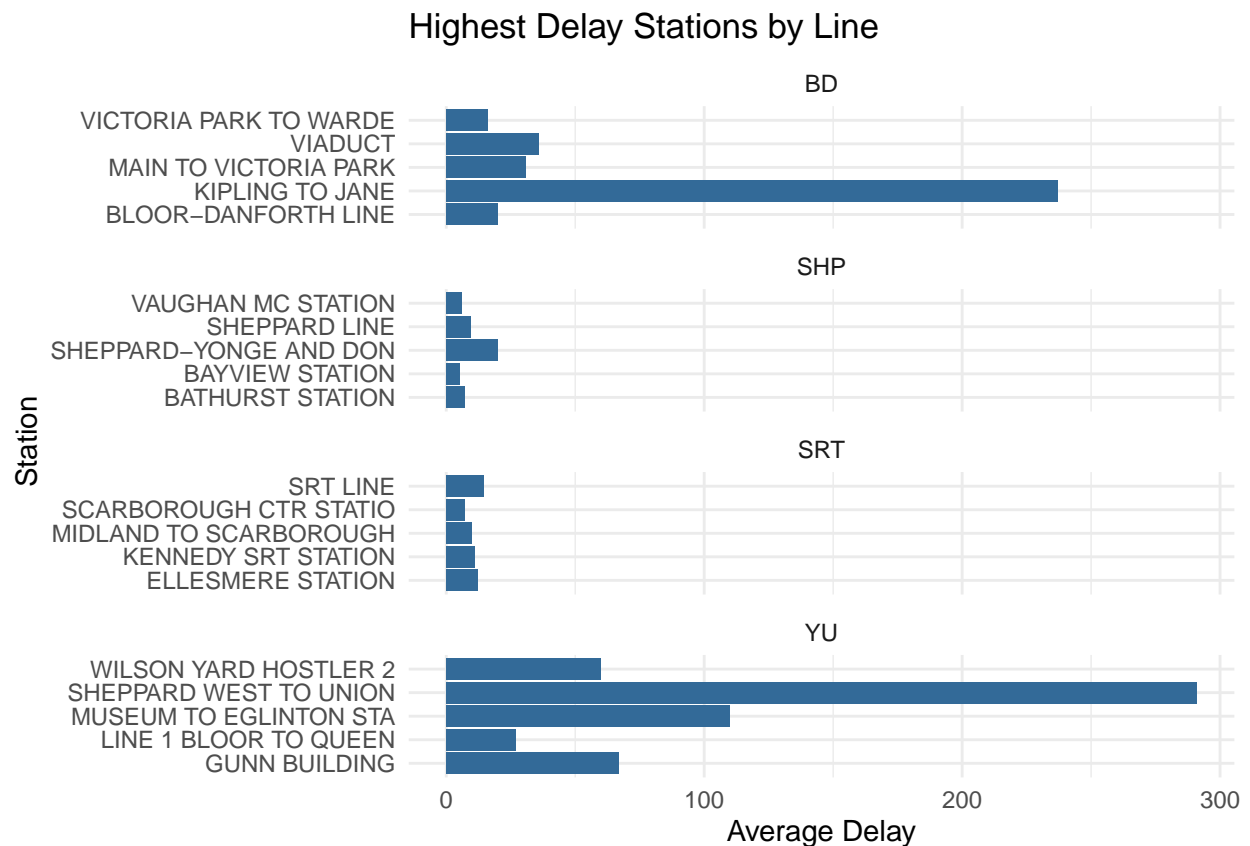


# STA2201 Lab #2

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Q1



Q2 & Q3

```
## # A tibble: 6 x 13
##   contributors~1 contr~2 contr~3 contr~4 contr~5 goods~6 contr~7 relat~8 presi~9
##   <chr>          <chr>   <chr>  <chr>   <chr>  <chr>   <chr>  <chr>   <chr>
## 1 A D'Angelo, T~ <NA>   M6A 1P5 300   Moneta~ <NA>   Indivi~ <NA>   <NA>
## 2 A Strazar, Ma~ <NA>   M2M 3B8 300   Moneta~ <NA>   Indivi~ <NA>   <NA>
## 3 A'Court, K Su~ <NA>   M4M 2J8 36    Moneta~ <NA>   Indivi~ <NA>   <NA>
## 4 A'Court, K Su~ <NA>   M4M 2J8 100   Moneta~ <NA>   Indivi~ <NA>   <NA>
## 5 A'Court, K Su~ <NA>   M4M 2J8 100   Moneta~ <NA>   Indivi~ <NA>   <NA>
## 6 Aaron, Robert~ <NA>   M6B 1H7 250   Moneta~ <NA>   Indivi~ <NA>   <NA>
```

```
## # ... with 4 more variables: authorized_representative <chr>, candidate <chr>,
## #   office <chr>, ward <chr>, and abbreviated variable names
## #   1: contributors_name, 2: contributors_address, 3: contributors_postal_code,
## #   4: contribution_amount, 5: contribution_type_desc,
## #   6: goods_or_service_desc, 7: contributor_type_desc,
## #   8: relationship_to_candidate, 9: president_business_manager
```

