library(tidyverse) #tidyverse set of packages and functions

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.2 ✔ readr 2.1.4  
## ✔ forcats 1.0.0 ✔ stringr 1.5.0  
## ✔ ggplot2 3.4.2 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.2 ✔ tidyr 1.3.0  
## ✔ purrr 1.0.1   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(tidymodels)

## ── Attaching packages ────────────────────────────────────── tidymodels 1.1.0 ──  
## ✔ broom 1.0.4 ✔ rsample 1.1.1  
## ✔ dials 1.2.0 ✔ tune 1.1.1  
## ✔ infer 1.0.4 ✔ workflows 1.1.3  
## ✔ modeldata 1.1.0 ✔ workflowsets 1.0.1  
## ✔ parsnip 1.1.0 ✔ yardstick 1.2.0  
## ✔ recipes 1.0.6   
## ── Conflicts ───────────────────────────────────────── tidymodels\_conflicts() ──  
## ✖ scales::discard() masks purrr::discard()  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ recipes::fixed() masks stringr::fixed()  
## ✖ dplyr::lag() masks stats::lag()  
## ✖ yardstick::spec() masks readr::spec()  
## ✖ recipes::step() masks stats::step()  
## • Use tidymodels\_prefer() to resolve common conflicts.

library(glmnet) #for Lasso, ridge, and elastic net models

## Loading required package: Matrix  
##   
## Attaching package: 'Matrix'  
##   
## The following objects are masked from 'package:tidyr':  
##   
## expand, pack, unpack  
##   
## Loaded glmnet 4.1-7

library(GGally) #create ggcorr and ggpairs plots

## Registered S3 method overwritten by 'GGally':  
## method from   
## +.gg ggplot2

library(ggcorrplot) #create an alternative to ggcorr plots  
library(MASS) #access to forward and backward selection algorithms

##   
## Attaching package: 'MASS'  
##   
## The following object is masked from 'package:dplyr':  
##   
## select

library(leaps) #best subset selection  
library(lmtest) #for the dw test

## Loading required package: zoo  
##   
## Attaching package: 'zoo'  
##   
## The following objects are masked from 'package:base':  
##   
## as.Date, as.Date.numeric

library(splines) #for nonlinear fitting  
library(car) #for calculating the variance inflation factor

## Loading required package: carData  
##   
## Attaching package: 'car'  
##   
## The following object is masked from 'package:dplyr':  
##   
## recode  
##   
## The following object is masked from 'package:purrr':  
##   
## some

library(lubridate)

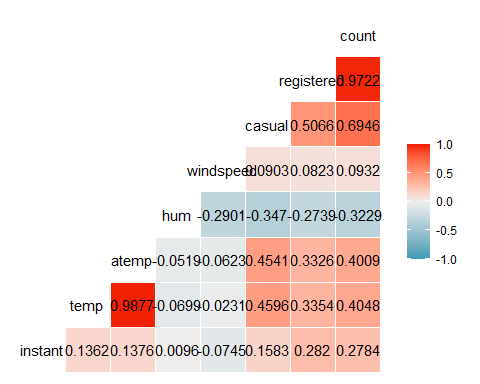
library(readr)  
bike <- read\_csv("bike\_cleaned-3.csv")

## Rows: 17379 Columns: 16  
## ── Column specification ────────────────────────────────────────────────────────  
## Delimiter: ","  
## chr (7): dteday, season, mnth, holiday, weekday, workingday, weathersit  
## dbl (9): instant, hr, temp, atemp, hum, windspeed, casual, registered, count  
##   
## 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.

