HW1 - Assignment 1

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Problem 1

Explore realdirect.com thinking about how buyers and sellers would navigate, and how the website is organized. Use the datasets provided for Bronx, Brooklyn, Manhattan, Queens, and Staten Island. Do the following: • Load in and clean the data. • Conduct exploratory data analysis in order to find out where there are outliers or missing values, decide how you will treat them, make sure the dates are formatted correctly, make sure values you think are numerical are being treated as such, etc. • Conduct exploratory data analysis to visualize and make comparisons for residential building category classes across boroughs and across time (select the following: 1-, 2-, and 3-family homes, coops, and condos). Use histograms, boxplots, scatterplots or other visual graphs. Provide summary statistics along with your conclusions.

Load and clean data sets

Total records loaded for individual boroughs

Summary of stats on the data frame displays class of sale price, gross. Sq. ft, land. Sq. Ft and sale date is character. Transformation needs to be applied to convert these to numeric and date fields respectively

```
summary(bdset)
```

```
##    borough          neighborhood       building.class.category
##  Length:85975       Length:85975       Length:85975
##  Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##  tax.class.at.present     block            lot           ease.ment
##  Length:85975         Min.   :    1   Min.   :   1.0   Length:85975
##  Class :character     1st Qu.: 1052   1st Qu.:  23.0   Class :character
##  Mode  :character     Median : 2157   Median :  51.0   Mode  :character
##                       Mean   : 3661   Mean   : 405.4
##                       3rd Qu.: 5599   3rd Qu.:1009.0
##                       Max.   :16323   Max.   :9117.0
##
##  building.class.at.present   address          apart.ment.number
##  Length:85975              Length:85975       Length:85975
##  Class :character          Class :character   Class :character
##  Mode  :character          Mode  :character   Mode  :character
```

```
##
##
##
##
##     zip.code     residential.units commercial.units    total.units
##  Min.   :    0   Min.   :  0.00    Min.   :  0.0000   Min.   :  0.000
##  1st Qu.:10028   1st Qu.:  0.00    1st Qu.:  0.0000   1st Qu.:  1.000
##  Median :11201   Median :  1.00    Median :  0.0000   Median :  1.000
##  Mean   :10758   Mean   :  1.96    Mean   :  0.2349   Mean   :  2.252
##  3rd Qu.:11238   3rd Qu.:  2.00    3rd Qu.:  0.0000   3rd Qu.:  2.000
##  Max.   :11694   Max.   :904.00    Max.   :604.0000   Max.   :904.000
##                  NA's   :3         NA's   :1          NA's   :4
##  land.square.feet   gross.square.feet    year.built   tax.class.at.time.of.sale
##  Length:85975       Length:85975       Min.   :   0   Min.   :1.000
##  Class :character   Class :character   1st Qu.:1910   1st Qu.:1.000
##  Mode  :character   Mode  :character   Median :1931   Median :2.000
##                                        Mean   :1681   Mean   :1.868
##                                        3rd Qu.:1964   3rd Qu.:2.000
##                                        Max.   :2013   Max.   :4.000
##                                                       NA's   :1
##  building.class.at.time.of.sale  sale.price         sale.date
##  Length:85975                   Length:85975       Length:85975
##  Class :character               Class :character   Class :character
##  Mode  :character               Mode  :character   Mode  :character
##
##
##
##
```

Define types and format date

```
# define types - numeric, date
bdset$land.square.feet <- as.numeric(gsub("[^[:digit:]]", "", bdset$land.square.feet))
bdset$gross.square.feet <- as.numeric(bdset$gross.square.feet)
```

```
## Warning: NAs introduced by coercion
```

```
bdset$sale.price <- as.numeric(gsub("[^[:digit:]]", "", bdset$sale.price))
bdset$sale.date <- as.Date(bdset$sale.date)
bdset$building.class.category <- trim(bdset$building.class.category)

summary(bdset)
```

```
##    borough          neighborhood       building.class.category
##  Length:85975       Length:85975       Length:85975
##  Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##  tax.class.at.present     block            lot          ease.ment
##  Length:85975         Min.   :    1   Min.   :   1.0   Length:85975
```

```
##  Class :character     1st Qu.: 1052   1st Qu.:  23.0   Class :character
##  Mode  :character     Median : 2157   Median :  51.0   Mode  :character
##                       Mean   : 3661   Mean   : 405.4
##                       3rd Qu.: 5599   3rd Qu.:1009.0
##                       Max.   :16323   Max.   :9117.0
##
##  building.class.at.present   address          apart.ment.number
##  Length:85975              Length:85975       Length:85975
##  Class :character          Class :character   Class :character
##  Mode  :character          Mode  :character   Mode  :character
##
##
##
##
##     zip.code     residential.units commercial.units    total.units
##  Min.   :    0   Min.   :  0.00    Min.   :  0.0000   Min.   :  0.000
##  1st Qu.:10028   1st Qu.:  0.00    1st Qu.:  0.0000   1st Qu.:  1.000
##  Median :11201   Median :  1.00    Median :  0.0000   Median :  1.000
##  Mean   :10758   Mean   :  1.96    Mean   :  0.2349   Mean   :  2.252
##  3rd Qu.:11238   3rd Qu.:  2.00    3rd Qu.:  0.0000   3rd Qu.:  2.000
##  Max.   :11694   Max.   :904.00    Max.   :604.0000   Max.   :904.000
##                  NA's   :3         NA's   :1          NA's   :4
##  land.square.feet  gross.square.feet   year.built   tax.class.at.time.of.sale
##  Min.   :      0   Min.   :  0.00    Min.   :   0   Min.   :1.000
##  1st Qu.:      0   1st Qu.:  0.00    1st Qu.:1910   1st Qu.:1.000
##  Median :   1512   Median :  0.00    Median :1931   Median :2.000
##  Mean   :   3085   Mean   : 26.17    Mean   :1681   Mean   :1.868
##  3rd Qu.:   2625   3rd Qu.:  0.00    3rd Qu.:1964   3rd Qu.:2.000
##  Max.   :7446955   Max.   :999.00    Max.   :2013   Max.   :4.000
##                    NA's   :41789                    NA's   :1
##  building.class.at.time.of.sale   sale.price          sale.date
##  Length:85975                  Min.   :         0   Min.   :2012-08-01
##  Class :character              1st Qu.:         0   1st Qu.:2012-11-07
##  Mode  :character              Median :    260000   Median :2013-01-24
##                                Mean   :    885098   Mean   :2013-01-30
##                                3rd Qu.:    620000   3rd Qu.:2013-05-02
##                                Max.   :1307965050   Max.   :2013-08-26
##
```

