

HW5 file

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Load data

```
rm(list = ls(all = TRUE))

library(tidyverse)

## -- Attaching packages ----- tidyverse 1.3.0 --
## v ggplot2 3.3.2      v purrr  0.3.4
## v tibble  3.0.4      v dplyr  1.0.2
## v tidyr   1.1.2      v stringr 1.4.0
## v readr   1.4.0      v forcats 0.5.0

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()

library(readxl)
#IP=read_csv("hw_height_weight.csv")
IP=read_excel("hw_5_heightWeight.xlsx")
CS=read_csv("HW5_characters_stats.csv")

##
## -- Column specification -----
## cols(
##   Name = col_character(),
##   Alignment = col_character(),
##   Intelligence = col_double(),
##   Strength = col_double(),
##   Speed = col_double(),
##   Durability = col_double(),
##   Power = col_double(),
##   Combat = col_double(),
##   Total = col_double()
## )

library(gbm)

## Loaded gbm 2.1.8

library(MLmetrics)

##
## Attaching package: 'MLmetrics'
```

```
## The following object is masked from 'package:base':
##
##      Recall
library(pROC)

## Type 'citation("pROC")' for a citation.
##
## Attaching package: 'pROC'
## The following objects are masked from 'package:stats':
##
##      cov, smooth, var
library(ggplot2)
library(caret)

## Loading required package: lattice
##
## Attaching package: 'caret'
## The following objects are masked from 'package:MLmetrics':
##
##      MAE, RMSE
## The following object is masked from 'package:purrr':
##
##      lift
```

Q1

Accuracy a little higher .52 than prior exercise.

```
## # A tibble: 6 x 3
## # Groups:   Gender2 [2]
##   Gender2 exp_group     n
##   <dbl> <chr>     <int>
## 1      0 test      1666
## 2      0 train     1667
## 3      0 validate  1667
## 4      1 test      1666
## 5      1 train     1667
## 6      1 validate  1667

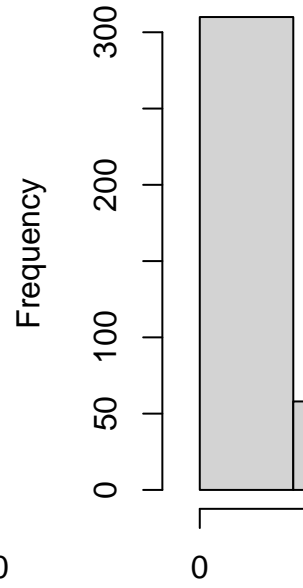
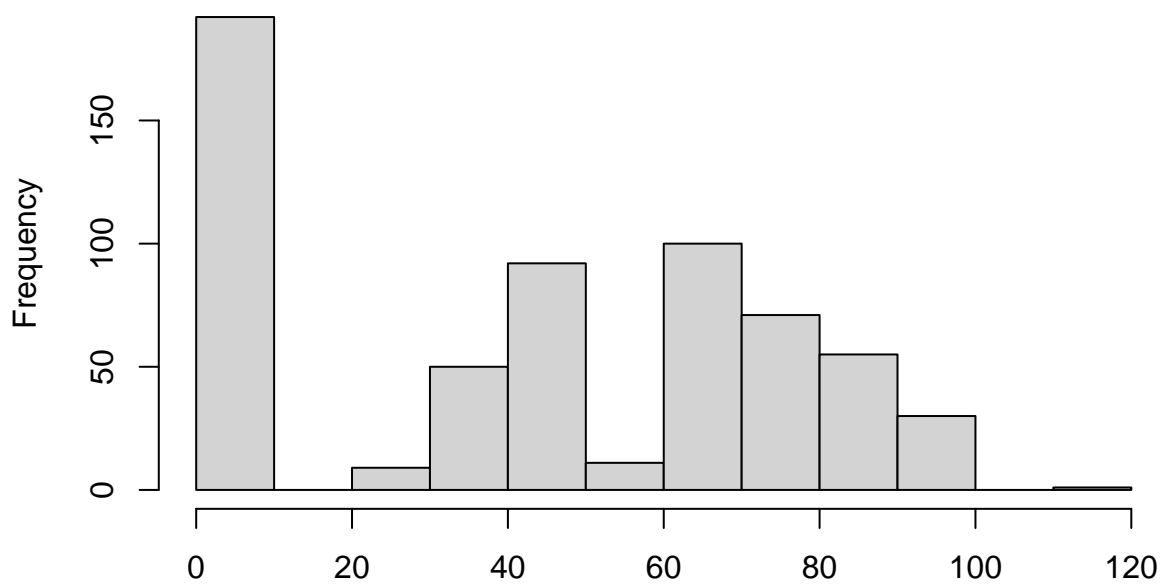
## Using 100 trees...
## [1] 0.5170966
```

Q2a

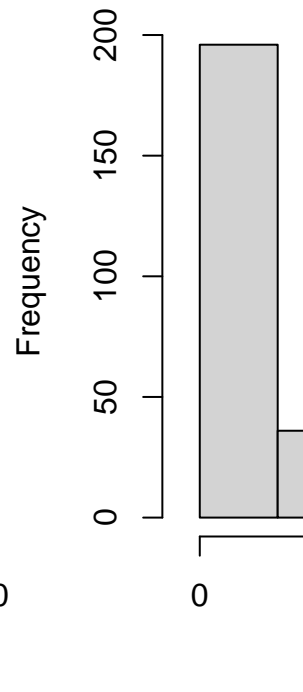
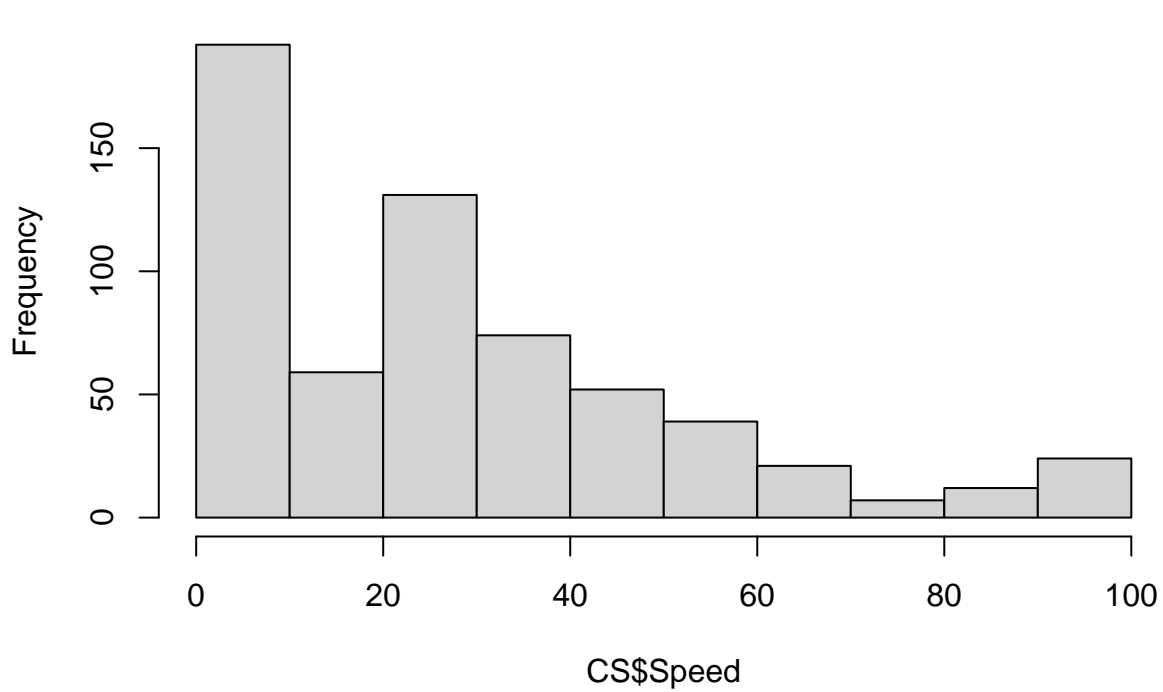
For durability and combat I saw different ids with scores above 100. I would rather remove these 5 observations as well as 3 observations with missing data as I think 602/611 won't really affect inference too much.

```
##
##      bad      good neutral
##      165      432       11
```

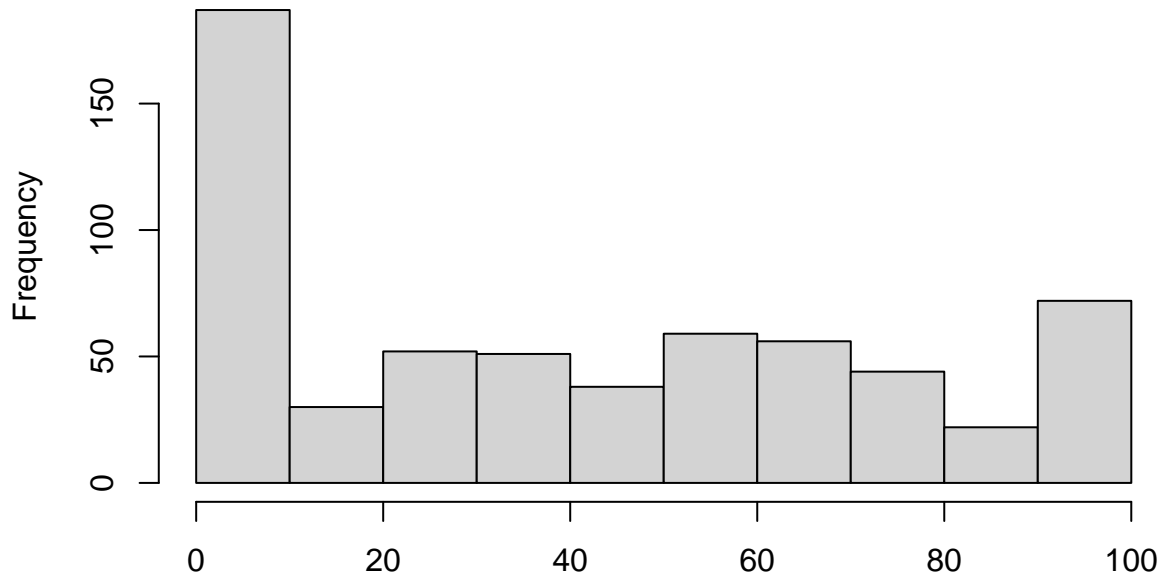
Histogram of CS\$Intelligence



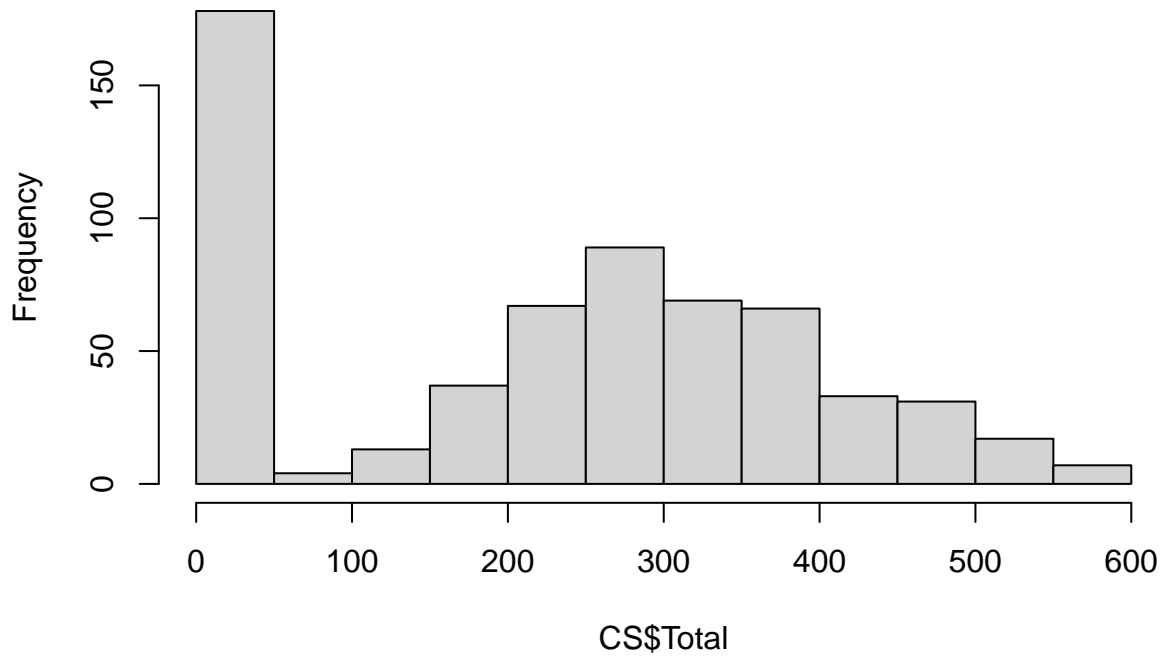
CS\$Intelligence
Histogram of CS\$Speed



Histogram of CS\$Power



CS\$Power
Histogram of CS\$Total



```
##  
## FALSE  
## 611  
##  
## FALSE
```

```
## 611
##
## FALSE
## 611
##
## FALSE
## 611
##
## FALSE
## 611
##
## FALSE
## 611
##
## FALSE
## 611
```

Q2bf

Based on including all the numeric columns (including total) in the PCA, one component 95% variance is enough. When total is removed, however, three pcs are needed to explain at least 85% of the total variance.