## Q4

### Summaries

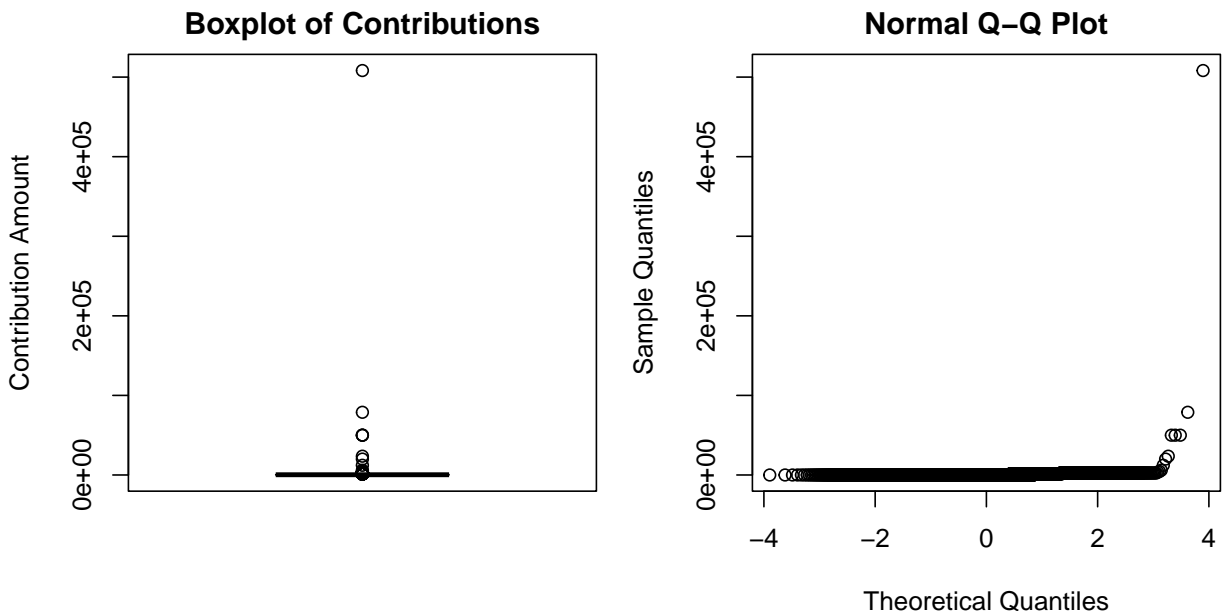
```
## contributors_name contributors_address contributors_postal_code
## Length:10199      Length:10199      Length:10199
## Class :character  Class :character  Class :character
## Mode :character   Mode :character   Mode :character
## contribution_amount contribution_type_desc goods_or_service_desc
## Length:10199      Length:10199      Length:10199
## Class :character  Class :character  Class :character
## Mode :character   Mode :character   Mode :character
## contributor_type_desc relationship_to_candidate president_business_manager
## Length:10199      Length:10199      Length:10199
## Class :character  Class :character  Class :character
## Mode :character   Mode :character   Mode :character
## authorized_representative candidate office
## Length:10199      Length:10199      Length:10199
## Class :character  Class :character  Class :character
## Mode :character   Mode :character   Mode :character
## ward
## Length:10199
## Class :character
## Mode :character
```