Missing values

```
# missing values
unique(bdset$building.class.category)
```

```
##  [1] "01  ONE FAMILY HOMES"
##  [2] "02  TWO FAMILY HOMES"
##  [3] "03  THREE FAMILY HOMES"
##  [4] "05  TAX CLASS 1 VACANT LAND"
##  [5] "07  RENTALS - WALKUP APARTMENTS"
##  [6] "10  COOPS - ELEVATOR APARTMENTS"
##  [7] "14  RENTALS - 4-10 UNIT"
##  [8] "22  STORE BUILDINGS"
##  [9] "27  FACTORIES"
```

```
## [10] "29  COMMERCIAL GARAGES"
## [11] "30  WAREHOUSES"
## [12] "31  COMMERCIAL VACANT LAND"
## [13] "41  TAX CLASS 4 - OTHER"
## [14] "04  TAX CLASS 1 CONDOS"
## [15] "06  TAX CLASS 1 - OTHER"
## [16] "21  OFFICE BUILDINGS"
## [17] "28  COMMERCIAL CONDOS"
## [18] "08  RENTALS - ELEVATOR APARTMENTS"
## [19] "09  COOPS - WALKUP APARTMENTS"
## [20] "13  CONDOS - ELEVATOR APARTMENTS"
## [21] ""
## [22] "12  CONDOS - WALKUP APARTMENTS"
## [23] "36  OUTDOOR RECREATIONAL FACILITIES"
## [24] "11A CONDO-RENTALS"
## [25] "38  ASYLUMS AND HOMES"
## [26] "37  RELIGIOUS FACILITIES"
## [27] "17  CONDOPS"
## [28] "32  HOSPITAL AND HEALTH FACILITIES"
## [29] "40  SELECTED GOVERNMENTAL FACILITIES"
## [30] "33  EDUCATIONAL FACILITIES"
## [31] "35  INDOOR PUBLIC AND CULTURAL FACILITIES"
## [32] "15  CONDOS - 2-10 UNIT RESIDENTIAL"
## [33] "18  TAX CLASS 3 - UTILITY PROPERTIES"
## [34] "16  CONDOS - 2-10 UNIT WITH COMMERCIAL UNIT"
## [35] "23  LOFT BUILDINGS"
## [36] "26  OTHER HOTELS"
## [37] "25  LUXURY HOTELS"
## [38] "34  THEATRES"
## [39] "24  TAX CLASS 4 - UTILITY BUREAU PROPERTIES"
## [40] "11  SPECIAL CONDO BILLING LOTS"
```

```
bdset <- bdset %>% mutate(building.class.category = na_if(building.class.category,
    ""))
unique(bdset$building.class.category)
```

```
##  [1] "01  ONE FAMILY HOMES"
##  [2] "02  TWO FAMILY HOMES"
##  [3] "03  THREE FAMILY HOMES"
##  [4] "05  TAX CLASS 1 VACANT LAND"
##  [5] "07  RENTALS - WALKUP APARTMENTS"
##  [6] "10  COOPS - ELEVATOR APARTMENTS"
##  [7] "14  RENTALS - 4-10 UNIT"
##  [8] "22  STORE BUILDINGS"
##  [9] "27  FACTORIES"
## [10] "29  COMMERCIAL GARAGES"
## [11] "30  WAREHOUSES"
## [12] "31  COMMERCIAL VACANT LAND"
## [13] "41  TAX CLASS 4 - OTHER"
## [14] "04  TAX CLASS 1 CONDOS"
## [15] "06  TAX CLASS 1 - OTHER"
## [16] "21  OFFICE BUILDINGS"
## [17] "28  COMMERCIAL CONDOS"
## [18] "08  RENTALS - ELEVATOR APARTMENTS"
```

```
## [19] "09  COOPS - WALKUP APARTMENTS"
## [20] "13  CONDOS - ELEVATOR APARTMENTS"
## [21] NA
## [22] "12  CONDOS - WALKUP APARTMENTS"
## [23] "36  OUTDOOR RECREATIONAL FACILITIES"
## [24] "11A CONDO-RENTALS"
## [25] "38  ASYLUMS AND HOMES"
## [26] "37  RELIGIOUS FACILITIES"
## [27] "17  CONDOPS"
## [28] "32  HOSPITAL AND HEALTH FACILITIES"
## [29] "40  SELECTED GOVERNMENTAL FACILITIES"
## [30] "33  EDUCATIONAL FACILITIES"
## [31] "35  INDOOR PUBLIC AND CULTURAL FACILITIES"
## [32] "15  CONDOS - 2-10 UNIT RESIDENTIAL"
## [33] "18  TAX CLASS 3 - UTILITY PROPERTIES"
## [34] "16  CONDOS - 2-10 UNIT WITH COMMERCIAL UNIT"
## [35] "23  LOFT BUILDINGS"
## [36] "26  OTHER HOTELS"
## [37] "25  LUXURY HOTELS"
## [38] "34  THEATRES"
## [39] "24  TAX CLASS 4 - UTILITY BUREAU PROPERTIES"
## [40] "11  SPECIAL CONDO BILLING LOTS"
```

```
bdset$building.class.category <- as.factor(bdset$building.class.category)
summary(bdset$building.class.category)
```

```