I think normalization is needed when all numeric columns are present as with 1 column the total variance is over-explained by one component. Scaling the data in the pCA then distributed the data more to having 2-3 PCS rather than 1 for all 6 numeric columns.

Creating a pseudo total variable as the summation of all non-total numeric variables and checking the absolute value of the difference with it and the original total, all values were 0 indicating yes Total is the sum of the remaining numeric variables.

As discussed above, I would not have included total since it represents all the other numeric variables, anyways, and that is why nearly all the variability is in the first PC prior to scaling.

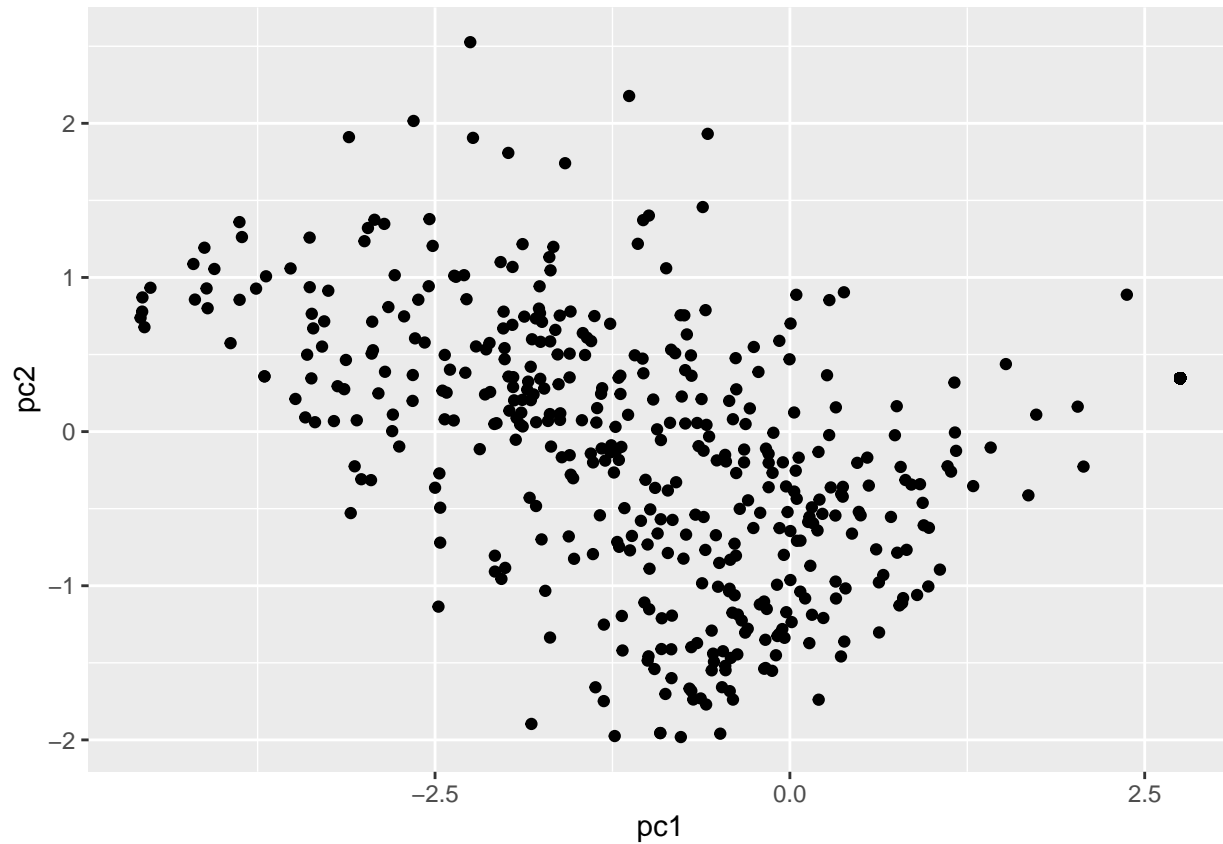
A plot of the two largest PCS were done: one with the scale PCA one scaled PCA with total not included below. There almost looks to be a linear decreasing trend downward in the plot showing higher loadings in PC2 are matching with lower loadings in PC2 and vice-versa. There appears to be a strong split between the first two PCS despite a lot of the variability being carried by PC1 (even with post- scaling.)

```
## Importance of components:
##          PC1          PC2          PC3          PC4          PC5          PC6
## Standard deviation  179.4435 24.86616 19.51482 16.02184 14.87284 14.6077
## Proportion of Variance  0.9501 0.01824 0.01124 0.00757 0.00653 0.0063
## Cumulative Proportion  0.9501 0.96837 0.97960 0.98718 0.99370 1.0000
##          PC7
## Standard deviation    3.466e-14
## Proportion of Variance 0.000e+00
## Cumulative Proportion 1.000e+00

## Importance of components:
##          PC1          PC2          PC3          PC4          PC5          PC6          PC7
## Standard deviation    2.3138 0.75659 0.62229 0.55609 0.44929 0.41896 4.638e-16
## Proportion of Variance 0.7648 0.08178 0.05532 0.04418 0.02884 0.02508 0.000e+00
## Cumulative Proportion 0.7648 0.84659 0.90191 0.94609 0.97492 1.00000 1.000e+00
```

```
##
## 0
## 602

## Importance of components:
##          PC1      PC2      PC3      PC4      PC5      PC6
## Standard deviation 2.0867 0.7566 0.62200 0.55601 0.44928 0.41896
## Proportion of Variance 0.7257 0.0954 0.06448 0.05152 0.03364 0.02925
## Cumulative Proportion 0.7257 0.8211 0.88558 0.93710 0.97075 1.00000
```



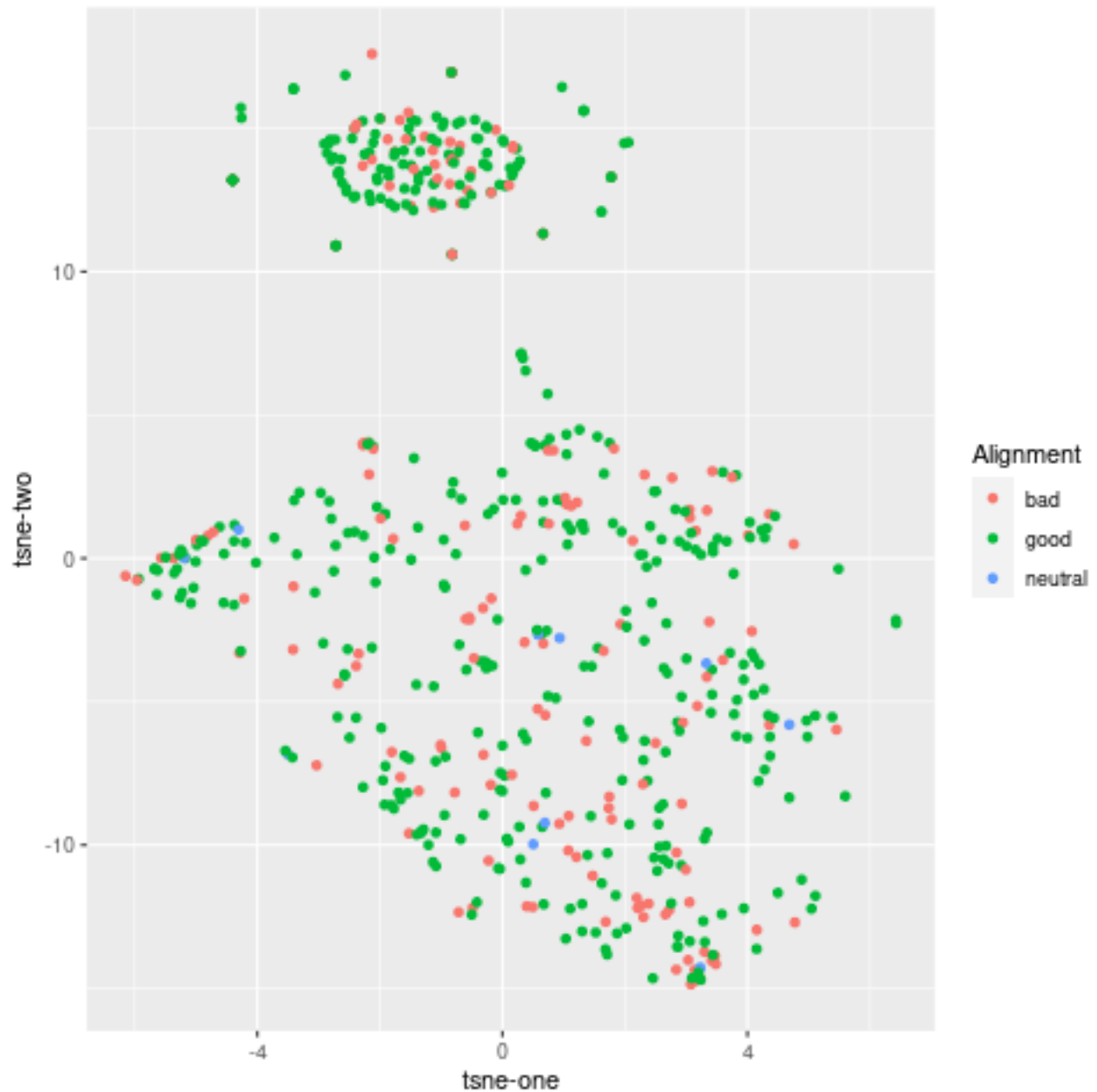
Q34

Load TSNE from python Based on the python and R TSNE plots, I think there are two clusters but alignment is not helping to separate.

```
## Warning: Missing column names filled in: 'X1' [1]

##
## -- Column specification -----
## cols(
##   X1 = col_double(),
##   Alignment = col_character(),
##   Intelligence = col_double(),
##   Strength = col_double(),
##   Speed = col_double(),
##   Durability = col_double(),
##   Power = col_double(),
##   Combat = col_double(),
##   'tsne-one' = col_double(),
##   'tsne-two' = col_double()
```

```
## )
## pdf
## 2
```



Q57

Alignment dataset. Based on checking the variable importance after doing 5 fold CV, I would argue from the training model that intelligence, speed, and durability stand out. To be honest, I would argue all seem important except for the combat metric (I did not include total in the gbm).