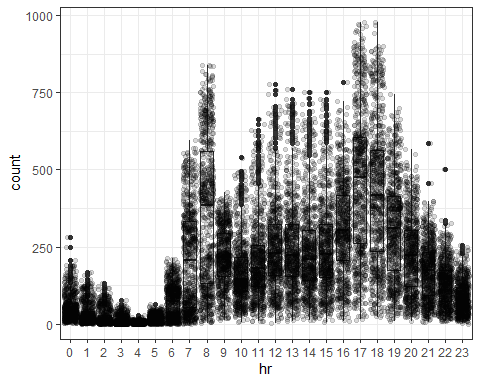
bike = bike %>% mutate(dteday = mdy(dteday))  
#Note that mdy is a lubridate package function  
#You can read more about lubridate here: https://lubridate.tidyverse.org/

bike = bike %>% mutate\_if(is.character, as\_factor)  
bike = bike %>% mutate(hr = as\_factor(hr))  
ggcorr(bike,label = TRUE,label\_round = 4)

## Warning in ggcorr(bike, label = TRUE, label\_round = 4): data in column(s)  
## 'dteday', 'season', 'mnth', 'hr', 'holiday', 'weekday', 'workingday',  
## 'weathersit' are not numeric and were ignored



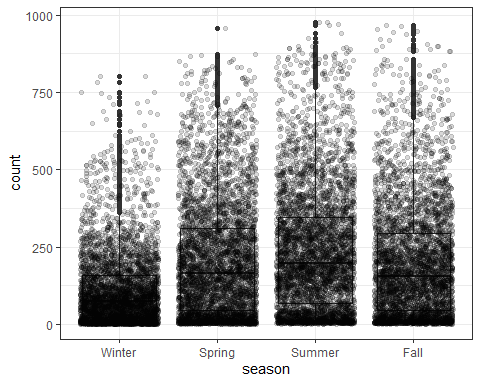
ggplot(bike,aes(x=hr,y=count)) + geom\_boxplot() + geom\_jitter(alpha = 0.15) + theme\_bw()



str(bike)

## tibble [17,379 × 16] (S3: tbl\_df/tbl/data.frame)  
## $ instant : num [1:17379] 1 2 3 4 5 6 7 8 9 10 ...  
## $ dteday : Date[1:17379], format: "2011-01-01" "2011-01-01" ...  
## $ season : Factor w/ 4 levels "Winter","Spring",..: 1 1 1 1 1 1 1 1 1 1 ...  
## $ mnth : Factor w/ 12 levels "Jan","Feb","Mar",..: 1 1 1 1 1 1 1 1 1 1 ...  
## $ hr : Factor w/ 24 levels "0","1","2","3",..: 1 2 3 4 5 6 7 8 9 10 ...  
## $ holiday : Factor w/ 2 levels "NotHoliday","Holiday": 1 1 1 1 1 1 1 1 1 1 ...  
## $ weekday : Factor w/ 7 levels "Saturday","Sunday",..: 1 1 1 1 1 1 1 1 1 1 ...  
## $ workingday: Factor w/ 2 levels "NotWorkingDay",..: 1 1 1 1 1 1 1 1 1 1 ...  
## $ weathersit: Factor w/ 4 levels "NoPrecip","Misty",..: 1 1 1 1 1 2 1 1 1 1 ...  
## $ temp : num [1:17379] 0.24 0.22 0.22 0.24 0.24 0.24 0.22 0.2 0.24 0.32 ...  
## $ atemp : num [1:17379] 0.288 0.273 0.273 0.288 0.288 ...  
## $ hum : num [1:17379] 0.81 0.8 0.8 0.75 0.75 0.75 0.8 0.86 0.75 0.76 ...  
## $ windspeed : num [1:17379] 0 0 0 0 0 0.0896 0 0 0 0 ...  
## $ casual : num [1:17379] 3 8 5 3 0 0 2 1 1 8 ...  
## $ registered: num [1:17379] 13 32 27 10 1 1 0 2 7 6 ...  
## $ count : num [1:17379] 16 40 32 13 1 1 2 3 8 14 ...

ggplot(bike,aes(x=season,y=count)) + geom\_boxplot() + geom\_jitter(alpha = 0.15) + theme\_bw()



bike %>% group\_by(season) %>% summarize(freq = n()) %>% arrange(desc(freq))

## # A tibble: 4 × 2  
## season freq  
## <fct> <int>  
## 1 Summer 4496  
## 2 Spring 4409  
## 3 Winter 4242  
## 4 Fall 4232

