Project Proposal

JRLK - Jess Ringness, Rebekah Kim, Laura Cai, Karen Dong

```
library(tidyverse)
library(tidymodels)
job_postings <-read.csv("data/job_postings.csv")
benefits <-read.csv("data/benefits.csv")
employee <-read.csv("data/employee_counts.csv")
```

```
benefits <- benefits |>
  select(-inferred) |>
  mutate(count = 1) |>
  pivot_wider(names_from = "type", values_from = "count")
```

```
jobs_employee <- job_postings |>
  left_join(employee, by = join_by("company_id"))
```

```
linkedin <- jobs_employee |>
  left_join(benefits, by = join_by("job_id"))

linkedin <- linkedin |> distinct(job_id, .keep_all = TRUE)
```

Introduction

...

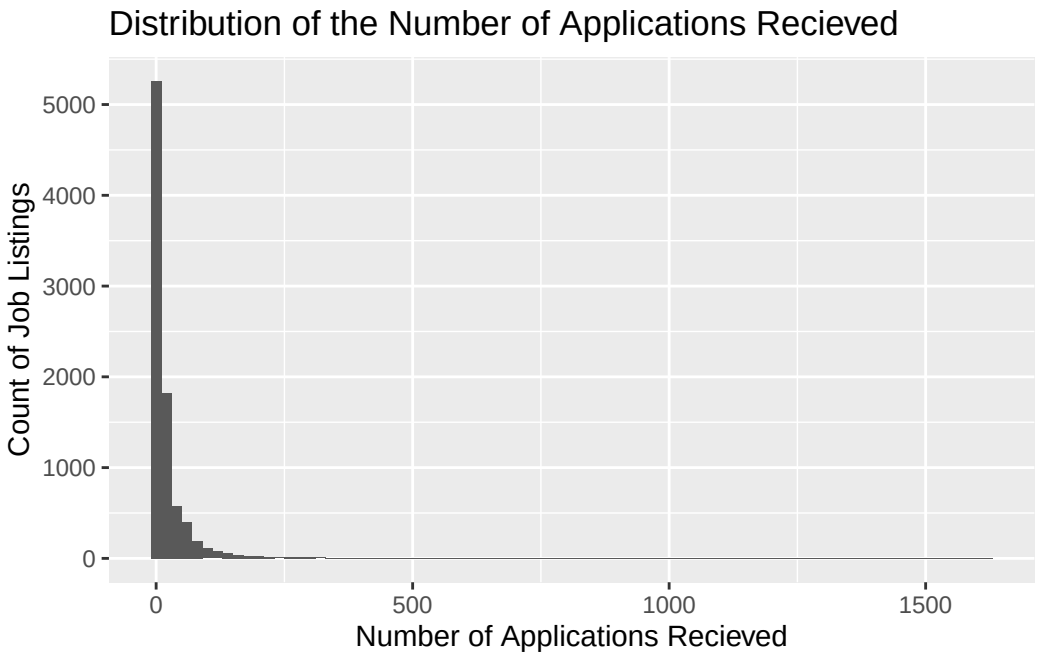
Data description

...

Initial exploratory data analysis

```
linkedin <- linkedin |>
  drop_na(applies)
```

```
linkedin |>
  ggplot(aes(x = applies)) +
  geom_histogram(binwidth = 20) +
  labs(x = "Number of Applications Recieved",
       y = "Count of Job Listings",
       title = "Distribution of the Number of Applications Recieved")
```




```
summary(linkedin$applies)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   1.00    2.00    6.00   22.83   21.00 1615.00
```