K-fold cross-validation is important for dealing with a limited sample, where re-sampling allows for diversity of model performance so that the average model performance can lead to a more accurate understanding with the constraints of limited sampling.

For RFE train the model on all predictors, calculate the performance and then variable importance. For a subset of a given size, keep the most important variables, train the model on the subset of predictors, calculate performance of given subset. After all performances are assessed for variable subset combinations of interest, finalize the appropriate predictors and optimal model with optimal predictor subset.

```
## Warning: The 'i' argument of '[()' can't be a matrix as of tibble 3.0.0.
## Convert to a vector.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_warnings()' to see where this warning was generated.
## Warning: Setting row names on a tibble is deprecated.
```

## Iter	TrainDeviance	ValidDeviance	StepSize	Improve
## 1	1.0986	-nan	0.1000	0.1522
## 2	0.9974	-nan	0.1000	0.1172
## 3	0.9227	-nan	0.1000	0.0715
## 4	0.8673	-nan	0.1000	0.0544
## 5	0.8209	-nan	0.1000	0.0268
## 6	0.7865	-nan	0.1000	0.0354
## 7	0.7577	-nan	0.1000	0.0267
## 8	0.7328	-nan	0.1000	0.0127
## 9	0.7146	-nan	0.1000	0.0153
## 10	0.7017	-nan	0.1000	0.0092
## 20	0.6386	-nan	0.1000	0.0001
## 40	0.6001	-nan	0.1000	-0.0109
## 60	0.5787	-nan	0.1000	-0.0019
## 80	0.5618	-nan	0.1000	-0.0118
## 100	0.5470	-nan	0.1000	-0.0072
## 120	0.5348	-nan	0.1000	-0.0114
## 140	0.5216	-nan	0.1000	-0.0068
## 150	0.5162	-nan	0.1000	-0.0085

```
## Warning: Setting row names on a tibble is deprecated.
```

## Iter	TrainDeviance	ValidDeviance	StepSize	Improve
## 1	1.0986	-nan	0.1000	0.1504
## 2	0.9923	-nan	0.1000	0.1090
## 3	0.9133	-nan	0.1000	0.0754
## 4	0.8548	-nan	0.1000	0.0534
## 5	0.8133	-nan	0.1000	0.0394
## 6	0.7758	-nan	0.1000	0.0223
## 7	0.7493	-nan	0.1000	0.0196
## 8	0.7244	-nan	0.1000	0.0093
## 9	0.7056	-nan	0.1000	-0.0160
## 10	0.6946	-nan	0.1000	-0.0010
## 20	0.6042	-nan	0.1000	-0.0133
## 40	0.5411	-nan	0.1000	-0.0145
## 60	0.5008	-nan	0.1000	-0.0112
## 80	0.4701	-nan	0.1000	-0.0061
## 100	0.4453	-nan	0.1000	-0.0117
## 120	0.4209	-nan	0.1000	-0.0085
## 140	0.3999	-nan	0.1000	-0.0115
## 150	0.3896	-nan	0.1000	-0.0058

```
## Warning: Setting row names on a tibble is deprecated.
```

## Iter	TrainDeviance	ValidDeviance	StepSize	Improve
---------	---------------	---------------	----------	---------

##	1	1.0986	-nan	0.1000	0.1559
##	2	0.9828	-nan	0.1000	0.0981
##	3	0.9058	-nan	0.1000	0.0704
##	4	0.8471	-nan	0.1000	0.0551
##	5	0.7939	-nan	0.1000	0.0314
##	6	0.7571	-nan	0.1000	0.0226
##	7	0.7262	-nan	0.1000	0.0058
##	8	0.7041	-nan	0.1000	0.0173
##	9	0.6841	-nan	0.1000	0.0079
##	10	0.6638	-nan	0.1000	0.0021
##	20	0.5737	-nan	0.1000	-0.0167
##	40	0.4829	-nan	0.1000	-0.0136
##	60	0.4341	-nan	0.1000	-0.0079
##	80	0.3910	-nan	0.1000	-0.0161
##	100	0.3627	-nan	0.1000	-0.0032
##	120	0.3404	-nan	0.1000	-0.0093
##	140	0.3259	-nan	0.1000	-0.0157
##	150	0.3171	-nan	0.1000	-0.0081

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1528
##	2	0.9927	-nan	0.1000	0.0999
##	3	0.9071	-nan	0.1000	0.0653
##	4	0.8556	-nan	0.1000	0.0569
##	5	0.8126	-nan	0.1000	0.0405
##	6	0.7830	-nan	0.1000	0.0380
##	7	0.7541	-nan	0.1000	0.0169
##	8	0.7359	-nan	0.1000	0.0165
##	9	0.7198	-nan	0.1000	0.0143
##	10	0.7037	-nan	0.1000	0.0100
##	20	0.6266	-nan	0.1000	0.0013
##	40	0.5908	-nan	0.1000	-0.0075
##	60	0.5734	-nan	0.1000	-0.0123
##	80	0.5582	-nan	0.1000	-0.0074
##	100	0.5448	-nan	0.1000	-0.0087
##	120	0.5305	-nan	0.1000	-0.0027
##	140	0.5198	-nan	0.1000	-0.0011
##	150	0.5137	-nan	0.1000	-0.0060

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1639
##	2	0.9865	-nan	0.1000	0.0937
##	3	0.9044	-nan	0.1000	0.0536
##	4	0.8383	-nan	0.1000	0.0496
##	5	0.7929	-nan	0.1000	0.0394
##	6	0.7558	-nan	0.1000	0.0081
##	7	0.7299	-nan	0.1000	0.0065
##	8	0.7127	-nan	0.1000	0.0126
##	9	0.6972	-nan	0.1000	0.0011
##	10	0.6786	-nan	0.1000	0.0021
##	20	0.6017	-nan	0.1000	-0.0112
##	40	0.5353	-nan	0.1000	-0.0128

##	60	0.4889	-nan	0.1000	-0.0073
##	80	0.4575	-nan	0.1000	-0.0083
##	100	0.4306	-nan	0.1000	-0.0110
##	120	0.4123	-nan	0.1000	-0.0042
##	140	0.3941	-nan	0.1000	-0.0142
##	150	0.3855	-nan	0.1000	-0.0088

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1439
##	2	0.9832	-nan	0.1000	0.1084
##	3	0.8993	-nan	0.1000	0.0776
##	4	0.8336	-nan	0.1000	0.0504
##	5	0.7866	-nan	0.1000	0.0450
##	6	0.7497	-nan	0.1000	0.0309
##	7	0.7223	-nan	0.1000	0.0155
##	8	0.6951	-nan	0.1000	0.0038
##	9	0.6735	-nan	0.1000	0.0018
##	10	0.6523	-nan	0.1000	0.0063
##	20	0.5549	-nan	0.1000	-0.0100
##	40	0.4706	-nan	0.1000	-0.0073
##	60	0.4262	-nan	0.1000	-0.0108
##	80	0.3897	-nan	0.1000	-0.0176
##	100	0.3620	-nan	0.1000	-0.0134
##	120	0.3373	-nan	0.1000	-0.0120
##	140	0.3206	-nan	0.1000	-0.0092
##	150	0.3108	-nan	0.1000	-0.0088

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1475
##	2	0.9894	-nan	0.1000	0.1135
##	3	0.9175	-nan	0.1000	0.0878
##	4	0.8596	-nan	0.1000	0.0699
##	5	0.8130	-nan	0.1000	0.0446
##	6	0.7785	-nan	0.1000	0.0290
##	7	0.7510	-nan	0.1000	0.0251
##	8	0.7283	-nan	0.1000	0.0256
##	9	0.7068	-nan	0.1000	0.0169
##	10	0.6913	-nan	0.1000	0.0140
##	20	0.6191	-nan	0.1000	-0.0010
##	40	0.5805	-nan	0.1000	-0.0106
##	60	0.5609	-nan	0.1000	-0.0016
##	80	0.5437	-nan	0.1000	-0.0029
##	100	0.5270	-nan	0.1000	-0.0074
##	120	0.5161	-nan	0.1000	-0.0027
##	140	0.5060	-nan	0.1000	-0.0088
##	150	0.4990	-nan	0.1000	-0.0053

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1394
##	2	0.9921	-nan	0.1000	0.1212
##	3	0.9113	-nan	0.1000	0.0779

##	4	0.8459	-nan	0.1000	0.0604
##	5	0.7947	-nan	0.1000	0.0410
##	6	0.7562	-nan	0.1000	0.0288
##	7	0.7251	-nan	0.1000	0.0273
##	8	0.7000	-nan	0.1000	0.0143
##	9	0.6817	-nan	0.1000	0.0172
##	10	0.6650	-nan	0.1000	0.0108
##	20	0.5818	-nan	0.1000	-0.0095
##	40	0.5184	-nan	0.1000	-0.0091
##	60	0.4809	-nan	0.1000	-0.0057
##	80	0.4484	-nan	0.1000	-0.0102
##	100	0.4288	-nan	0.1000	-0.0063
##	120	0.4069	-nan	0.1000	-0.0069
##	140	0.3891	-nan	0.1000	-0.0133
##	150	0.3826	-nan	0.1000	-0.0082

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1701
##	2	0.9747	-nan	0.1000	0.0905
##	3	0.8830	-nan	0.1000	0.0507
##	4	0.8264	-nan	0.1000	0.0352
##	5	0.7850	-nan	0.1000	0.0452
##	6	0.7456	-nan	0.1000	0.0223
##	7	0.7190	-nan	0.1000	0.0155
##	8	0.6948	-nan	0.1000	0.0056
##	9	0.6723	-nan	0.1000	0.0000
##	10	0.6541	-nan	0.1000	0.0136
##	20	0.5564	-nan	0.1000	-0.0106
##	40	0.4732	-nan	0.1000	-0.0009
##	60	0.4272	-nan	0.1000	-0.0069
##	80	0.3916	-nan	0.1000	-0.0215
##	100	0.3590	-nan	0.1000	-0.0153
##	120	0.3366	-nan	0.1000	-0.0115
##	140	0.3214	-nan	0.1000	-0.0085
##	150	0.3141	-nan	0.1000	-0.0045

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1501
##	2	0.9900	-nan	0.1000	0.1087
##	3	0.9161	-nan	0.1000	0.0716
##	4	0.8527	-nan	0.1000	0.0560
##	5	0.8024	-nan	0.1000	0.0420
##	6	0.7714	-nan	0.1000	0.0306
##	7	0.7453	-nan	0.1000	0.0192
##	8	0.7231	-nan	0.1000	0.0193
##	9	0.7051	-nan	0.1000	0.0082
##	10	0.6925	-nan	0.1000	0.0090
##	20	0.6241	-nan	0.1000	-0.0032
##	40	0.5849	-nan	0.1000	-0.0132
##	60	0.5643	-nan	0.1000	-0.0047
##	80	0.5481	-nan	0.1000	-0.0077
##	100	0.5347	-nan	0.1000	-0.0077

##	120	0.5198	-nan	0.1000	-0.0106
##	140	0.5090	-nan	0.1000	-0.0067
##	150	0.5048	-nan	0.1000	-0.0055

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1577
##	2	0.9910	-nan	0.1000	0.1165
##	3	0.9045	-nan	0.1000	0.0707
##	4	0.8349	-nan	0.1000	0.0480
##	5	0.7937	-nan	0.1000	0.0337
##	6	0.7566	-nan	0.1000	0.0330
##	7	0.7268	-nan	0.1000	0.0063
##	8	0.7035	-nan	0.1000	0.0191
##	9	0.6851	-nan	0.1000	0.0042
##	10	0.6671	-nan	0.1000	0.0141
##	20	0.5820	-nan	0.1000	0.0010
##	40	0.5239	-nan	0.1000	-0.0136
##	60	0.4822	-nan	0.1000	-0.0174
##	80	0.4597	-nan	0.1000	-0.0092
##	100	0.4337	-nan	0.1000	-0.0058
##	120	0.4136	-nan	0.1000	-0.0122
##	140	0.3943	-nan	0.1000	-0.0079
##	150	0.3849	-nan	0.1000	-0.0100