# Define the recipe  
bike\_recipe = recipe(count ~ hr, bike)  
bike\_recipe = step\_dummy(bike\_recipe, all\_nominal())  
  
# Define the model  
lm\_model = linear\_reg()  
lm\_model = set\_engine(lm\_model, "lm")  
  
# Initiate the workflow  
lm\_wflow = workflow()  
  
# Add the model to the workflow  
lm\_wflow = add\_model(lm\_wflow, lm\_model)  
  
# Add the recipe to the workflow  
lm\_wflow = add\_recipe(lm\_wflow, bike\_recipe)  
  
# Fit the model  
lm\_fit = fit(lm\_wflow, bike)  
  
summary(lm\_fit$fit$fit$fit)

##   
## Call:  
## stats::lm(formula = ..y ~ ., data = data)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -446.45 -60.99 -6.01 50.10 551.49   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 53.898 4.756 11.332 < 2e-16 \*\*\*  
## hr\_X1 -20.522 6.731 -3.049 0.002300 \*\*   
## hr\_X2 -31.028 6.752 -4.595 4.35e-06 \*\*\*  
## hr\_X3 -42.171 6.796 -6.205 5.58e-10 \*\*\*  
## hr\_X4 -47.545 6.796 -6.996 2.73e-12 \*\*\*  
## hr\_X5 -34.008 6.747 -5.040 4.70e-07 \*\*\*  
## hr\_X6 22.146 6.729 3.291 0.000999 \*\*\*  
## hr\_X7 158.167 6.724 23.523 < 2e-16 \*\*\*  
## hr\_X8 305.113 6.724 45.377 < 2e-16 \*\*\*  
## hr\_X9 165.411 6.724 24.600 < 2e-16 \*\*\*  
## hr\_X10 119.770 6.724 17.812 < 2e-16 \*\*\*  
## hr\_X11 154.245 6.724 22.939 < 2e-16 \*\*\*  
## hr\_X12 199.418 6.722 29.668 < 2e-16 \*\*\*  
## hr\_X13 199.763 6.719 29.729 < 2e-16 \*\*\*  
## hr\_X14 187.051 6.719 27.838 < 2e-16 \*\*\*  
## hr\_X15 197.335 6.719 29.368 < 2e-16 \*\*\*  
## hr\_X16 258.085 6.717 38.422 < 2e-16 \*\*\*  
## hr\_X17 407.554 6.717 60.674 < 2e-16 \*\*\*  
## hr\_X18 371.613 6.722 55.286 < 2e-16 \*\*\*  
## hr\_X19 257.625 6.722 38.327 < 2e-16 \*\*\*  
## hr\_X20 172.132 6.722 25.608 < 2e-16 \*\*\*  
## hr\_X21 118.416 6.722 17.617 < 2e-16 \*\*\*  
## hr\_X22 77.437 6.722 11.520 < 2e-16 \*\*\*  
## hr\_X23 33.933 6.722 5.048 4.50e-07 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 128.2 on 17355 degrees of freedom  
## Multiple R-squared: 0.5015, Adjusted R-squared: 0.5008   
## F-statistic: 759.1 on 23 and 17355 DF, p-value: < 2.2e-16

# Define the recipe  
bike\_recipe = recipe(count ~ hr + temp, bike)  
bike\_recipe = step\_dummy(bike\_recipe, all\_nominal())  
  
# Define the model  
lm\_model = linear\_reg()  
lm\_model = set\_engine(lm\_model, "lm")  
  
# Initiate the workflow  
lm\_wflow = workflow()  
  
# Add the model to the workflow  
lm\_wflow = add\_model(lm\_wflow, lm\_model)  
  
# Add the recipe to the workflow  
lm\_wflow = add\_recipe(lm\_wflow, bike\_recipe)  
  
# Fit the model  
lm\_fit = fit(lm\_wflow, bike)  
  
summary(lm\_fit$fit$fit$fit)