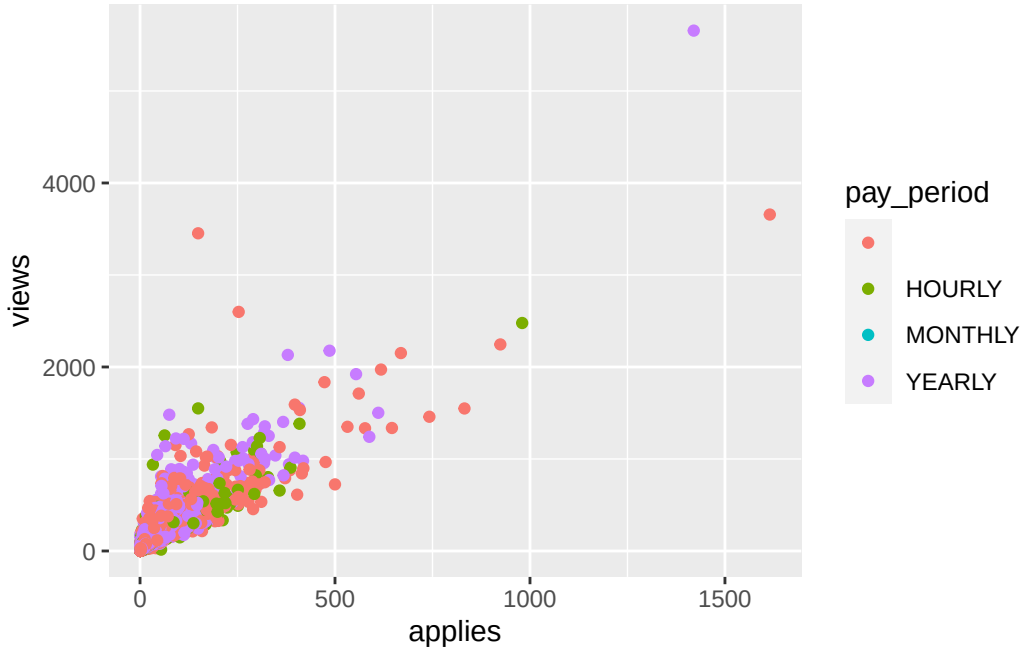
The distribution of the number of applications for a job listing on LinkedIn is right-skewed and uni-modal, with fewer applications for a job listing most prevalent. Given that the distribution

is skewed, the center is 4.00 applications, as estimated by the median. The IQR describing the spread of the middle 50% of data is 12 applications (13 - 1).

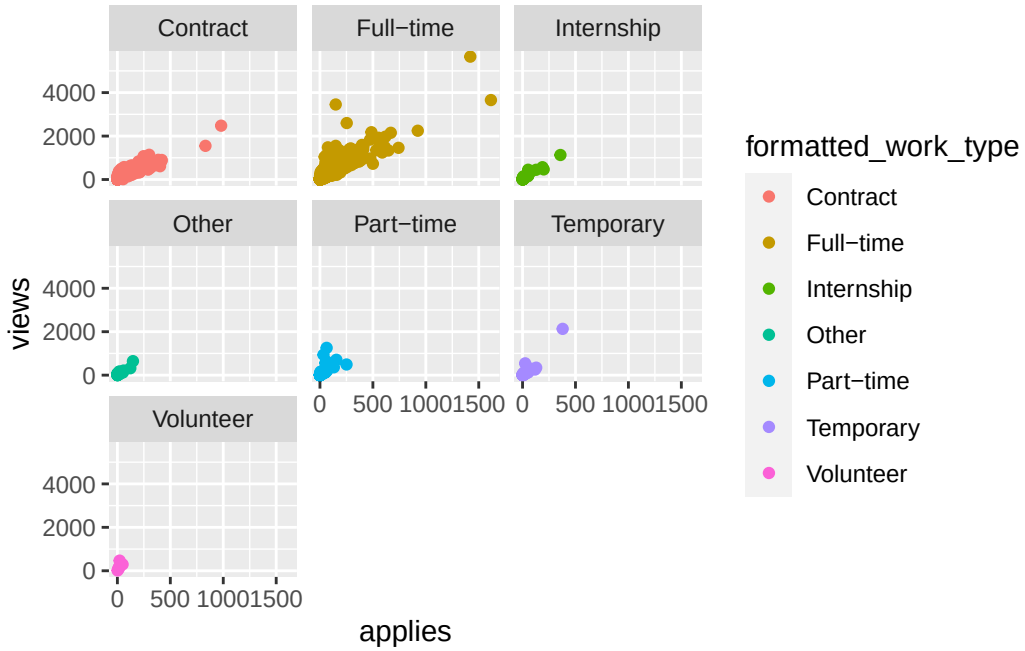
There are 2 major outliers with a number of applications greater than 1,000. One popular position is the Junior Software Engineer job listing at Brooksource, with 1615 total listings. Another job listing is for Customer Success Manager at Noom with 1420 applications.

```
job_postings |>
  ggplot(aes(x = applies, y = views, color = pay_period)) +
  geom_point() +
  facet_wrap(~pay_period)
```


```
job_postings |>
  ggplot(aes(x = applies, y = views, color = pay_period)) +
  geom_point()
```