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1634
##	2	0.9768	-nan	0.1000	0.1060
##	3	0.8940	-nan	0.1000	0.0894
##	4	0.8311	-nan	0.1000	0.0746
##	5	0.7760	-nan	0.1000	0.0425
##	6	0.7371	-nan	0.1000	0.0331
##	7	0.7055	-nan	0.1000	0.0050
##	8	0.6826	-nan	0.1000	0.0167
##	9	0.6621	-nan	0.1000	0.0102
##	10	0.6456	-nan	0.1000	0.0010
##	20	0.5571	-nan	0.1000	-0.0102
##	40	0.4748	-nan	0.1000	-0.0153
##	60	0.4249	-nan	0.1000	-0.0323
##	80	0.3918	-nan	0.1000	-0.0079
##	100	0.3640	-nan	0.1000	-0.0117
##	120	0.3389	-nan	0.1000	-0.0185
##	140	0.3214	-nan	0.1000	-0.0141
##	150	0.3127	-nan	0.1000	-0.0068

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1688
##	2	0.9835	-nan	0.1000	0.1068
##	3	0.9104	-nan	0.1000	0.0756
##	4	0.8468	-nan	0.1000	0.0473
##	5	0.8028	-nan	0.1000	0.0373
##	6	0.7718	-nan	0.1000	0.0277

##	7	0.7470	-nan	0.1000	0.0197
##	8	0.7254	-nan	0.1000	0.0130
##	9	0.7091	-nan	0.1000	0.0133
##	10	0.6948	-nan	0.1000	0.0079
##	20	0.6294	-nan	0.1000	-0.0023
##	40	0.5900	-nan	0.1000	-0.0049
##	60	0.5713	-nan	0.1000	-0.0034
##	80	0.5569	-nan	0.1000	-0.0139
##	100	0.5429	-nan	0.1000	-0.0209
##	120	0.5296	-nan	0.1000	-0.0067
##	140	0.5188	-nan	0.1000	-0.0136
##	150	0.5154	-nan	0.1000	-0.0059

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1616
##	2	0.9908	-nan	0.1000	0.0996
##	3	0.9070	-nan	0.1000	0.0696
##	4	0.8469	-nan	0.1000	0.0547
##	5	0.7995	-nan	0.1000	0.0363
##	6	0.7589	-nan	0.1000	0.0329
##	7	0.7314	-nan	0.1000	0.0135
##	8	0.7080	-nan	0.1000	0.0085
##	9	0.6884	-nan	0.1000	0.0009
##	10	0.6742	-nan	0.1000	-0.0127
##	20	0.5946	-nan	0.1000	-0.0080
##	40	0.5241	-nan	0.1000	-0.0104
##	60	0.4809	-nan	0.1000	-0.0118
##	80	0.4514	-nan	0.1000	-0.0094
##	100	0.4296	-nan	0.1000	-0.0069
##	120	0.4108	-nan	0.1000	-0.0161
##	140	0.3891	-nan	0.1000	-0.0076
##	150	0.3807	-nan	0.1000	-0.0045

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1548
##	2	0.9812	-nan	0.1000	0.0938
##	3	0.8952	-nan	0.1000	0.0709
##	4	0.8310	-nan	0.1000	0.0525
##	5	0.7840	-nan	0.1000	0.0233
##	6	0.7511	-nan	0.1000	0.0222
##	7	0.7186	-nan	0.1000	0.0177
##	8	0.6940	-nan	0.1000	-0.0153
##	9	0.6750	-nan	0.1000	0.0106
##	10	0.6573	-nan	0.1000	-0.0002
##	20	0.5629	-nan	0.1000	-0.0164
##	40	0.4835	-nan	0.1000	-0.0169
##	60	0.4322	-nan	0.1000	-0.0146
##	80	0.3894	-nan	0.1000	-0.0110
##	100	0.3575	-nan	0.1000	-0.0068
##	120	0.3345	-nan	0.1000	-0.0103
##	140	0.3132	-nan	0.1000	-0.0149
##	150	0.3077	-nan	0.1000	-0.0095

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1476
##	2	0.9972	-nan	0.1000	0.1138
##	3	0.9197	-nan	0.1000	0.0804
##	4	0.8630	-nan	0.1000	0.0612
##	5	0.8183	-nan	0.1000	0.0319
##	6	0.7796	-nan	0.1000	0.0268
##	7	0.7519	-nan	0.1000	0.0165
##	8	0.7336	-nan	0.1000	0.0196
##	9	0.7174	-nan	0.1000	0.0063
##	10	0.7045	-nan	0.1000	0.0128
##	20	0.6318	-nan	0.1000	-0.0034
##	40	0.5931	-nan	0.1000	-0.0031
##	60	0.5789	-nan	0.1000	-0.0122
##	80	0.5613	-nan	0.1000	-0.0060
##	100	0.5489	-nan	0.1000	-0.0078
##	120	0.5391	-nan	0.1000	-0.0073
##	140	0.5288	-nan	0.1000	-0.0082
##	150	0.5235	-nan	0.1000	-0.0145

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1443
##	2	0.9880	-nan	0.1000	0.1009
##	3	0.9047	-nan	0.1000	0.0646
##	4	0.8458	-nan	0.1000	0.0531
##	5	0.7976	-nan	0.1000	0.0394
##	6	0.7599	-nan	0.1000	0.0238
##	7	0.7305	-nan	0.1000	0.0225
##	8	0.7075	-nan	0.1000	0.0120
##	9	0.6900	-nan	0.1000	0.0106
##	10	0.6755	-nan	0.1000	-0.0017
##	20	0.5936	-nan	0.1000	-0.0139
##	40	0.5358	-nan	0.1000	-0.0129
##	60	0.5031	-nan	0.1000	-0.0112
##	80	0.4677	-nan	0.1000	-0.0042
##	100	0.4462	-nan	0.1000	-0.0063
##	120	0.4235	-nan	0.1000	-0.0129
##	140	0.4049	-nan	0.1000	-0.0110
##	150	0.3962	-nan	0.1000	-0.0091

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1661
##	2	0.9799	-nan	0.1000	0.0938
##	3	0.8991	-nan	0.1000	0.0836
##	4	0.8352	-nan	0.1000	0.0635
##	5	0.7869	-nan	0.1000	0.0346
##	6	0.7485	-nan	0.1000	0.0343
##	7	0.7218	-nan	0.1000	0.0096
##	8	0.6960	-nan	0.1000	-0.0027
##	9	0.6780	-nan	0.1000	-0.0098

##	10	0.6625	-nan	0.1000	0.0061
##	20	0.5717	-nan	0.1000	-0.0162
##	40	0.4867	-nan	0.1000	-0.0082
##	60	0.4372	-nan	0.1000	-0.0206
##	80	0.3985	-nan	0.1000	-0.0130
##	100	0.3704	-nan	0.1000	-0.0075
##	120	0.3432	-nan	0.1000	-0.0120
##	140	0.3242	-nan	0.1000	-0.0107
##	150	0.3157	-nan	0.1000	-0.0097

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1421
##	2	0.9931	-nan	0.1000	0.1140
##	3	0.9159	-nan	0.1000	0.0687
##	4	0.8558	-nan	0.1000	0.0547
##	5	0.8124	-nan	0.1000	0.0399
##	6	0.7787	-nan	0.1000	0.0308
##	7	0.7505	-nan	0.1000	0.0253
##	8	0.7298	-nan	0.1000	0.0191
##	9	0.7123	-nan	0.1000	0.0051
##	10	0.6991	-nan	0.1000	0.0054
##	20	0.6283	-nan	0.1000	-0.0025
##	40	0.5879	-nan	0.1000	-0.0079
##	60	0.5662	-nan	0.1000	-0.0070
##	80	0.5506	-nan	0.1000	-0.0055
##	100	0.5364	-nan	0.1000	-0.0100
##	120	0.5226	-nan	0.1000	-0.0067
##	140	0.5096	-nan	0.1000	-0.0053
##	150	0.5058	-nan	0.1000	-0.0124

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1524
##	2	0.9911	-nan	0.1000	0.0984
##	3	0.9132	-nan	0.1000	0.0705
##	4	0.8552	-nan	0.1000	0.0526
##	5	0.8021	-nan	0.1000	0.0437
##	6	0.7655	-nan	0.1000	0.0266
##	7	0.7354	-nan	0.1000	0.0176
##	8	0.7127	-nan	0.1000	0.0211
##	9	0.6913	-nan	0.1000	0.0070
##	10	0.6743	-nan	0.1000	-0.0018
##	20	0.5861	-nan	0.1000	0.0009
##	40	0.5151	-nan	0.1000	-0.0072
##	60	0.4742	-nan	0.1000	-0.0128
##	80	0.4452	-nan	0.1000	-0.0110
##	100	0.4178	-nan	0.1000	-0.0129
##	120	0.4000	-nan	0.1000	-0.0159
##	140	0.3808	-nan	0.1000	-0.0099
##	150	0.3756	-nan	0.1000	-0.0099

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
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##	1	1.0986	-nan	0.1000	0.1567
##	2	0.9863	-nan	0.1000	0.0787
##	3	0.9027	-nan	0.1000	0.0682
##	4	0.8419	-nan	0.1000	0.0593
##	5	0.7892	-nan	0.1000	0.0417
##	6	0.7524	-nan	0.1000	0.0161
##	7	0.7227	-nan	0.1000	0.0204
##	8	0.6935	-nan	0.1000	0.0094
##	9	0.6734	-nan	0.1000	0.0123
##	10	0.6560	-nan	0.1000	0.0046
##	20	0.5525	-nan	0.1000	-0.0030
##	40	0.4569	-nan	0.1000	-0.0252
##	60	0.4110	-nan	0.1000	-0.0174
##	80	0.3790	-nan	0.1000	-0.0112
##	100	0.3510	-nan	0.1000	-0.0072
##	120	0.3266	-nan	0.1000	-0.0112
##	140	0.3089	-nan	0.1000	-0.0090
##	150	0.3005	-nan	0.1000	-0.0101

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1595
##	2	0.9924	-nan	0.1000	0.1081
##	3	0.9155	-nan	0.1000	0.0776
##	4	0.8586	-nan	0.1000	0.0622
##	5	0.8145	-nan	0.1000	0.0308
##	6	0.7793	-nan	0.1000	0.0323
##	7	0.7507	-nan	0.1000	0.0281
##	8	0.7277	-nan	0.1000	0.0212
##	9	0.7093	-nan	0.1000	0.0154
##	10	0.6950	-nan	0.1000	0.0131
##	20	0.6183	-nan	0.1000	-0.0005
##	40	0.5780	-nan	0.1000	-0.0105
##	60	0.5534	-nan	0.1000	-0.0044
##	80	0.5366	-nan	0.1000	-0.0023
##	100	0.5259	-nan	0.1000	-0.0058
##	120	0.5129	-nan	0.1000	-0.0066
##	140	0.4993	-nan	0.1000	-0.0041
##	150	0.4944	-nan	0.1000	-0.0120

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1665
##	2	0.9869	-nan	0.1000	0.1106
##	3	0.9038	-nan	0.1000	0.0813
##	4	0.8409	-nan	0.1000	0.0472
##	5	0.7893	-nan	0.1000	0.0305
##	6	0.7549	-nan	0.1000	0.0177
##	7	0.7247	-nan	0.1000	0.0235
##	8	0.7007	-nan	0.1000	0.0228
##	9	0.6772	-nan	0.1000	0.0136
##	10	0.6587	-nan	0.1000	0.0116
##	20	0.5729	-nan	0.1000	-0.0118
##	40	0.5072	-nan	0.1000	-0.0110