##   
## Call:  
## stats::lm(formula = ..y ~ ., data = data)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -469.96 -63.29 -6.93 52.41 519.88   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -80.181 4.848 -16.539 < 2e-16 \*\*\*  
## temp 286.855 4.715 60.836 < 2e-16 \*\*\*  
## hr\_X1 -18.214 6.111 -2.981 0.00288 \*\*   
## hr\_X2 -27.346 6.131 -4.461 8.22e-06 \*\*\*  
## hr\_X3 -38.069 6.170 -6.170 6.99e-10 \*\*\*  
## hr\_X4 -41.584 6.171 -6.739 1.65e-11 \*\*\*  
## hr\_X5 -25.033 6.128 -4.085 4.42e-05 \*\*\*  
## hr\_X6 32.169 6.111 5.264 1.43e-07 \*\*\*  
## hr\_X7 166.290 6.106 27.233 < 2e-16 \*\*\*  
## hr\_X8 308.675 6.105 50.561 < 2e-16 \*\*\*  
## hr\_X9 162.739 6.105 26.657 < 2e-16 \*\*\*  
## hr\_X10 110.256 6.107 18.055 < 2e-16 \*\*\*  
## hr\_X11 138.410 6.110 22.652 < 2e-16 \*\*\*  
## hr\_X12 178.516 6.112 29.206 < 2e-16 \*\*\*  
## hr\_X13 174.714 6.114 28.574 < 2e-16 \*\*\*  
## hr\_X14 159.035 6.118 25.995 < 2e-16 \*\*\*  
## hr\_X15 168.304 6.119 27.505 < 2e-16 \*\*\*  
## hr\_X16 230.103 6.116 37.625 < 2e-16 \*\*\*  
## hr\_X17 382.550 6.112 62.588 < 2e-16 \*\*\*  
## hr\_X18 350.451 6.112 57.334 < 2e-16 \*\*\*  
## hr\_X19 241.342 6.108 39.510 < 2e-16 \*\*\*  
## hr\_X20 160.317 6.106 26.257 < 2e-16 \*\*\*  
## hr\_X21 110.416 6.104 18.089 < 2e-16 \*\*\*  
## hr\_X22 72.533 6.103 11.885 < 2e-16 \*\*\*  
## hr\_X23 31.748 6.103 5.202 1.99e-07 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 116.3 on 17354 degrees of freedom  
## Multiple R-squared: 0.5891, Adjusted R-squared: 0.5886   
## F-statistic: 1037 on 24 and 17354 DF, p-value: < 2.2e-16

# Define the recipe  
bike\_recipe = recipe(count ~ atemp + temp, bike)  
  
# Define the model  
lm\_model = linear\_reg()  
lm\_model = set\_engine(lm\_model, "lm")  
  
# Initiate the workflow  
lm\_wflow = workflow()  
  
# Add the model to the workflow  
lm\_wflow = add\_model(lm\_wflow, lm\_model)  
  
# Add the recipe to the workflow  
lm\_wflow = add\_recipe(lm\_wflow, bike\_recipe)  
  
# Fit the model  
lm\_fit = fit(lm\_wflow, bike)  
  
summary(lm\_fit$fit$fit$fit)

##   
## Call:  
## stats::lm(formula = ..y ~ ., data = data)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -293.47 -109.95 -32.87 76.57 744.57   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -1.898 3.904 -0.486 0.627   
## atemp 49.407 46.773 1.056 0.291   
## temp 337.744 41.744 8.091 6.31e-16 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 165.9 on 17376 degrees of freedom  
## Multiple R-squared: 0.1639, Adjusted R-squared: 0.1638   
## F-statistic: 1703 on 2 and 17376 DF, p-value: < 2.2e-16

allmod = lm(count ~. -instant -registered -casual, data = bike)   
summary(allmod)