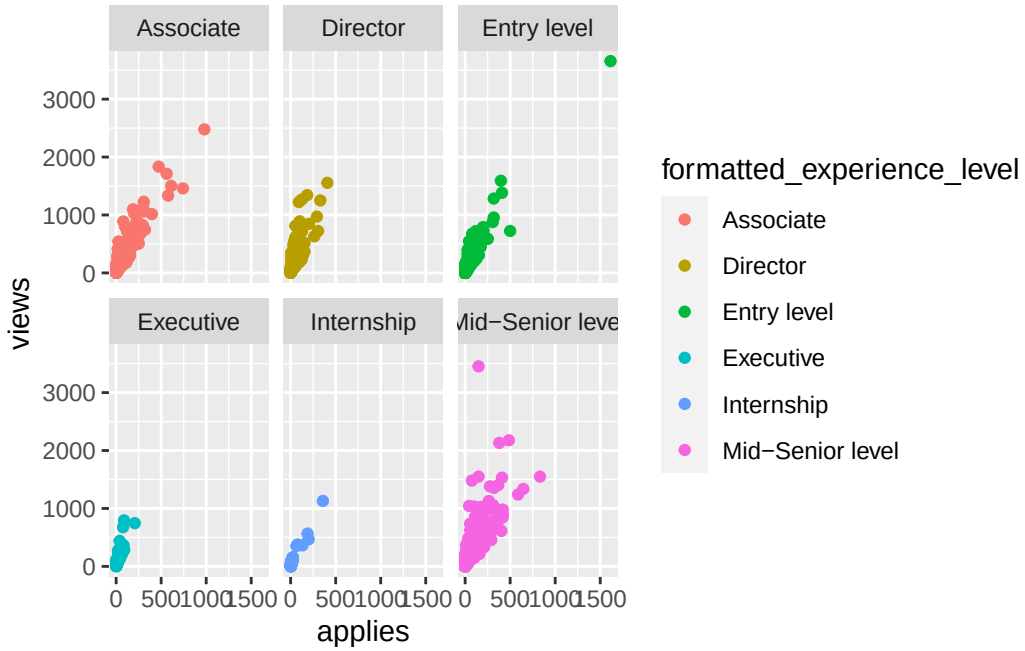



```
job_postings |>
  ggplot(aes(x = applies, y = views, color = formatted_work_type)) +
  geom_point() +
  facet_wrap(~formatted_work_type)
```

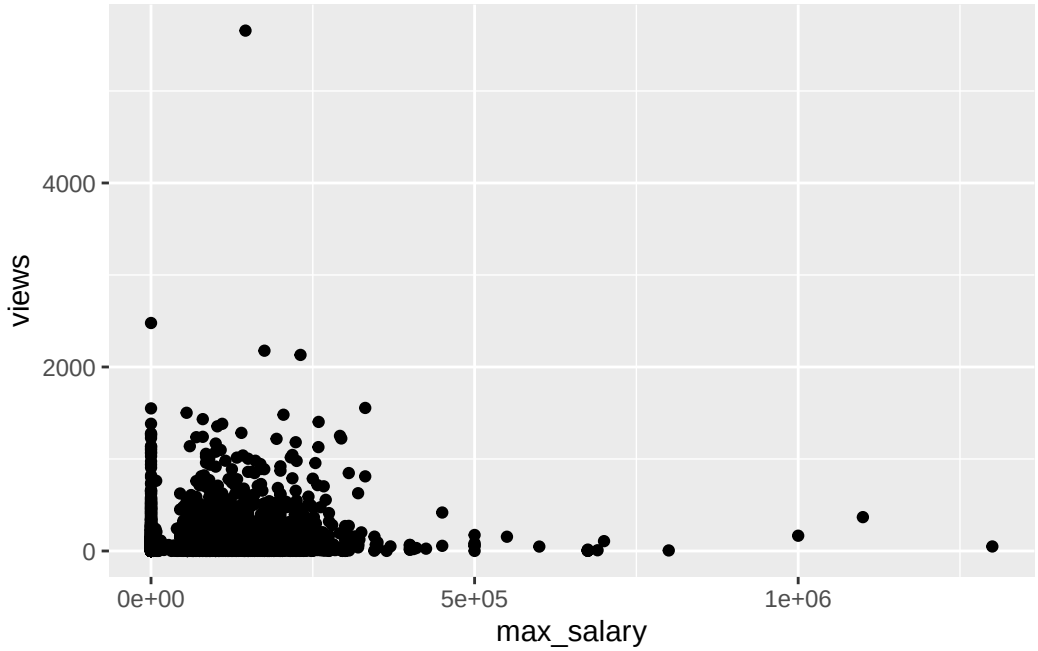



```
job_postings_exp_na <- job_postings |>
  drop_na(formatted_experience_level) |>
  filter(formatted_experience_level != "")
```