##	60	0.4711	-nan	0.1000	-0.0163
##	80	0.4395	-nan	0.1000	-0.0158
##	100	0.4101	-nan	0.1000	-0.0148
##	120	0.3866	-nan	0.1000	-0.0128
##	140	0.3666	-nan	0.1000	-0.0104
##	150	0.3574	-nan	0.1000	-0.0078

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1597
##	2	0.9866	-nan	0.1000	0.0932
##	3	0.9094	-nan	0.1000	0.0923
##	4	0.8418	-nan	0.1000	0.0577
##	5	0.7877	-nan	0.1000	0.0409
##	6	0.7494	-nan	0.1000	0.0213
##	7	0.7236	-nan	0.1000	0.0290
##	8	0.6947	-nan	0.1000	0.0281
##	9	0.6701	-nan	0.1000	0.0093
##	10	0.6500	-nan	0.1000	0.0081
##	20	0.5379	-nan	0.1000	-0.0143
##	40	0.4550	-nan	0.1000	-0.0024
##	60	0.4017	-nan	0.1000	-0.0123
##	80	0.3632	-nan	0.1000	-0.0096
##	100	0.3312	-nan	0.1000	-0.0055
##	120	0.3106	-nan	0.1000	-0.0066
##	140	0.2922	-nan	0.1000	-0.0175
##	150	0.2851	-nan	0.1000	-0.0043

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1474
##	2	0.9862	-nan	0.1000	0.0926
##	3	0.9122	-nan	0.1000	0.0795
##	4	0.8545	-nan	0.1000	0.0552
##	5	0.8067	-nan	0.1000	0.0371
##	6	0.7713	-nan	0.1000	0.0252
##	7	0.7465	-nan	0.1000	0.0156
##	8	0.7291	-nan	0.1000	0.0160
##	9	0.7119	-nan	0.1000	0.0137
##	10	0.6986	-nan	0.1000	0.0078
##	20	0.6322	-nan	0.1000	-0.0078
##	40	0.5973	-nan	0.1000	-0.0090
##	60	0.5777	-nan	0.1000	-0.0065
##	80	0.5584	-nan	0.1000	-0.0074
##	100	0.5446	-nan	0.1000	-0.0035
##	120	0.5320	-nan	0.1000	-0.0035
##	140	0.5247	-nan	0.1000	-0.0145
##	150	0.5207	-nan	0.1000	-0.0043

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1571
##	2	0.9859	-nan	0.1000	0.1056
##	3	0.9068	-nan	0.1000	0.0678

##	4	0.8443	-nan	0.1000	0.0556
##	5	0.8004	-nan	0.1000	0.0354
##	6	0.7680	-nan	0.1000	0.0265
##	7	0.7384	-nan	0.1000	0.0158
##	8	0.7130	-nan	0.1000	0.0116
##	9	0.6921	-nan	0.1000	0.0076
##	10	0.6788	-nan	0.1000	-0.0015
##	20	0.5945	-nan	0.1000	-0.0231
##	40	0.5278	-nan	0.1000	-0.0037
##	60	0.4910	-nan	0.1000	-0.0151
##	80	0.4608	-nan	0.1000	-0.0103
##	100	0.4382	-nan	0.1000	-0.0177
##	120	0.4190	-nan	0.1000	-0.0106
##	140	0.4053	-nan	0.1000	-0.0155
##	150	0.3973	-nan	0.1000	-0.0093

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1501
##	2	0.9915	-nan	0.1000	0.1061
##	3	0.9113	-nan	0.1000	0.0778
##	4	0.8431	-nan	0.1000	0.0534
##	5	0.7907	-nan	0.1000	0.0161
##	6	0.7566	-nan	0.1000	0.0320
##	7	0.7252	-nan	0.1000	0.0089
##	8	0.6988	-nan	0.1000	0.0112
##	9	0.6771	-nan	0.1000	-0.0008
##	10	0.6597	-nan	0.1000	0.0037
##	20	0.5654	-nan	0.1000	-0.0021
##	40	0.4766	-nan	0.1000	-0.0046
##	60	0.4256	-nan	0.1000	-0.0192
##	80	0.3931	-nan	0.1000	-0.0107
##	100	0.3715	-nan	0.1000	-0.0124
##	120	0.3461	-nan	0.1000	-0.0076
##	140	0.3289	-nan	0.1000	-0.0183
##	150	0.3212	-nan	0.1000	-0.0096

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1616
##	2	0.9865	-nan	0.1000	0.1058
##	3	0.9141	-nan	0.1000	0.0730
##	4	0.8515	-nan	0.1000	0.0488
##	5	0.8099	-nan	0.1000	0.0357
##	6	0.7778	-nan	0.1000	0.0337
##	7	0.7483	-nan	0.1000	0.0191
##	8	0.7257	-nan	0.1000	0.0131
##	9	0.7085	-nan	0.1000	0.0068
##	10	0.6962	-nan	0.1000	0.0101
##	20	0.6250	-nan	0.1000	-0.0085
##	40	0.5853	-nan	0.1000	-0.0056
##	60	0.5648	-nan	0.1000	-0.0035
##	80	0.5489	-nan	0.1000	-0.0120
##	100	0.5367	-nan	0.1000	-0.0118

##	120	0.5265	-nan	0.1000	-0.0126
##	140	0.5174	-nan	0.1000	-0.0089
##	150	0.5127	-nan	0.1000	-0.0066

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1574
##	2	0.9860	-nan	0.1000	0.1092
##	3	0.9060	-nan	0.1000	0.0842
##	4	0.8396	-nan	0.1000	0.0567
##	5	0.7976	-nan	0.1000	0.0466
##	6	0.7599	-nan	0.1000	0.0280
##	7	0.7272	-nan	0.1000	0.0187
##	8	0.7042	-nan	0.1000	0.0133
##	9	0.6847	-nan	0.1000	0.0115
##	10	0.6695	-nan	0.1000	0.0107
##	20	0.5801	-nan	0.1000	-0.0074
##	40	0.5184	-nan	0.1000	-0.0185
##	60	0.4844	-nan	0.1000	-0.0097
##	80	0.4638	-nan	0.1000	-0.0074
##	100	0.4359	-nan	0.1000	-0.0053
##	120	0.4167	-nan	0.1000	-0.0119
##	140	0.3986	-nan	0.1000	-0.0075
##	150	0.3920	-nan	0.1000	-0.0194

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1468
##	2	0.9927	-nan	0.1000	0.1170
##	3	0.9048	-nan	0.1000	0.0760
##	4	0.8408	-nan	0.1000	0.0683
##	5	0.7847	-nan	0.1000	0.0272
##	6	0.7449	-nan	0.1000	-0.0005
##	7	0.7148	-nan	0.1000	0.0136
##	8	0.6931	-nan	0.1000	0.0143
##	9	0.6690	-nan	0.1000	0.0123
##	10	0.6480	-nan	0.1000	0.0066
##	20	0.5521	-nan	0.1000	-0.0061
##	40	0.4736	-nan	0.1000	-0.0120
##	60	0.4323	-nan	0.1000	-0.0154
##	80	0.3983	-nan	0.1000	-0.0034
##	100	0.3633	-nan	0.1000	-0.0059
##	120	0.3430	-nan	0.1000	-0.0115
##	140	0.3228	-nan	0.1000	-0.0120
##	150	0.3174	-nan	0.1000	-0.0050

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1504
##	2	0.9850	-nan	0.1000	0.1032
##	3	0.9141	-nan	0.1000	0.0658
##	4	0.8584	-nan	0.1000	0.0519
##	5	0.8144	-nan	0.1000	0.0430
##	6	0.7769	-nan	0.1000	0.0275

##	7	0.7532	-nan	0.1000	0.0043
##	8	0.7347	-nan	0.1000	0.0048
##	9	0.7186	-nan	0.1000	0.0174
##	10	0.7014	-nan	0.1000	-0.0082
##	20	0.6340	-nan	0.1000	-0.0031
##	40	0.6015	-nan	0.1000	-0.0075
##	60	0.5832	-nan	0.1000	-0.0045
##	80	0.5642	-nan	0.1000	-0.0111
##	100	0.5516	-nan	0.1000	-0.0030
##	120	0.5381	-nan	0.1000	-0.0172
##	140	0.5274	-nan	0.1000	-0.0051
##	150	0.5237	-nan	0.1000	-0.0053

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1524
##	2	0.9910	-nan	0.1000	0.1153
##	3	0.9128	-nan	0.1000	0.0717
##	4	0.8495	-nan	0.1000	0.0588
##	5	0.8055	-nan	0.1000	0.0436
##	6	0.7672	-nan	0.1000	0.0237
##	7	0.7360	-nan	0.1000	0.0219
##	8	0.7125	-nan	0.1000	0.0080
##	9	0.6944	-nan	0.1000	0.0025
##	10	0.6816	-nan	0.1000	0.0054
##	20	0.5971	-nan	0.1000	-0.0140
##	40	0.5415	-nan	0.1000	-0.0112
##	60	0.4999	-nan	0.1000	-0.0100
##	80	0.4711	-nan	0.1000	-0.0207
##	100	0.4422	-nan	0.1000	-0.0100
##	120	0.4199	-nan	0.1000	-0.0191
##	140	0.4011	-nan	0.1000	-0.0219
##	150	0.3947	-nan	0.1000	-0.0092

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1607
##	2	0.9876	-nan	0.1000	0.1154
##	3	0.8994	-nan	0.1000	0.0797
##	4	0.8316	-nan	0.1000	0.0579
##	5	0.7846	-nan	0.1000	0.0298
##	6	0.7481	-nan	0.1000	0.0313
##	7	0.7176	-nan	0.1000	0.0122
##	8	0.6953	-nan	0.1000	0.0094
##	9	0.6740	-nan	0.1000	-0.0024
##	10	0.6548	-nan	0.1000	-0.0054
##	20	0.5680	-nan	0.1000	-0.0105
##	40	0.4883	-nan	0.1000	-0.0091
##	60	0.4356	-nan	0.1000	-0.0203
##	80	0.4011	-nan	0.1000	-0.0200
##	100	0.3770	-nan	0.1000	-0.0154
##	120	0.3555	-nan	0.1000	-0.0120
##	140	0.3349	-nan	0.1000	-0.0064
##	150	0.3279	-nan	0.1000	-0.0092

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1504
##	2	0.9926	-nan	0.1000	0.0994
##	3	0.9185	-nan	0.1000	0.0794
##	4	0.8649	-nan	0.1000	0.0589
##	5	0.8247	-nan	0.1000	0.0457
##	6	0.7858	-nan	0.1000	0.0344
##	7	0.7605	-nan	0.1000	0.0337
##	8	0.7370	-nan	0.1000	0.0070
##	9	0.7166	-nan	0.1000	0.0089
##	10	0.7038	-nan	0.1000	-0.0055
##	20	0.6369	-nan	0.1000	-0.0059
##	40	0.6037	-nan	0.1000	-0.0066
##	60	0.5802	-nan	0.1000	-0.0239
##	80	0.5606	-nan	0.1000	-0.0161
##	100	0.5512	-nan	0.1000	-0.0023
##	120	0.5388	-nan	0.1000	-0.0095
##	140	0.5301	-nan	0.1000	-0.0052
##	150	0.5281	-nan	0.1000	-0.0123