##   
## Call:  
## lm(formula = count ~ . - instant - registered - casual, data = bike)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -395.61 -60.73 -7.76 51.29 440.22   
##   
## Coefficients: (1 not defined because of singularities)  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -3.552e+03 6.532e+01 -54.385 < 2e-16 \*\*\*  
## dteday 2.325e-01 4.269e-03 54.463 < 2e-16 \*\*\*  
## seasonSpring 3.792e+01 4.859e+00 7.805 6.28e-15 \*\*\*  
## seasonSummer 3.187e+01 5.752e+00 5.541 3.06e-08 \*\*\*  
## seasonFall 6.831e+01 4.885e+00 13.984 < 2e-16 \*\*\*  
## mnthFeb -3.489e+00 3.922e+00 -0.890 0.373661   
## mnthMar 6.231e-01 4.406e+00 0.141 0.887547   
## mnthApr -1.433e+01 6.546e+00 -2.189 0.028581 \*   
## mnthMay -6.832e+00 7.002e+00 -0.976 0.329241   
## mnthJun -2.833e+01 7.193e+00 -3.938 8.24e-05 \*\*\*  
## mnthJul -5.492e+01 8.075e+00 -6.802 1.07e-11 \*\*\*  
## mnthAug -4.091e+01 7.885e+00 -5.188 2.15e-07 \*\*\*  
## mnthSep -2.387e+01 7.035e+00 -3.392 0.000695 \*\*\*  
## mnthOct -4.782e+01 6.553e+00 -7.298 3.06e-13 \*\*\*  
## mnthNov -8.079e+01 6.354e+00 -12.714 < 2e-16 \*\*\*  
## mnthDec -8.419e+01 5.144e+00 -16.368 < 2e-16 \*\*\*  
## hr1 -1.729e+01 5.348e+00 -3.233 0.001229 \*\*   
## hr2 -2.636e+01 5.367e+00 -4.911 9.13e-07 \*\*\*  
## hr3 -3.712e+01 5.405e+00 -6.868 6.75e-12 \*\*\*  
## hr4 -4.022e+01 5.411e+00 -7.433 1.11e-13 \*\*\*  
## hr5 -2.348e+01 5.376e+00 -4.368 1.26e-05 \*\*\*  
## hr6 3.540e+01 5.362e+00 6.603 4.14e-11 \*\*\*  
## hr7 1.704e+02 5.351e+00 31.847 < 2e-16 \*\*\*  
## hr8 3.108e+02 5.345e+00 58.150 < 2e-16 \*\*\*  
## hr9 1.631e+02 5.350e+00 30.482 < 2e-16 \*\*\*  
## hr10 1.084e+02 5.372e+00 20.182 < 2e-16 \*\*\*  
## hr11 1.338e+02 5.412e+00 24.724 < 2e-16 \*\*\*  
## hr12 1.731e+02 5.459e+00 31.711 < 2e-16 \*\*\*  
## hr13 1.681e+02 5.496e+00 30.575 < 2e-16 \*\*\*  
## hr14 1.522e+02 5.527e+00 27.536 < 2e-16 \*\*\*  
## hr15 1.617e+02 5.538e+00 29.191 < 2e-16 \*\*\*  
## hr16 2.238e+02 5.527e+00 40.494 < 2e-16 \*\*\*  
## hr17 3.775e+02 5.494e+00 68.708 < 2e-16 \*\*\*  
## hr18 3.456e+02 5.458e+00 63.312 < 2e-16 \*\*\*  
## hr19 2.369e+02 5.407e+00 43.814 < 2e-16 \*\*\*  
## hr20 1.573e+02 5.377e+00 29.246 < 2e-16 \*\*\*  
## hr21 1.078e+02 5.356e+00 20.133 < 2e-16 \*\*\*  
## hr22 7.089e+01 5.345e+00 13.262 < 2e-16 \*\*\*  
## hr23 3.210e+01 5.341e+00 6.010 1.89e-09 \*\*\*  
## holidayHoliday -2.599e+01 4.883e+00 -5.322 1.04e-07 \*\*\*  
## weekdaySunday -1.605e+01 2.879e+00 -5.574 2.53e-08 \*\*\*  
## weekdayMonday -6.878e+00 2.972e+00 -2.314 0.020658 \*   
## weekdayTuesday -5.201e+00 2.901e+00 -1.793 0.072964 .   
## weekdayWednesday -2.453e+00 2.896e+00 -0.847 0.397011   
## weekdayThursday -2.906e+00 2.894e+00 -1.004 0.315217   
## weekdayFriday 1.347e+00 2.886e+00 0.467 0.640659   
## workingdayWorkingDay NA NA NA NA   
## weathersitMisty -1.030e+01 1.921e+00 -5.361 8.38e-08 \*\*\*  
## weathersitLightPrecip -6.501e+01 3.238e+00 -20.080 < 2e-16 \*\*\*  
## weathersitHeavyPrecip -6.288e+01 5.892e+01 -1.067 0.285959   
## temp 1.127e+02 2.953e+01 3.818 0.000135 \*\*\*  
## atemp 1.312e+02 3.064e+01 4.282 1.87e-05 \*\*\*  
## hum -8.349e+01 5.556e+00 -15.028 < 2e-16 \*\*\*  
## windspeed -2.936e+01 7.056e+00 -4.162 3.18e-05 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 101.8 on 17326 degrees of freedom  
## Multiple R-squared: 0.686, Adjusted R-squared: 0.6851   
## F-statistic: 728 on 52 and 17326 DF, p-value: < 2.2e-16