### NAs

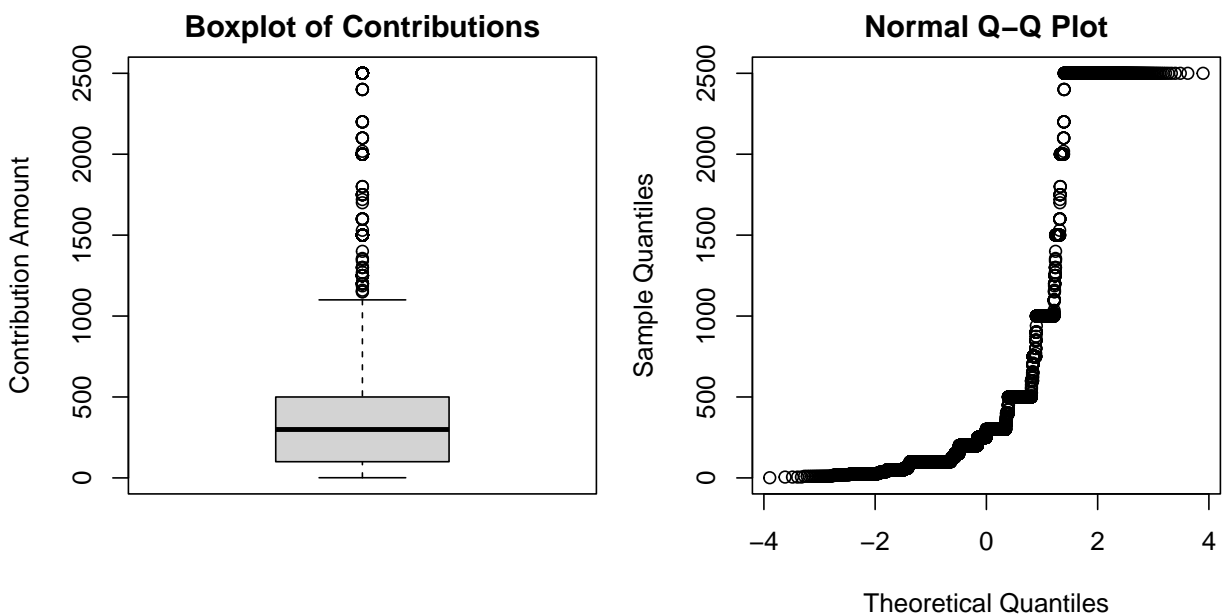
```
## contributors_name contributors_address
## 0 10197
## contributors_postal_code contribution_amount
## 0 0
## contribution_type_desc goods_or_service_desc
## 0 10188
## contributor_type_desc relationship_to_candidate
## 0 10166
## president_business_manager authorized_representative
## 10197 10197
## candidate office
## 0 0
## ward
## 10199
```

In this instance, we first find that the column tracking the amount of the contribution made is currently represented as a character value, which we will change to a numeric. Second, we notice that multiple columns have many NAs, and some are filled entirely with missing values, however, given the questions we will be looking at, this will not cause any major problems, thus we can move on with our inspection.

Q5



We notice that a large majority of the contributions made in this dataset are below \$3000. Examining the data more closely, we can see a relatively evenly spaced distribution of contributions up until \$2500, which is where many contributors reach their maximums. However, after \$2500, we can see that there are 11 more contributions that have been made. Among these, 10 of the contributions are made from the candidate to themselves, while the last remaining contribution has the lowest valuation and was in the form of a photography service. Thus, it clearly seems that the group of self-funding contributions are outliers in the data, and should be removed if we wish to inspect the distributions any further. We have also removed the photography service contribution for the sake of a better inspection of the distribution.



Finally, we can see a much clearer picture of the distribution of contribution amounts after removing the previous outliers. As we mentioned, a majority of these contributions are below \$2500, and the flat section on the qq-plot displays the significant number of contributors that contribute exactly \$2500.

## Q6

candidate	total_amount
Tory, John	2767868.7
Chow, Olivia	1638265.9
Ford, Doug	889897.3
Ford, Rob	387648.2
Stintz, Karen	242805.0

candidate	average_amount
Sniedzins, Erwin	2025.000
Syed, Himy	2018.000
Ritch, Carlie	1886.667
Ford, Doug	1456.460
Clarke, Kevin	1200.000

candidate	contributions_received
Chow, Olivia	5708
Tory, John	2602
Ford, Doug	611
Ford, Rob	538
Soknacki, David	314

## Q7

candidate	total_amount
Tory, John	2765368.7
Chow, Olivia	1634765.9
Ford, Doug	331172.6
Stintz, Karen	242805.0
Ford, Rob	174509.5

candidate	average_amount
Ritch, Carlie	1886.667
Sniedzins, Erwin	1866.667
Tory, John	1063.194
Gardner, Norman	1000.000
Tiwari, Ramnarine	1000.000

candidate	contributions_received
Chow, Olivia	5706
Tory, John	2601
Ford, Doug	608
Ford, Rob	531
Soknacki, David	314

## Q8

For all contributions, the total number of multi-contributors is:

```
## [1] 184
```

OR, without self-funding

```
## [1] 181
```