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1531
##	2	0.9947	-nan	0.1000	0.1104
##	3	0.9146	-nan	0.1000	0.0744
##	4	0.8516	-nan	0.1000	0.0437
##	5	0.8017	-nan	0.1000	0.0312
##	6	0.7682	-nan	0.1000	0.0129
##	7	0.7424	-nan	0.1000	0.0146
##	8	0.7203	-nan	0.1000	0.0060
##	9	0.6990	-nan	0.1000	0.0058
##	10	0.6825	-nan	0.1000	-0.0047
##	20	0.5997	-nan	0.1000	-0.0128
##	40	0.5319	-nan	0.1000	-0.0129
##	60	0.4973	-nan	0.1000	-0.0113
##	80	0.4634	-nan	0.1000	-0.0178
##	100	0.4329	-nan	0.1000	-0.0136
##	120	0.4137	-nan	0.1000	-0.0116
##	140	0.3940	-nan	0.1000	-0.0078
##	150	0.3869	-nan	0.1000	-0.0076

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1542
##	2	0.9870	-nan	0.1000	0.1064
##	3	0.9097	-nan	0.1000	0.0695
##	4	0.8426	-nan	0.1000	0.0533
##	5	0.7927	-nan	0.1000	0.0385
##	6	0.7546	-nan	0.1000	0.0100
##	7	0.7233	-nan	0.1000	0.0112
##	8	0.6994	-nan	0.1000	0.0032
##	9	0.6783	-nan	0.1000	-0.0042

##	10	0.6607	-nan	0.1000	0.0042
##	20	0.5689	-nan	0.1000	-0.0027
##	40	0.4827	-nan	0.1000	-0.0080
##	60	0.4248	-nan	0.1000	-0.0016
##	80	0.3893	-nan	0.1000	-0.0062
##	100	0.3614	-nan	0.1000	-0.0124
##	120	0.3396	-nan	0.1000	-0.0122
##	140	0.3244	-nan	0.1000	-0.0087
##	150	0.3127	-nan	0.1000	-0.0046

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1586
##	2	0.9901	-nan	0.1000	0.1015
##	3	0.9093	-nan	0.1000	0.0612
##	4	0.8519	-nan	0.1000	0.0530
##	5	0.8096	-nan	0.1000	0.0432
##	6	0.7763	-nan	0.1000	0.0312
##	7	0.7503	-nan	0.1000	0.0210
##	8	0.7293	-nan	0.1000	0.0070
##	9	0.7123	-nan	0.1000	0.0187
##	10	0.6941	-nan	0.1000	0.0124
##	20	0.6263	-nan	0.1000	-0.0043
##	40	0.5867	-nan	0.1000	-0.0084
##	60	0.5628	-nan	0.1000	-0.0040
##	80	0.5436	-nan	0.1000	-0.0088
##	100	0.5290	-nan	0.1000	-0.0055
##	120	0.5185	-nan	0.1000	-0.0030
##	140	0.5069	-nan	0.1000	-0.0154
##	150	0.4992	-nan	0.1000	-0.0082

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1700
##	2	0.9875	-nan	0.1000	0.1075
##	3	0.9142	-nan	0.1000	0.0691
##	4	0.8495	-nan	0.1000	0.0688
##	5	0.7958	-nan	0.1000	0.0393
##	6	0.7622	-nan	0.1000	0.0312
##	7	0.7291	-nan	0.1000	0.0258
##	8	0.7053	-nan	0.1000	0.0102
##	9	0.6852	-nan	0.1000	0.0044
##	10	0.6711	-nan	0.1000	0.0027
##	20	0.5858	-nan	0.1000	-0.0054
##	40	0.5105	-nan	0.1000	-0.0041
##	60	0.4712	-nan	0.1000	-0.0191
##	80	0.4452	-nan	0.1000	-0.0056
##	100	0.4228	-nan	0.1000	-0.0084
##	120	0.3994	-nan	0.1000	-0.0078
##	140	0.3826	-nan	0.1000	-0.0074
##	150	0.3734	-nan	0.1000	-0.0051

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
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##	1	1.0986	-nan	0.1000	0.1560
##	2	0.9765	-nan	0.1000	0.0943
##	3	0.8975	-nan	0.1000	0.0737
##	4	0.8368	-nan	0.1000	0.0473
##	5	0.7896	-nan	0.1000	0.0482
##	6	0.7502	-nan	0.1000	0.0408
##	7	0.7190	-nan	0.1000	0.0252
##	8	0.6882	-nan	0.1000	0.0021
##	9	0.6678	-nan	0.1000	-0.0013
##	10	0.6523	-nan	0.1000	0.0044
##	20	0.5523	-nan	0.1000	-0.0114
##	40	0.4653	-nan	0.1000	-0.0188
##	60	0.4180	-nan	0.1000	-0.0120
##	80	0.3824	-nan	0.1000	-0.0071
##	100	0.3580	-nan	0.1000	-0.0081
##	120	0.3365	-nan	0.1000	-0.0058
##	140	0.3180	-nan	0.1000	-0.0054
##	150	0.3113	-nan	0.1000	-0.0106

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1555
##	2	0.9843	-nan	0.1000	0.1095
##	3	0.9128	-nan	0.1000	0.0815
##	4	0.8531	-nan	0.1000	0.0600
##	5	0.8093	-nan	0.1000	0.0397
##	6	0.7764	-nan	0.1000	0.0346
##	7	0.7477	-nan	0.1000	0.0246
##	8	0.7238	-nan	0.1000	0.0008
##	9	0.7064	-nan	0.1000	0.0016
##	10	0.6920	-nan	0.1000	0.0055
##	20	0.6208	-nan	0.1000	-0.0127
##	40	0.5810	-nan	0.1000	-0.0052
##	60	0.5563	-nan	0.1000	-0.0120
##	80	0.5368	-nan	0.1000	-0.0024
##	100	0.5203	-nan	0.1000	-0.0134
##	120	0.5069	-nan	0.1000	-0.0049
##	140	0.4952	-nan	0.1000	-0.0057
##	150	0.4902	-nan	0.1000	-0.0114

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1672
##	2	0.9876	-nan	0.1000	0.1081
##	3	0.9022	-nan	0.1000	0.0701
##	4	0.8401	-nan	0.1000	0.0623
##	5	0.7931	-nan	0.1000	0.0255
##	6	0.7548	-nan	0.1000	0.0243
##	7	0.7231	-nan	0.1000	0.0197
##	8	0.6991	-nan	0.1000	0.0183
##	9	0.6782	-nan	0.1000	0.0129
##	10	0.6640	-nan	0.1000	-0.0053
##	20	0.5737	-nan	0.1000	-0.0034
##	40	0.5063	-nan	0.1000	-0.0120

##	60	0.4716	-nan	0.1000	-0.0091
##	80	0.4442	-nan	0.1000	-0.0195
##	100	0.4138	-nan	0.1000	-0.0064
##	120	0.3946	-nan	0.1000	-0.0129
##	140	0.3769	-nan	0.1000	-0.0084
##	150	0.3722	-nan	0.1000	-0.0088

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1554
##	2	0.9884	-nan	0.1000	0.1292
##	3	0.9046	-nan	0.1000	0.0868
##	4	0.8376	-nan	0.1000	0.0564
##	5	0.7900	-nan	0.1000	0.0244
##	6	0.7534	-nan	0.1000	0.0337
##	7	0.7146	-nan	0.1000	0.0215
##	8	0.6879	-nan	0.1000	0.0130
##	9	0.6657	-nan	0.1000	0.0117
##	10	0.6470	-nan	0.1000	-0.0031
##	20	0.5489	-nan	0.1000	-0.0060
##	40	0.4635	-nan	0.1000	-0.0097
##	60	0.4126	-nan	0.1000	-0.0090
##	80	0.3836	-nan	0.1000	-0.0201
##	100	0.3616	-nan	0.1000	-0.0147
##	120	0.3383	-nan	0.1000	-0.0089
##	140	0.3226	-nan	0.1000	-0.0077
##	150	0.3123	-nan	0.1000	-0.0074

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1556
##	2	0.9847	-nan	0.1000	0.1093
##	3	0.9010	-nan	0.1000	0.0794
##	4	0.8408	-nan	0.1000	0.0542
##	5	0.7983	-nan	0.1000	0.0354
##	6	0.7643	-nan	0.1000	0.0248
##	7	0.7396	-nan	0.1000	0.0205
##	8	0.7192	-nan	0.1000	0.0165
##	9	0.7027	-nan	0.1000	0.0085
##	10	0.6895	-nan	0.1000	0.0046
##	20	0.6229	-nan	0.1000	-0.0048
##	40	0.5869	-nan	0.1000	-0.0144
##	60	0.5680	-nan	0.1000	-0.0131
##	80	0.5528	-nan	0.1000	-0.0040
##	100	0.5405	-nan	0.1000	-0.0109
##	120	0.5254	-nan	0.1000	-0.0056
##	140	0.5144	-nan	0.1000	-0.0221
##	150	0.5077	-nan	0.1000	-0.0058

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1544
##	2	0.9828	-nan	0.1000	0.1088
##	3	0.8999	-nan	0.1000	0.0724

##	4	0.8449	-nan	0.1000	0.0578
##	5	0.7961	-nan	0.1000	0.0389
##	6	0.7635	-nan	0.1000	0.0372
##	7	0.7303	-nan	0.1000	0.0156
##	8	0.7075	-nan	0.1000	0.0062
##	9	0.6865	-nan	0.1000	0.0101
##	10	0.6683	-nan	0.1000	0.0032
##	20	0.5929	-nan	0.1000	-0.0054
##	40	0.5216	-nan	0.1000	-0.0128
##	60	0.4877	-nan	0.1000	-0.0075
##	80	0.4592	-nan	0.1000	-0.0212
##	100	0.4315	-nan	0.1000	-0.0100
##	120	0.4086	-nan	0.1000	-0.0066
##	140	0.3936	-nan	0.1000	-0.0039
##	150	0.3837	-nan	0.1000	-0.0045

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1609
##	2	0.9743	-nan	0.1000	0.1021
##	3	0.8892	-nan	0.1000	0.0558
##	4	0.8304	-nan	0.1000	0.0563
##	5	0.7818	-nan	0.1000	0.0465
##	6	0.7433	-nan	0.1000	0.0290
##	7	0.7083	-nan	0.1000	0.0262
##	8	0.6823	-nan	0.1000	0.0142
##	9	0.6617	-nan	0.1000	0.0100
##	10	0.6436	-nan	0.1000	0.0056
##	20	0.5506	-nan	0.1000	-0.0102
##	40	0.4723	-nan	0.1000	-0.0264
##	60	0.4219	-nan	0.1000	-0.0162
##	80	0.3953	-nan	0.1000	-0.0110
##	100	0.3645	-nan	0.1000	-0.0065
##	120	0.3406	-nan	0.1000	-0.0119
##	140	0.3217	-nan	0.1000	-0.0119
##	150	0.3162	-nan	0.1000	-0.0074

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1556
##	2	0.9873	-nan	0.1000	0.1059
##	3	0.9050	-nan	0.1000	0.0770
##	4	0.8457	-nan	0.1000	0.0523
##	5	0.8013	-nan	0.1000	0.0329
##	6	0.7712	-nan	0.1000	0.0336
##	7	0.7438	-nan	0.1000	0.0275
##	8	0.7208	-nan	0.1000	0.0193
##	9	0.7034	-nan	0.1000	0.0124
##	10	0.6879	-nan	0.1000	0.0099
##	20	0.6167	-nan	0.1000	-0.0115
##	40	0.5807	-nan	0.1000	-0.0099
##	60	0.5590	-nan	0.1000	-0.0040
##	80	0.5440	-nan	0.1000	-0.0037
##	100	0.5335	-nan	0.1000	-0.0118