##                        01  ONE FAMILY HOMES
##                                     14846
##                        02  TWO FAMILY HOMES
##                                     13678
##                      03  THREE FAMILY HOMES
##                                      4135
##                      04  TAX CLASS 1 CONDOS
##                                      1251
##                  05  TAX CLASS 1 VACANT LAND
##                                      1230
##                     06  TAX CLASS 1 - OTHER
##                                       180
##             07  RENTALS - WALKUP APARTMENTS
##                                      3989
##           08  RENTALS - ELEVATOR APARTMENTS
##                                       581
##               09  COOPS - WALKUP APARTMENTS
##                                      2600
##             10  COOPS - ELEVATOR APARTMENTS
##                                     13771
##              11  SPECIAL CONDO BILLING LOTS
##                                         1
##                          11A CONDO-RENTALS
##                                        34
##              12  CONDOS - WALKUP APARTMENTS
##                                       929
##            13  CONDOS - ELEVATOR APARTMENTS
##                                     13313
```

```
##                     14  RENTALS - 4-10 UNIT
##                                          821
##          15  CONDOS - 2-10 UNIT RESIDENTIAL
##                                         1123
## 16  CONDOS - 2-10 UNIT WITH COMMERCIAL UNIT
##                                           85
##                                  17  CONDOPS
##                                         1415
##        18  TAX CLASS 3 - UTILITY PROPERTIES
##                                            6
##                          21  OFFICE BUILDINGS
##                                          432
##                           22  STORE BUILDINGS
##                                         1244
##                            23  LOFT BUILDINGS
##                                          144
## 24  TAX CLASS 4 - UTILITY BUREAU PROPERTIES
##                                            1
##                              25  LUXURY HOTELS
##                                         1647
##                               26  OTHER HOTELS
##                                           40
##                                  27  FACTORIES
##                                          346
##                          28  COMMERCIAL CONDOS
##                                         1682
##                         29  COMMERCIAL GARAGES
##                                          888
##                                  30  WAREHOUSES
##                                          430
##                  31  COMMERCIAL VACANT LAND
##                                          464
##          32  HOSPITAL AND HEALTH FACILITIES
##                                           38
##                  33  EDUCATIONAL FACILITIES
##                                           63
##                                  34  THEATRES
##                                            9
##   35  INDOOR PUBLIC AND CULTURAL FACILITIES
##                                           28
##         36  OUTDOOR RECREATIONAL FACILITIES
##                                           14
##                     37  RELIGIOUS FACILITIES
##                                          102
##                        38  ASYLUMS AND HOMES
##                                           13
##        40  SELECTED GOVERNMENTAL FACILITIES
##                                            7
##                       41  TAX CLASS 4 - OTHER
##                                          191
##                                         NA's
##                                         4204
```

```r
bdset$borough <- as.factor(bdset$borough)
summary(bdset)
```

