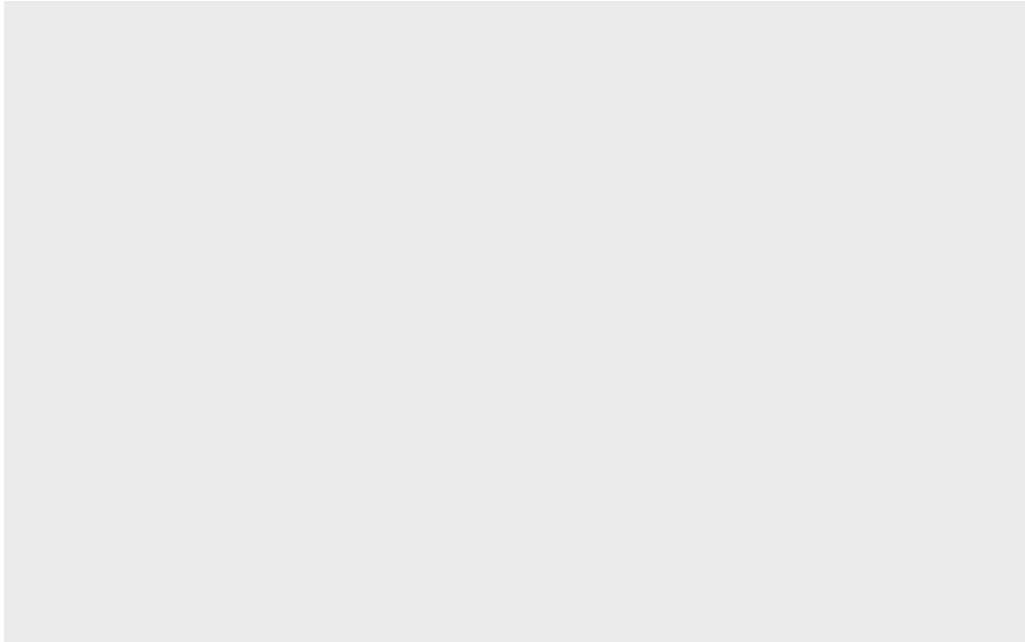
Let's load in the data – learn more about the Palmer Penguins data here.

```
library(palmerpenguins)
data(penguins)
head(penguins)
```

```
# A tibble: 6 x 8
  species island    bill_length_mm bill_depth_mm flipper_l~1 body_~2 sex    year
  <fct>   <fct>              <dbl>         <dbl>       <int>   <int> <fct> <int>
1 Adelie  Torgersen           39.1          18.7         181    3750 male   2007
2 Adelie  Torgersen           39.5          17.4         186    3800 fema~  2007
3 Adelie  Torgersen           40.3          18           195    3250 fema~  2007
4 Adelie  Torgersen           NA            NA            NA      NA <NA>   2007
5 Adelie  Torgersen           36.7          19.3         193    3450 fema~  2007
6 Adelie  Torgersen           39.3          20.6         190    3650 male   2007
# ... with abbreviated variable names 1: flipper_length_mm, 2: body_mass_g
```

Add the `ggplot` layers to the code below:

```
library(ggplot2)
ggplot(data = penguins)
```



## Download R/RStudio

1. Download and run the R installer for your operating system from CRAN:

   - Windows: https://cran.rstudio.com/bin/windows/base/
   - Mac: https://cran.rstudio.com/bin/macosx/ (double check your macOS version)
   - Linux: https://cran.rstudio.com/bin/linux/ (pick your distribution)

   If you are on Windows, you should also install the Rtools4 package; this will ensure you get fewer warnings later when installing packages.

   More detailed instructions for Windows are available here

2. Download and install the latest version of RStudio for your operating system.