##	120	0.5197	-nan	0.1000	-0.0027
##	140	0.5080	-nan	0.1000	-0.0091
##	150	0.5042	-nan	0.1000	-0.0172

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1538
##	2	0.9920	-nan	0.1000	0.1083
##	3	0.9096	-nan	0.1000	0.0743
##	4	0.8498	-nan	0.1000	0.0562
##	5	0.8020	-nan	0.1000	0.0466
##	6	0.7570	-nan	0.1000	0.0193
##	7	0.7276	-nan	0.1000	0.0097
##	8	0.7030	-nan	0.1000	0.0098
##	9	0.6803	-nan	0.1000	0.0135
##	10	0.6631	-nan	0.1000	-0.0110
##	20	0.5775	-nan	0.1000	-0.0081
##	40	0.5145	-nan	0.1000	-0.0106
##	60	0.4746	-nan	0.1000	-0.0119
##	80	0.4425	-nan	0.1000	-0.0077
##	100	0.4192	-nan	0.1000	-0.0050
##	120	0.3996	-nan	0.1000	-0.0200
##	140	0.3816	-nan	0.1000	-0.0130
##	150	0.3727	-nan	0.1000	-0.0129

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1549
##	2	0.9863	-nan	0.1000	0.1255
##	3	0.8959	-nan	0.1000	0.0819
##	4	0.8266	-nan	0.1000	0.0638
##	5	0.7721	-nan	0.1000	0.0241
##	6	0.7370	-nan	0.1000	0.0178
##	7	0.7056	-nan	0.1000	0.0180
##	8	0.6821	-nan	0.1000	0.0068
##	9	0.6633	-nan	0.1000	0.0157
##	10	0.6441	-nan	0.1000	0.0065
##	20	0.5477	-nan	0.1000	-0.0029
##	40	0.4762	-nan	0.1000	-0.0081
##	60	0.4282	-nan	0.1000	-0.0077
##	80	0.3943	-nan	0.1000	-0.0115
##	100	0.3644	-nan	0.1000	-0.0131
##	120	0.3432	-nan	0.1000	-0.0087
##	140	0.3225	-nan	0.1000	-0.0091
##	150	0.3154	-nan	0.1000	-0.0072

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1508
##	2	0.9918	-nan	0.1000	0.1018
##	3	0.9118	-nan	0.1000	0.0647
##	4	0.8538	-nan	0.1000	0.0506
##	5	0.8120	-nan	0.1000	0.0410
##	6	0.7761	-nan	0.1000	0.0342

##	7	0.7509	-nan	0.1000	0.0203
##	8	0.7272	-nan	0.1000	0.0210
##	9	0.7100	-nan	0.1000	0.0147
##	10	0.6918	-nan	0.1000	0.0073
##	20	0.6206	-nan	0.1000	-0.0059
##	40	0.5807	-nan	0.1000	-0.0036
##	60	0.5633	-nan	0.1000	-0.0054
##	80	0.5447	-nan	0.1000	-0.0107
##	100	0.5309	-nan	0.1000	-0.0119
##	120	0.5206	-nan	0.1000	-0.0100
##	140	0.5089	-nan	0.1000	-0.0039
##	150	0.5042	-nan	0.1000	-0.0086

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1369
##	2	0.9867	-nan	0.1000	0.1077
##	3	0.9089	-nan	0.1000	0.0724
##	4	0.8482	-nan	0.1000	0.0653
##	5	0.8011	-nan	0.1000	0.0296
##	6	0.7671	-nan	0.1000	0.0252
##	7	0.7352	-nan	0.1000	0.0065
##	8	0.7132	-nan	0.1000	0.0088
##	9	0.6927	-nan	0.1000	0.0058
##	10	0.6755	-nan	0.1000	0.0093
##	20	0.5859	-nan	0.1000	-0.0076
##	40	0.5145	-nan	0.1000	-0.0085
##	60	0.4805	-nan	0.1000	-0.0075
##	80	0.4460	-nan	0.1000	-0.0218
##	100	0.4221	-nan	0.1000	-0.0139
##	120	0.4043	-nan	0.1000	-0.0088
##	140	0.3892	-nan	0.1000	-0.0075
##	150	0.3810	-nan	0.1000	-0.0089

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1393
##	2	0.9890	-nan	0.1000	0.0935
##	3	0.9033	-nan	0.1000	0.0789
##	4	0.8413	-nan	0.1000	0.0594
##	5	0.7886	-nan	0.1000	0.0229
##	6	0.7528	-nan	0.1000	0.0204
##	7	0.7217	-nan	0.1000	0.0138
##	8	0.6938	-nan	0.1000	-0.0011
##	9	0.6766	-nan	0.1000	0.0045
##	10	0.6573	-nan	0.1000	0.0063
##	20	0.5579	-nan	0.1000	-0.0027
##	40	0.4736	-nan	0.1000	-0.0158
##	60	0.4245	-nan	0.1000	-0.0082
##	80	0.3871	-nan	0.1000	-0.0114
##	100	0.3605	-nan	0.1000	-0.0077
##	120	0.3439	-nan	0.1000	-0.0060
##	140	0.3256	-nan	0.1000	-0.0085
##	150	0.3188	-nan	0.1000	-0.0080

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1456
##	2	0.9795	-nan	0.1000	0.1020
##	3	0.8985	-nan	0.1000	0.0746
##	4	0.8472	-nan	0.1000	0.0515
##	5	0.8090	-nan	0.1000	0.0398
##	6	0.7750	-nan	0.1000	0.0273
##	7	0.7445	-nan	0.1000	0.0190
##	8	0.7233	-nan	0.1000	0.0108
##	9	0.7079	-nan	0.1000	0.0137
##	10	0.6934	-nan	0.1000	-0.0032
##	20	0.6281	-nan	0.1000	-0.0023
##	40	0.5932	-nan	0.1000	-0.0115
##	60	0.5704	-nan	0.1000	-0.0104
##	80	0.5551	-nan	0.1000	-0.0099
##	100	0.5387	-nan	0.1000	-0.0065
##	120	0.5315	-nan	0.1000	-0.0024
##	140	0.5146	-nan	0.1000	-0.0107
##	150	0.5104	-nan	0.1000	-0.0088

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1708
##	2	0.9882	-nan	0.1000	0.1052
##	3	0.9084	-nan	0.1000	0.0773
##	4	0.8451	-nan	0.1000	0.0612
##	5	0.8016	-nan	0.1000	0.0425
##	6	0.7649	-nan	0.1000	0.0320
##	7	0.7326	-nan	0.1000	0.0173
##	8	0.7088	-nan	0.1000	0.0059
##	9	0.6869	-nan	0.1000	-0.0005
##	10	0.6726	-nan	0.1000	-0.0219
##	20	0.5931	-nan	0.1000	-0.0142
##	40	0.5256	-nan	0.1000	-0.0112
##	60	0.4881	-nan	0.1000	-0.0095
##	80	0.4529	-nan	0.1000	-0.0136
##	100	0.4253	-nan	0.1000	-0.0056
##	120	0.4059	-nan	0.1000	-0.0126
##	140	0.3887	-nan	0.1000	-0.0086
##	150	0.3778	-nan	0.1000	-0.0121

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1628
##	2	0.9926	-nan	0.1000	0.1153
##	3	0.9005	-nan	0.1000	0.0607
##	4	0.8404	-nan	0.1000	0.0514
##	5	0.7931	-nan	0.1000	0.0323
##	6	0.7567	-nan	0.1000	0.0319
##	7	0.7215	-nan	0.1000	0.0089
##	8	0.6961	-nan	0.1000	0.0163
##	9	0.6750	-nan	0.1000	-0.0031

##	10	0.6581	-nan	0.1000	0.0112
##	20	0.5645	-nan	0.1000	-0.0177
##	40	0.4843	-nan	0.1000	-0.0087
##	60	0.4266	-nan	0.1000	-0.0071
##	80	0.3909	-nan	0.1000	-0.0158
##	100	0.3612	-nan	0.1000	-0.0089
##	120	0.3338	-nan	0.1000	-0.0042
##	140	0.3145	-nan	0.1000	-0.0173
##	150	0.3053	-nan	0.1000	-0.0137

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1614
##	2	0.9921	-nan	0.1000	0.1120
##	3	0.9105	-nan	0.1000	0.0686
##	4	0.8521	-nan	0.1000	0.0473
##	5	0.8086	-nan	0.1000	0.0333
##	6	0.7783	-nan	0.1000	0.0212
##	7	0.7553	-nan	0.1000	0.0149
##	8	0.7365	-nan	0.1000	0.0227
##	9	0.7176	-nan	0.1000	0.0144
##	10	0.7002	-nan	0.1000	0.0093
##	20	0.6303	-nan	0.1000	-0.0119
##	40	0.5949	-nan	0.1000	-0.0033
##	60	0.5771	-nan	0.1000	-0.0104
##	80	0.5581	-nan	0.1000	-0.0092
##	100	0.5432	-nan	0.1000	-0.0109
##	120	0.5313	-nan	0.1000	-0.0082
##	140	0.5200	-nan	0.1000	-0.0038
##	150	0.5191	-nan	0.1000	-0.0014

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1497
##	2	0.9925	-nan	0.1000	0.1053
##	3	0.9109	-nan	0.1000	0.0826
##	4	0.8500	-nan	0.1000	0.0445
##	5	0.8037	-nan	0.1000	0.0356
##	6	0.7674	-nan	0.1000	0.0186
##	7	0.7387	-nan	0.1000	0.0149
##	8	0.7140	-nan	0.1000	0.0066
##	9	0.6981	-nan	0.1000	-0.0013
##	10	0.6818	-nan	0.1000	0.0035
##	20	0.5951	-nan	0.1000	-0.0111
##	40	0.5275	-nan	0.1000	-0.0075
##	60	0.4933	-nan	0.1000	-0.0097
##	80	0.4644	-nan	0.1000	-0.0057
##	100	0.4392	-nan	0.1000	-0.0130
##	120	0.4168	-nan	0.1000	-0.0099
##	140	0.3996	-nan	0.1000	-0.0081
##	150	0.3923	-nan	0.1000	-0.0126

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
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##	1	1.0986	-nan	0.1000	0.1518
##	2	0.9798	-nan	0.1000	0.1050
##	3	0.9015	-nan	0.1000	0.0651
##	4	0.8396	-nan	0.1000	0.0481
##	5	0.7917	-nan	0.1000	0.0395
##	6	0.7547	-nan	0.1000	0.0174
##	7	0.7225	-nan	0.1000	0.0193
##	8	0.6975	-nan	0.1000	-0.0056
##	9	0.6820	-nan	0.1000	0.0119
##	10	0.6627	-nan	0.1000	0.0059
##	20	0.5637	-nan	0.1000	-0.0203
##	40	0.4759	-nan	0.1000	-0.0165
##	60	0.4327	-nan	0.1000	-0.0085
##	80	0.4027	-nan	0.1000	-0.0072
##	100	0.3735	-nan	0.1000	-0.0085
##	120	0.3506	-nan	0.1000	-0.0198
##	140	0.3323	-nan	0.1000	-0.0058
##	150	0.3233	-nan	0.1000	-0.0117

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1505
##	2	1.0090	-nan	0.1000	0.1039
##	3	0.9268	-nan	0.1000	0.0842
##	4	0.8634	-nan	0.1000	0.0560
##	5	0.8184	-nan	0.1000	0.0486
##	6	0.7825	-nan	0.1000	0.0214
##	7	0.7561	-nan	0.1000	0.0295
##	8	0.7318	-nan	0.1000	0.0084
##	9	0.7184	-nan	0.1000	0.0144
##	10	0.7031	-nan	0.1000	0.0095
##	20	0.6326	-nan	0.1000	-0.0108
##	40	0.5963	-nan	0.1000	-0.0039
##	60	0.5781	-nan	0.1000	-0.0084
##	80	0.5646	-nan	0.1000	-0.0082
##	100	0.5515	-nan	0.1000	-0.0094
##	120	0.5393	-nan	0.1000	-0.0085
##	140	0.5264	-nan	0.1000	-0.0103
##	150	0.5197	-nan	0.1000	-0.0096