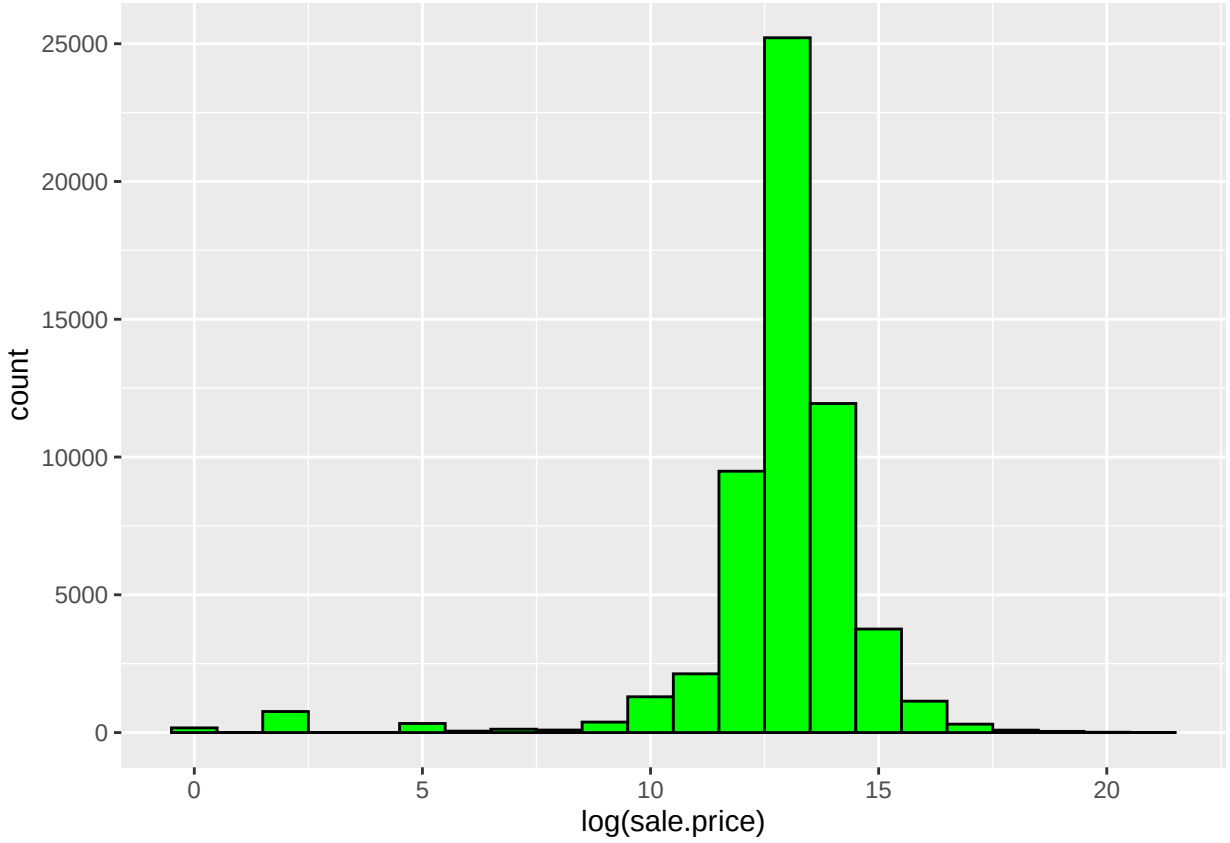
```
##          borough      neighborhood
##  bronx       : 5268   Length:85975
##  brooklyn    :23373   Class :character
##  manhattan   :27395   Mode  :character
##  queens      :23583
##  statenisland: 6356
##
##
##                      building.class.category tax.class.at.present
##  01  ONE FAMILY HOMES            :14846      Length:85975
##  10  COOPS - ELEVATOR APARTMENTS :13771      Class :character
##  02  TWO FAMILY HOMES            :13678      Mode  :character
##  13  CONDOS - ELEVATOR APARTMENTS:13313
##  03  THREE FAMILY HOMES          : 4135
##  (Other)                         :22028
##  NA's                            : 4204
##      block            lot           ease.ment         building.class.at.present
##  Min.   :    1   Min.   :   1.0   Length:85975       Length:85975
##  1st Qu.: 1052   1st Qu.:  23.0   Class :character   Class :character
##  Median : 2157   Median :  51.0   Mode  :character   Mode  :character
##  Mean   : 3661   Mean   : 405.4
##  3rd Qu.: 5599   3rd Qu.:1009.0
##  Max.   :16323   Max.   :9117.0
##
##    address          apart.ment.number     zip.code     residential.units
##  Length:85975       Length:85975       Min.   :    0   Min.   :  0.00
##  Class :character   Class :character   1st Qu.:10028   1st Qu.:  0.00
##  Mode  :character   Mode  :character   Median :11201   Median :  1.00
##                                        Mean   :10758   Mean   :  1.96
##                                        3rd Qu.:11238   3rd Qu.:  2.00
##                                        Max.   :11694   Max.   :904.00
##                                                        NA's   :3
##  commercial.units    total.units      land.square.feet  gross.square.feet
##  Min.   :  0.0000   Min.   :  0.000   Min.   :      0   Min.   :  0.00
##  1st Qu.:  0.0000   1st Qu.:  1.000   1st Qu.:      0   1st Qu.:  0.00
##  Median :  0.0000   Median :  1.000   Median :   1512   Median :  0.00
##  Mean   :  0.2349   Mean   :  2.252   Mean   :   3085   Mean   : 26.17
##  3rd Qu.:  0.0000   3rd Qu.:  2.000   3rd Qu.:   2625   3rd Qu.:  0.00
##  Max.   :604.0000   Max.   :904.000   Max.   :7446955   Max.   :999.00
##  NA's   :1          NA's   :4                           NA's   :41789
##    year.built   tax.class.at.time.of.sale building.class.at.time.of.sale
##  Min.   :   0   Min.   :1.000             Length:85975
##  1st Qu.:1910   1st Qu.:1.000             Class :character
##  Median :1931   Median :2.000             Mode  :character
##  Mean   :1681   Mean   :1.868
##  3rd Qu.:1964   3rd Qu.:2.000
##  Max.   :2013   Max.   :4.000
##                 NA's   :1
##    sale.price          sale.date
##  Min.   :         0   Min.   :2012-08-01
```

```
##  1st Qu.:         0   1st Qu.:2012-11-07
##  Median :    260000   Median :2013-01-24
##  Mean   :    885098   Mean   :2013-01-30
##  3rd Qu.:    620000   3rd Qu.:2013-05-02
##  Max.   :1307965050   Max.   :2013-08-26
##
```