#backward  
backmod = stepAIC(allmod, direction = "backward", trace = TRUE) #trace = TRUE shows how the model is built (which variables are removed)

## Start: AIC=160735.9  
## count ~ (instant + dteday + season + mnth + hr + holiday + weekday +   
## workingday + weathersit + temp + atemp + hum + windspeed +   
## casual + registered) - instant - registered - casual  
##   
##   
## Step: AIC=160735.9  
## count ~ dteday + season + mnth + hr + holiday + weekday + weathersit +   
## temp + atemp + hum + windspeed  
##   
## Df Sum of Sq RSS AIC  
## <none> 179516104 160736  
## - temp 1 151021 179667125 160748  
## - windspeed 1 179440 179695544 160751  
## - atemp 1 189943 179706047 160752  
## - holiday 1 293470 179809574 160762  
## - weekday 6 497120 180013225 160772  
## - hum 1 2339990 181856095 160959  
## - season 3 2415879 181931984 160962  
## - weathersit 3 4186615 183702720 161131  
## - mnth 11 5642975 185159079 161252  
## - dteday 1 30733493 210249597 163480  
## - hr 23 196705675 376221779 173549

summary(backmod)

##   
## Call:  
## lm(formula = count ~ dteday + season + mnth + hr + holiday +   
## weekday + weathersit + temp + atemp + hum + windspeed, data = bike)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -395.61 -60.73 -7.76 51.29 440.22   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -3.552e+03 6.532e+01 -54.385 < 2e-16 \*\*\*  
## dteday 2.325e-01 4.269e-03 54.463 < 2e-16 \*\*\*  
## seasonSpring 3.792e+01 4.859e+00 7.805 6.28e-15 \*\*\*  
## seasonSummer 3.187e+01 5.752e+00 5.541 3.06e-08 \*\*\*  
## seasonFall 6.831e+01 4.885e+00 13.984 < 2e-16 \*\*\*  
## mnthFeb -3.489e+00 3.922e+00 -0.890 0.373661   
## mnthMar 6.231e-01 4.406e+00 0.141 0.887547   
## mnthApr -1.433e+01 6.546e+00 -2.189 0.028581 \*   
## mnthMay -6.832e+00 7.002e+00 -0.976 0.329241   
## mnthJun -2.833e+01 7.193e+00 -3.938 8.24e-05 \*\*\*  
## mnthJul -5.492e+01 8.075e+00 -6.802 1.07e-11 \*\*\*  
## mnthAug -4.091e+01 7.885e+00 -5.188 2.15e-07 \*\*\*  
## mnthSep -2.387e+01 7.035e+00 -3.392 0.000695 \*\*\*  
## mnthOct -4.782e+01 6.553e+00 -7.298 3.06e-13 \*\*\*  
## mnthNov -8.079e+01 6.354e+00 -12.714 < 2e-16 \*\*\*  
## mnthDec -8.419e+01 5.144e+00 -16.368 < 2e-16 \*\*\*  
## hr1 -1.729e+01 5.348e+00 -3.233 0.001229 \*\*   
## hr2 -2.636e+01 5.367e+00 -4.911 9.13e-07 \*\*\*  
## hr3 -3.712e+01 5.405e+00 -6.868 6.75e-12 \*\*\*  
## hr4 -4.022e+01 5.411e+00 -7.433 1.11e-13 \*\*\*  
## hr5 -2.348e+01 5.376e+00 -4.368 1.26e-05 \*\*\*  
## hr6 3.540e+01 5.362e+00 6.603 4.14e-11 \*\*\*  
## hr7 1.704e+02 5.351e+00 31.847 < 2e-16 \*\*\*  
## hr8 3.108e+02 5.345e+00 58.150 < 2e-16 \*\*\*  
## hr9 1.631e+02 5.350e+00 30.482 < 2e-16 \*\*\*  
## hr10 1.084e+02 5.372e+00 20.182 < 2e-16 \*\*\*  
## hr11 1.338e+02 5.412e+00 24.724 < 2e-16 \*\*\*  
## hr12 1.731e+02 5.459e+00 31.711 < 2e-16 \*\*\*  
## hr13 1.681e+02 5.496e+00 30.575 < 2e-16 \*\*\*  
## hr14 1.522e+02 5.527e+00 27.536 < 2e-16 \*\*\*  
## hr15 1.617e+02 5.538e+00 29.191 < 2e-16 \*\*\*  
## hr16 2.238e+02 5.527e+00 40.494 < 2e-16 \*\*\*  
## hr17 3.775e+02 5.494e+00 68.708 < 2e-16 \*\*\*  
## hr18 3.456e+02 5.458e+00 63.312 < 2e-16 \*\*\*  
## hr19 2.369e+02 5.407e+00 43.814 < 2e-16 \*\*\*  
## hr20 1.573e+02 5.377e+00 29.246 < 2e-16 \*\*\*  
## hr21 1.078e+02 5.356e+00 20.133 < 2e-16 \*\*\*  
## hr22 7.089e+01 5.345e+00 13.262 < 2e-16 \*\*\*  
## hr23 3.210e+01 5.341e+00 6.010 1.89e-09 \*\*\*  
## holidayHoliday -2.599e+01 4.883e+00 -5.322 1.04e-07 \*\*\*  
## weekdaySunday -1.605e+01 2.879e+00 -5.574 2.53e-08 \*\*\*  
## weekdayMonday -6.878e+00 2.972e+00 -2.314 0.020658 \*   
## weekdayTuesday -5.201e+00 2.901e+00 -1.793 0.072964 .   
## weekdayWednesday -2.453e+00 2.896e+00 -0.847 0.397011   
## weekdayThursday -2.906e+00 2.894e+00 -1.004 0.315217   
## weekdayFriday 1.347e+00 2.886e+00 0.467 0.640659   
## weathersitMisty -1.030e+01 1.921e+00 -5.361 8.38e-08 \*\*\*  
## weathersitLightPrecip -6.501e+01 3.238e+00 -20.080 < 2e-16 \*\*\*  
## weathersitHeavyPrecip -6.288e+01 5.892e+01 -1.067 0.285959   
## temp 1.127e+02 2.953e+01 3.818 0.000135 \*\*\*  
## atemp 1.312e+02 3.064e+01 4.282 1.87e-05 \*\*\*  
## hum -8.349e+01 5.556e+00 -15.028 < 2e-16 \*\*\*  
## windspeed -2.936e+01 7.056e+00 -4.162 3.18e-05 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 101.8 on 17326 degrees of freedom  
## Multiple R-squared: 0.686, Adjusted R-squared: 0.6851   
## F-statistic: 728 on 52 and 17326 DF, p-value: < 2.2e-16