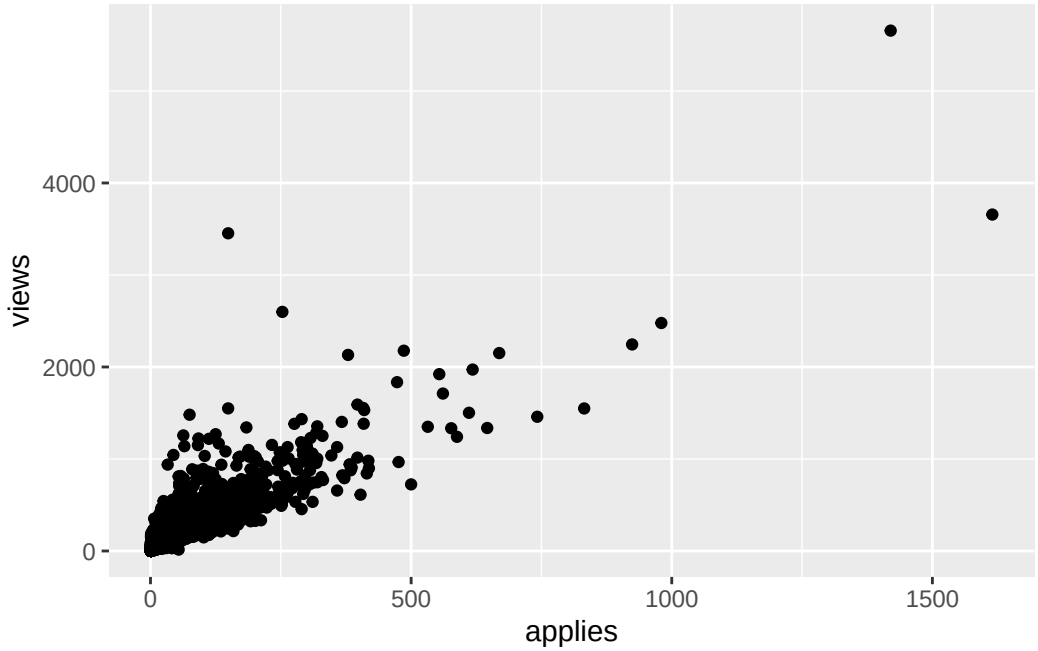
```
job_postings_exp_na |>
  ggplot(aes(x = applies, y = views, color = formatted_experience_level)) +
  geom_point() +
  facet_wrap(~formatted_experience_level)
```



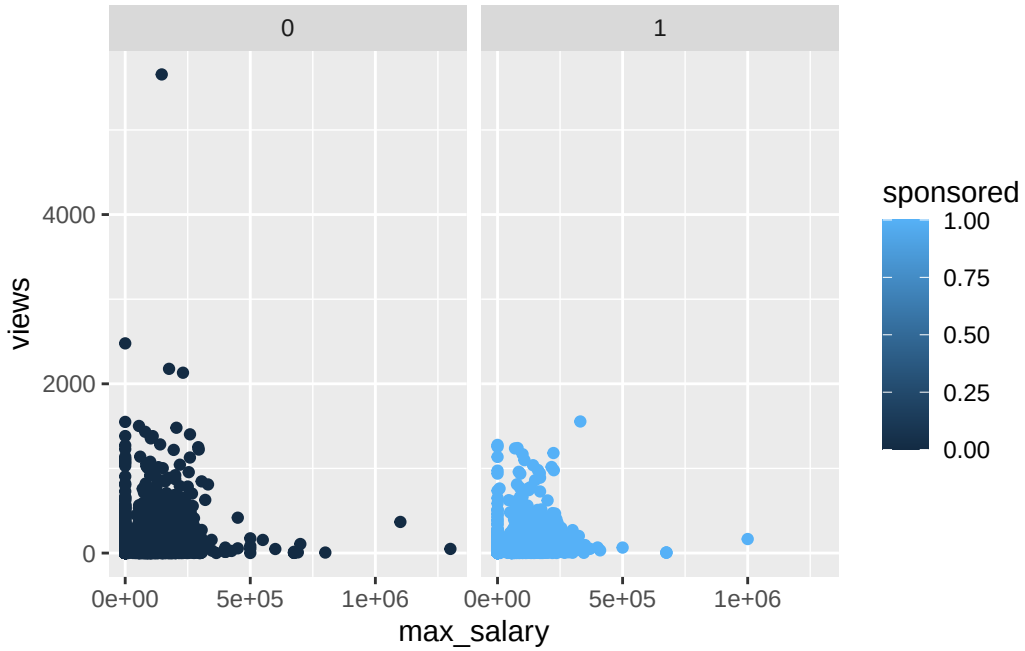

```
job_postings |>
  ggplot(aes(x = max_salary, y = views)) +
  geom_point()
```




```
job_postings |>
  ggplot(aes(x = applies, y = views)) +
  geom_point()
```




```
job_postings |>
  ggplot(aes(x = max_salary, y = views, color = sponsored)) +
  geom_point() +
  facet_wrap(~sponsored)
```




```
unique(job_postings$sponsored)
```

```
[1] 1 0
```

Analysis approach

...

Data dictionary

The data dictionary can be found here [Update the link and remove this note!]