Outlier in sales price in log scale can be observed based on IQR and histogram. i.e Sale price < 10 and Sale price > 15

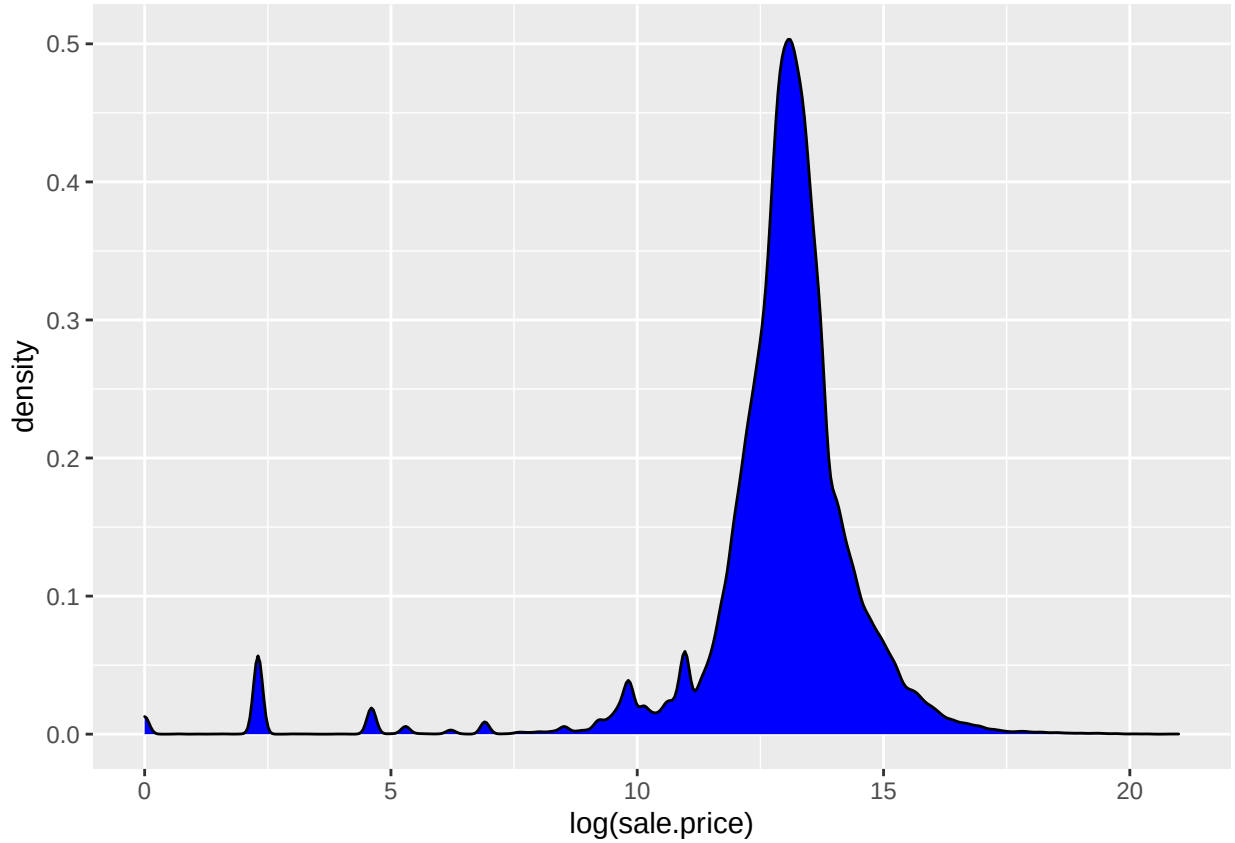
```
bdset1 <- bdset
ggplot(bdset1, mapping = aes(x = log(sale.price))) + geom_histogram(binwidth = 1,
    fill = "green", color = "black")
```

```
## Warning: Removed 28638 rows containing non-finite values (stat_bin).
```



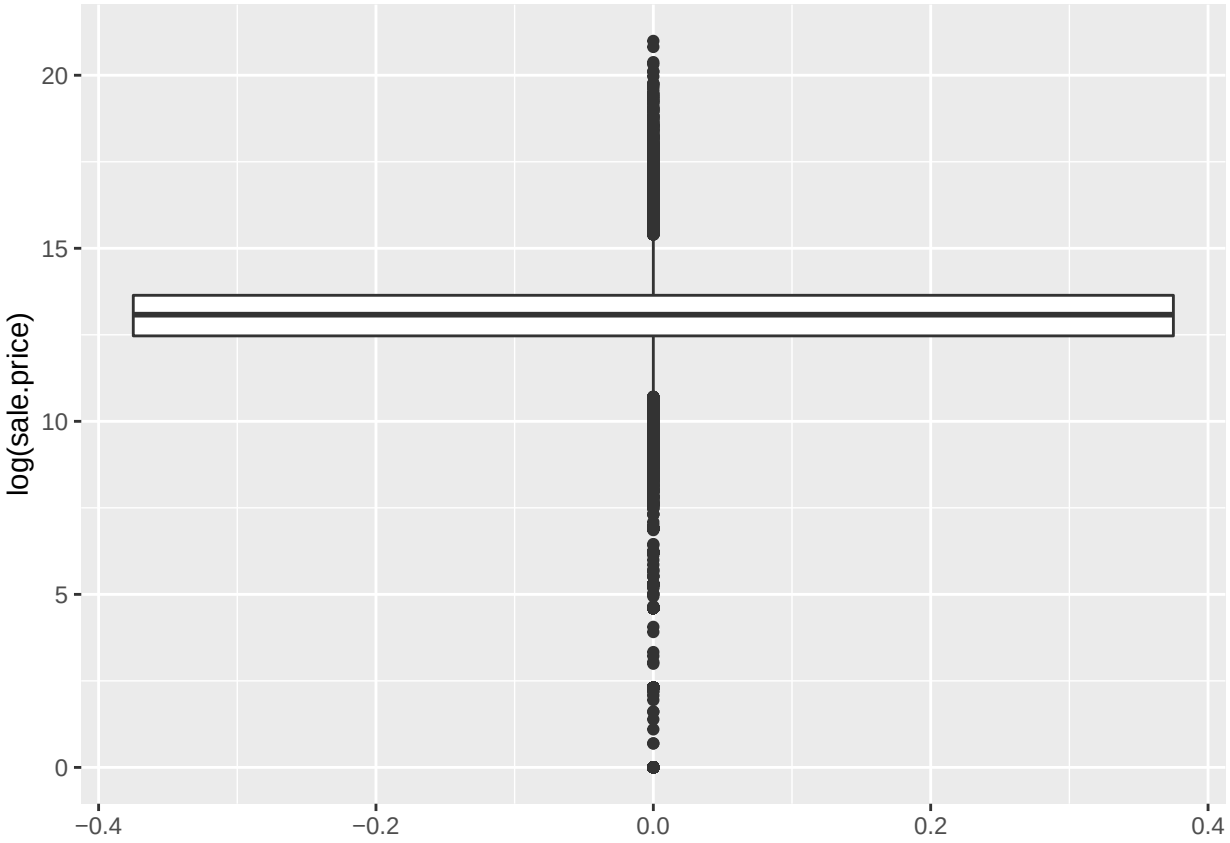

```
ggplot(bdset1, mapping = aes(x = log(sale.price))) + geom_density(fill = "blue")
```

```
## Warning: Removed 28638 rows containing non-finite values (stat_density).
```




```
ggplot(bdset1) + geom_boxplot(mapping = aes(y = log(sale.price)))
```

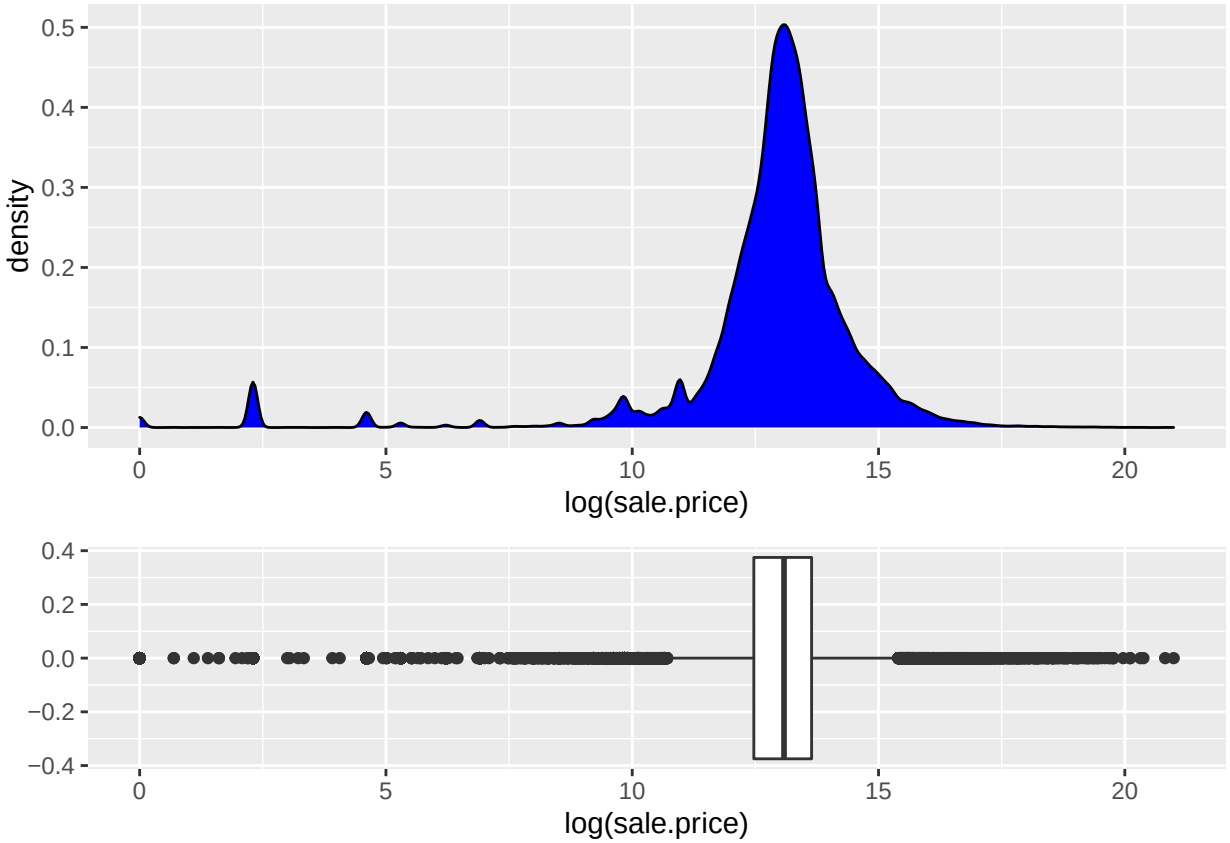
```
## Warning: Removed 28638 rows containing non-finite values (stat_boxplot).
```




```
egg::ggarrange(ggplot(bdset1, mapping = aes(x = log(sale.price))) + geom_density(fill = "blue"),
    ggplot(bdset1) + geom_boxplot(mapping = aes(x = log(sale.price))), heights = 2:1)
```

```
## Warning: Removed 28638 rows containing non-finite values (stat_density).
```

```
## Warning: Removed 28638 rows containing non-finite values (stat_boxplot).
```



Filtering categories for 1/2/3 Family Home, Coops and condos. Filtering outlier on sale.price and required building class categories

```
bdset1 <- bdset %>% mutate(sale.date.mw = floor_date(sale.date, "month"))
bdset1 <- bdset1 %>% mutate(buildingclasscat = case_when(building.class.category ==
    "01  ONE FAMILY HOMES" ~ "1 FH", building.class.category == "02  TWO FAMILY HOMES" ~
    "2 FH", building.class.category == "03  THREE FAMILY HOMES" ~ "3 FH", grepl("COOPS",
    building.class.category) == TRUE ~ "COOPS", grepl("CONDOS", building.class.category) ==
    TRUE ~ "CONDOS", TRUE ~ "NA"))
bdset1$buildingclasscat <- as.factor(bdset1$buildingclasscat)
bdset2 <- bdset1 %>% filter(log(sale.price) > 5, log(sale.price) <= 15, buildingclasscat %in%
    c("1 FH", "2 FH", "3 FH", "COOPS", "CONDOS"))
summary(bdset2)
```

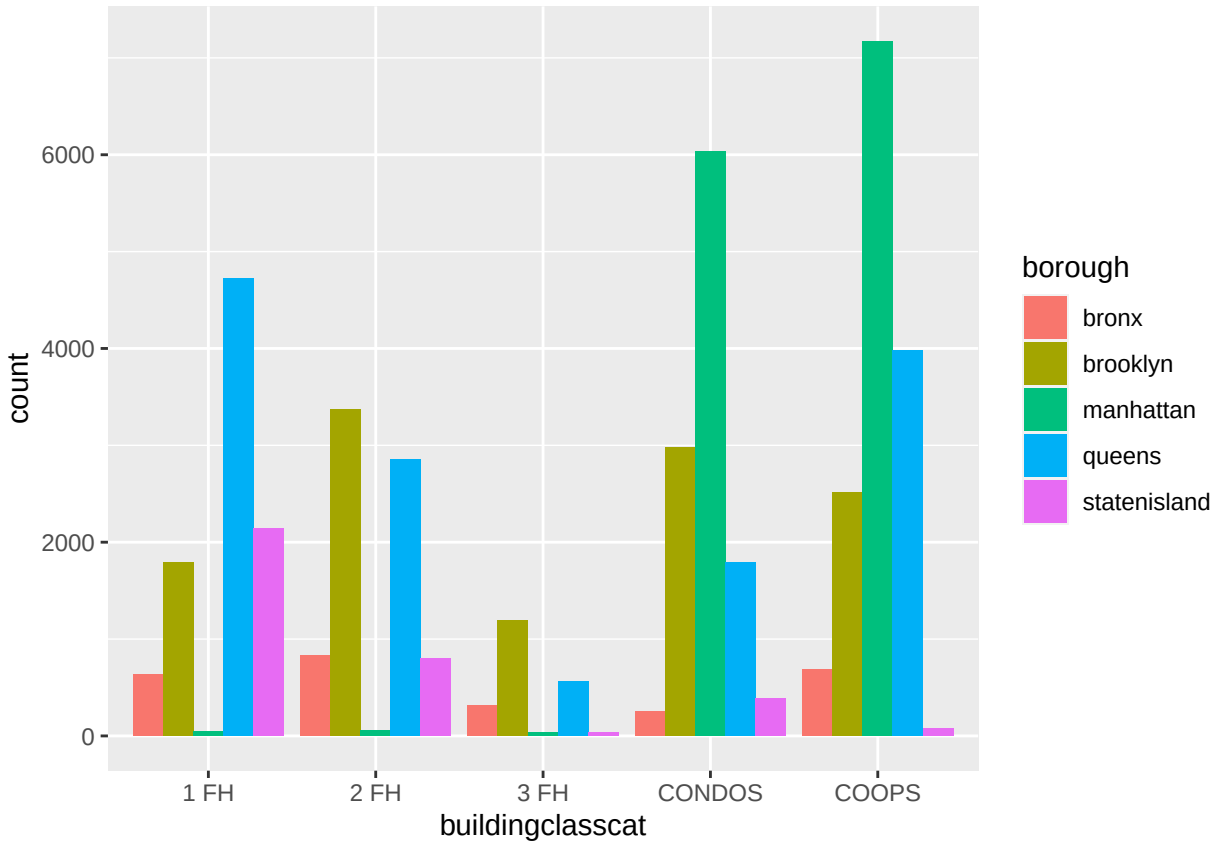
```
##          borough      neighborhood
##  bronx       : 2715   Length:45243
##  brooklyn    :11845   Class :character
##  manhattan   :13339   Mode  :character
##  queens      :13916
##  statenisland: 3428
##
##
##                      building.class.category tax.class.at.present
##  10  COOPS - ELEVATOR APARTMENTS :12077      Length:45243
##  01  ONE FAMILY HOMES            : 9322      Class :character
##  13  CONDOS - ELEVATOR APARTMENTS: 8500      Mode  :character
```

```
##  02  TWO FAMILY HOMES            : 7916
##  09  COOPS - WALKUP APARTMENTS   : 2346
##  03  THREE FAMILY HOMES          : 2137
##  (Other)                         : 2945
##      block            lot          ease.ment         building.class.at.present
##  Min.   :    1   Min.   :   1.0   Length:45243       Length:45243
##  1st Qu.: 1179   1st Qu.:  20.0   Class :character   Class :character
##  Median : 2298   Median :  49.0   Mode  :character   Mode  :character
##  Mean   : 3853   Mean   : 379.7
##  3rd Qu.: 5913   3rd Qu.:1002.0
##  Max.   :16320   Max.   :9034.0
##
##    address          apart.ment.number     zip.code     residential.units
##  Length:45243       Length:45243       Min.   :    0   Min.   :  0.000
##  Class :character   Class :character   1st Qu.:10038   1st Qu.:  0.000
##  Mode  :character   Mode  :character   Median :11206   Median :  1.000
##                                        Mean   :10799   Mean   :  1.052
##                                        3rd Qu.:11356   3rd Qu.:  1.000
##                                        Max.   :11694   Max.   :437.000
##
##  commercial.units   total.units      land.square.feet gross.square.feet
##  Min.   :0.00000   Min.   :  0.000   Min.   :     0   Min.   :  0.00
##  1st Qu.:0.00000   1st Qu.:  0.000   1st Qu.:     0   1st Qu.:  0.00
##  Median :0.00000   Median :  1.000   Median :     0   Median :  0.00
##  Mean   :0.01837   Mean   :  1.079   Mean   :  1339   Mean   : 26.31
##  3rd Qu.:0.00000   3rd Qu.:  1.000   3rd Qu.:  2242   3rd Qu.:  0.00
##  Max.   :9.00000   Max.   :437.000   Max.   :333700   Max.   :999.00
##                                                       NA's   :18555
##    year.built   tax.class.at.time.of.sale building.class.at.time.of.sale
##  Min.   :   0   Min.   :1.000             Length:45243
##  1st Qu.:1920   1st Qu.:1.000             Class :character
##  Median :1940   Median :2.000             Mode  :character
##  Mean   :1797   Mean   :1.577
##  3rd Qu.:1963   3rd Qu.:2.000
##  Max.   :2012   Max.   :4.000
##                 NA's   :1
##    sale.price        sale.date           sale.date.mw        buildingclasscat
##  Min.   :    200   Min.   :2012-08-01   Min.   :2012-08-01   1 FH  : 9322
##  1st Qu.: 285000   1st Qu.:2012-11-07   1st Qu.:2012-11-01   2 FH  : 7916
##  Median : 469000   Median :2013-02-07   Median :2013-02-01   3 FH  : 2137
##  Mean   : 618969   Mean   :2013-02-06   Mean   :2013-01-21   CONDOS:11445
##  3rd Qu.: 745000   3rd Qu.:2013-05-15   3rd Qu.:2013-05-01   COOPS :14423
##  Max.   :3262673   Max.   :2013-08-26   Max.   :2013-08-01   NA    :    0
##
```

Data analysis

Plotting bar chart of building class category against borough, we can see number of Condos and Coops were sold more in Manhattan compared to other boroughs. Queens has highest number of single family homes sold while two family homes are were sold more in brooklyn and with queens beeing the next highest. Three family homes sales were not as much as the other categories

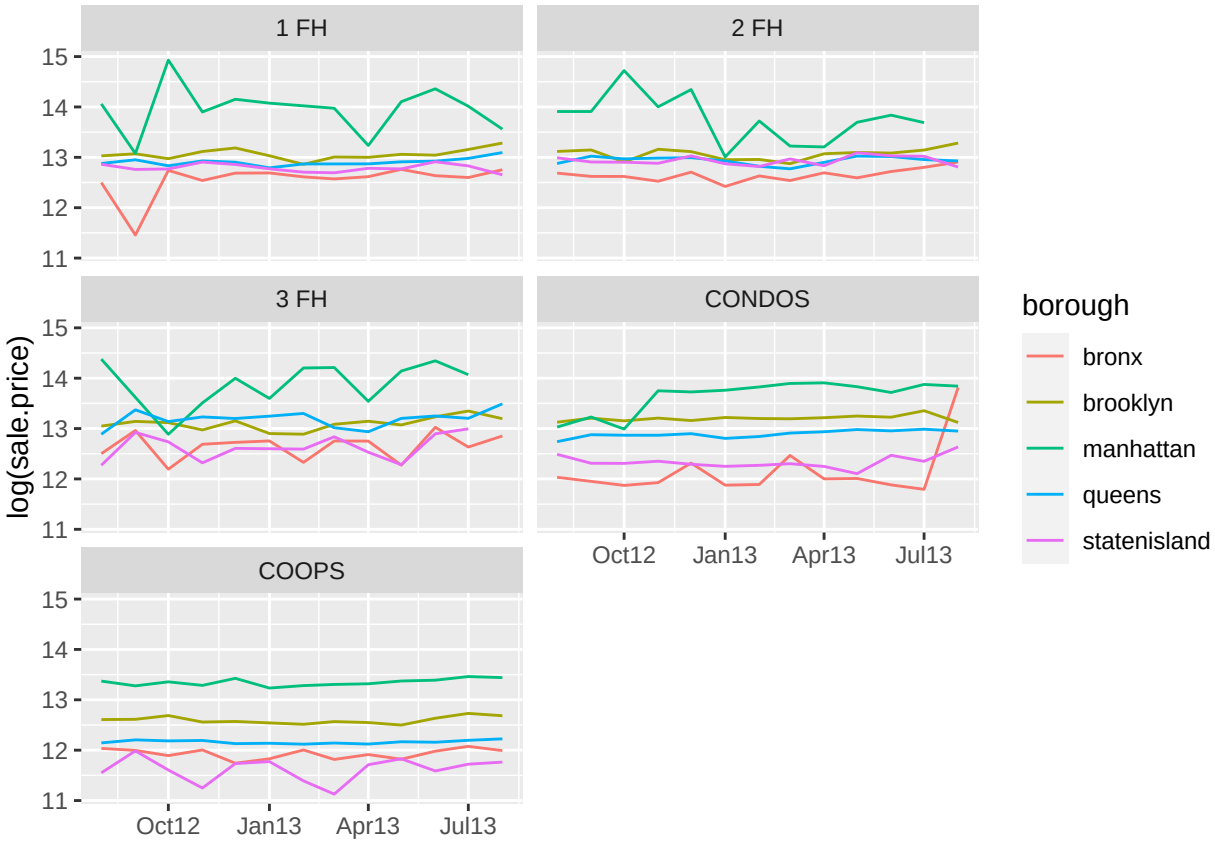
```
ggplot(bdset2) + geom_bar(mapping = aes(x = buildingclasscat, fill = borough), position = "dodge")
```



Line plot we can see that

1. Condo sale price spiked after July in bronx
2. Coops sale price remain consistent throughout the year in Brooklyn, Manhattan and Queens.Price fluctuations every quarter in Bronx and Staten Island
3. Single family home prices dipped in Manhattan and Bronx for Sep 2012. Overall the prices were consistent for rest of they months
4. Three family home prices were sold for less in October 2012, Feb 2012 and April 2012
5. Sale price fluctuates throught the year for Two family homes in Manhattan

```
ggplot(bdset2) + stat_summary(aes(x = sale.date.mw, y = log(sale.price), group = borough,
    color = borough), fun = mean, geom = "line") + scale_x_date(NULL, date_breaks = "3 month",
    date_labels = "%b%y") + facet_wrap(~buildingclasscat, ncol = 2)
```


1 FH
2 FH
3 FH
CONDOS
COOPS
log(sale.price)
15
14
13
12
11
Oct12
Jan13
Apr13
Jul13
borough
bronx
brooklyn
manhattan
queens
statenisland