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1588
##	2	0.9887	-nan	0.1000	0.0963
##	3	0.9140	-nan	0.1000	0.0731
##	4	0.8526	-nan	0.1000	0.0611
##	5	0.8007	-nan	0.1000	0.0442
##	6	0.7587	-nan	0.1000	0.0206
##	7	0.7309	-nan	0.1000	0.0115
##	8	0.7048	-nan	0.1000	0.0133
##	9	0.6886	-nan	0.1000	0.0123
##	10	0.6730	-nan	0.1000	-0.0003
##	20	0.5913	-nan	0.1000	-0.0062
##	40	0.5298	-nan	0.1000	-0.0100

##	60	0.4860	-nan	0.1000	-0.0118
##	80	0.4554	-nan	0.1000	-0.0114
##	100	0.4300	-nan	0.1000	-0.0112
##	120	0.4054	-nan	0.1000	-0.0051
##	140	0.3932	-nan	0.1000	-0.0050
##	150	0.3849	-nan	0.1000	-0.0049

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1559
##	2	0.9880	-nan	0.1000	0.1065
##	3	0.9114	-nan	0.1000	0.0847
##	4	0.8476	-nan	0.1000	0.0577
##	5	0.7982	-nan	0.1000	0.0422
##	6	0.7598	-nan	0.1000	0.0203
##	7	0.7271	-nan	0.1000	0.0160
##	8	0.7003	-nan	0.1000	0.0055
##	9	0.6797	-nan	0.1000	0.0020
##	10	0.6599	-nan	0.1000	0.0083
##	20	0.5633	-nan	0.1000	-0.0150
##	40	0.4814	-nan	0.1000	-0.0151
##	60	0.4269	-nan	0.1000	-0.0097
##	80	0.3886	-nan	0.1000	-0.0178
##	100	0.3579	-nan	0.1000	-0.0077
##	120	0.3372	-nan	0.1000	-0.0108
##	140	0.3226	-nan	0.1000	-0.0093
##	150	0.3146	-nan	0.1000	-0.0090

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1587
##	2	0.9976	-nan	0.1000	0.1175
##	3	0.9189	-nan	0.1000	0.0774
##	4	0.8628	-nan	0.1000	0.0461
##	5	0.8192	-nan	0.1000	0.0477
##	6	0.7828	-nan	0.1000	0.0353
##	7	0.7569	-nan	0.1000	0.0208
##	8	0.7320	-nan	0.1000	0.0202
##	9	0.7146	-nan	0.1000	0.0168
##	10	0.6980	-nan	0.1000	0.0120
##	20	0.6244	-nan	0.1000	-0.0037
##	40	0.5891	-nan	0.1000	-0.0050
##	60	0.5700	-nan	0.1000	-0.0079
##	80	0.5542	-nan	0.1000	-0.0073
##	100	0.5431	-nan	0.1000	-0.0147
##	120	0.5327	-nan	0.1000	-0.0038
##	140	0.5220	-nan	0.1000	-0.0133
##	150	0.5173	-nan	0.1000	-0.0048

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1658
##	2	0.9898	-nan	0.1000	0.1041
##	3	0.9052	-nan	0.1000	0.0767

##	4	0.8457	-nan	0.1000	0.0528
##	5	0.7973	-nan	0.1000	0.0366
##	6	0.7623	-nan	0.1000	0.0304
##	7	0.7313	-nan	0.1000	0.0036
##	8	0.7091	-nan	0.1000	0.0107
##	9	0.6873	-nan	0.1000	0.0079
##	10	0.6717	-nan	0.1000	0.0003
##	20	0.5846	-nan	0.1000	-0.0096
##	40	0.5307	-nan	0.1000	-0.0168
##	60	0.4958	-nan	0.1000	-0.0157
##	80	0.4663	-nan	0.1000	-0.0135
##	100	0.4427	-nan	0.1000	-0.0116
##	120	0.4157	-nan	0.1000	-0.0127
##	140	0.3999	-nan	0.1000	-0.0082
##	150	0.3932	-nan	0.1000	-0.0149

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1637
##	2	0.9813	-nan	0.1000	0.0978
##	3	0.9018	-nan	0.1000	0.0739
##	4	0.8416	-nan	0.1000	0.0553
##	5	0.7907	-nan	0.1000	0.0460
##	6	0.7506	-nan	0.1000	0.0208
##	7	0.7212	-nan	0.1000	0.0151
##	8	0.6965	-nan	0.1000	0.0060
##	9	0.6779	-nan	0.1000	0.0118
##	10	0.6601	-nan	0.1000	-0.0038
##	20	0.5659	-nan	0.1000	-0.0174
##	40	0.4799	-nan	0.1000	-0.0110
##	60	0.4359	-nan	0.1000	-0.0187
##	80	0.4020	-nan	0.1000	-0.0186
##	100	0.3740	-nan	0.1000	-0.0076
##	120	0.3510	-nan	0.1000	-0.0126
##	140	0.3336	-nan	0.1000	-0.0058
##	150	0.3245	-nan	0.1000	-0.0106

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1609
##	2	0.9840	-nan	0.1000	0.1112
##	3	0.9058	-nan	0.1000	0.0821
##	4	0.8440	-nan	0.1000	0.0651
##	5	0.7982	-nan	0.1000	0.0366
##	6	0.7675	-nan	0.1000	0.0293
##	7	0.7408	-nan	0.1000	0.0283
##	8	0.7171	-nan	0.1000	0.0222
##	9	0.6991	-nan	0.1000	0.0113
##	10	0.6848	-nan	0.1000	0.0087
##	20	0.6197	-nan	0.1000	-0.0036
##	40	0.5772	-nan	0.1000	-0.0206
##	60	0.5555	-nan	0.1000	-0.0053
##	80	0.5407	-nan	0.1000	-0.0015
##	100	0.5231	-nan	0.1000	-0.0091

##	120	0.5121	-nan	0.1000	-0.0126
##	140	0.4962	-nan	0.1000	-0.0005
##	150	0.4890	-nan	0.1000	-0.0039

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1602
##	2	0.9849	-nan	0.1000	0.1212
##	3	0.9052	-nan	0.1000	0.0767
##	4	0.8453	-nan	0.1000	0.0759
##	5	0.7947	-nan	0.1000	0.0504
##	6	0.7552	-nan	0.1000	0.0285
##	7	0.7252	-nan	0.1000	0.0085
##	8	0.7026	-nan	0.1000	0.0254
##	9	0.6812	-nan	0.1000	0.0129
##	10	0.6609	-nan	0.1000	0.0047
##	20	0.5770	-nan	0.1000	-0.0073
##	40	0.5168	-nan	0.1000	-0.0136
##	60	0.4652	-nan	0.1000	-0.0087
##	80	0.4346	-nan	0.1000	-0.0139
##	100	0.4059	-nan	0.1000	-0.0105
##	120	0.3848	-nan	0.1000	-0.0063
##	140	0.3681	-nan	0.1000	-0.0134
##	150	0.3578	-nan	0.1000	-0.0070

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1699
##	2	0.9825	-nan	0.1000	0.1349
##	3	0.8960	-nan	0.1000	0.0895
##	4	0.8306	-nan	0.1000	0.0534
##	5	0.7767	-nan	0.1000	0.0169
##	6	0.7424	-nan	0.1000	0.0341
##	7	0.7119	-nan	0.1000	0.0196
##	8	0.6862	-nan	0.1000	0.0147
##	9	0.6651	-nan	0.1000	0.0025
##	10	0.6473	-nan	0.1000	-0.0031
##	20	0.5454	-nan	0.1000	-0.0093
##	40	0.4557	-nan	0.1000	-0.0150
##	60	0.4032	-nan	0.1000	-0.0058
##	80	0.3655	-nan	0.1000	-0.0051
##	100	0.3367	-nan	0.1000	-0.0137
##	120	0.3166	-nan	0.1000	-0.0131
##	140	0.3001	-nan	0.1000	-0.0067
##	150	0.2954	-nan	0.1000	-0.0067

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1526
##	2	0.9992	-nan	0.1000	0.0969
##	3	0.9177	-nan	0.1000	0.0738
##	4	0.8622	-nan	0.1000	0.0575
##	5	0.8172	-nan	0.1000	0.0415
##	6	0.7801	-nan	0.1000	0.0384

##	7	0.7508	-nan	0.1000	0.0262
##	8	0.7286	-nan	0.1000	0.0032
##	9	0.7144	-nan	0.1000	0.0119
##	10	0.6972	-nan	0.1000	0.0069
##	20	0.6295	-nan	0.1000	-0.0045
##	40	0.5869	-nan	0.1000	-0.0036
##	60	0.5650	-nan	0.1000	-0.0052
##	80	0.5516	-nan	0.1000	-0.0075
##	100	0.5338	-nan	0.1000	0.0004
##	120	0.5178	-nan	0.1000	-0.0068
##	140	0.5113	-nan	0.1000	-0.0097
##	150	0.5050	-nan	0.1000	-0.0099

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1509
##	2	0.9839	-nan	0.1000	0.0999
##	3	0.9081	-nan	0.1000	0.0737
##	4	0.8467	-nan	0.1000	0.0489
##	5	0.8003	-nan	0.1000	0.0313
##	6	0.7690	-nan	0.1000	0.0237
##	7	0.7358	-nan	0.1000	0.0163
##	8	0.7083	-nan	0.1000	0.0102
##	9	0.6916	-nan	0.1000	0.0093
##	10	0.6736	-nan	0.1000	0.0011
##	20	0.5790	-nan	0.1000	-0.0094
##	40	0.5143	-nan	0.1000	-0.0113
##	60	0.4814	-nan	0.1000	-0.0074
##	80	0.4552	-nan	0.1000	-0.0071
##	100	0.4269	-nan	0.1000	-0.0057
##	120	0.4023	-nan	0.1000	-0.0079
##	140	0.3848	-nan	0.1000	-0.0087
##	150	0.3783	-nan	0.1000	-0.0085

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1515
##	2	0.9826	-nan	0.1000	0.1131
##	3	0.8936	-nan	0.1000	0.0765
##	4	0.8311	-nan	0.1000	0.0343
##	5	0.7847	-nan	0.1000	0.0308
##	6	0.7488	-nan	0.1000	0.0219
##	7	0.7205	-nan	0.1000	0.0240
##	8	0.6949	-nan	0.1000	0.0142
##	9	0.6750	-nan	0.1000	0.0039
##	10	0.6585	-nan	0.1000	0.0028
##	20	0.5599	-nan	0.1000	-0.0150
##	40	0.4709	-nan	0.1000	-0.0114
##	60	0.4177	-nan	0.1000	-0.0081
##	80	0.3802	-nan	0.1000	-0.0171
##	100	0.3534	-nan	0.1000	-0.0054
##	120	0.3293	-nan	0.1000	-0.0085
##	140	0.3143	-nan	0.1000	-0.0051
##	150	0.3068	-nan	0.1000	-0.0148

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1580
##	2	0.9820	-nan	0.1000	0.1112
##	3	0.9087	-nan	0.1000	0.0766
##	4	0.8578	-nan	0.1000	0.0588
##	5	0.8099	-nan	0.1000	0.0351
##	6	0.7718	-nan	0.1000	0.0162
##	7	0.7473	-nan	0.1000	0.0239
##	8	0.7242	-nan	0.1000	0.0121
##	9	0.7085	-nan	0.1000	0.0078
##	10	0.6955	-nan	0.1000	0.0088
##	20	0.6206	-nan	0.1000	-0.0049
##	40	0.5860	-nan	0.1000	-0.0055
##	60	0.5691	-nan	0.1000	-0.0046
##	80	0.5506	-nan	0.1000	-0.0053
##	100	0.5360	-nan	0.1000	-0.0051
##	120	0.5209	-nan	0.1000	-0.0081
##	140	0.5082	-nan	0.1000	-0.0050
##	150	0.5037	-nan	0.1000	-0.0060

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1483
##	2	0.9862	-nan	0.1000	0.0999
##	3	0.9026	-nan	0.1000	0.0714
##	4	0.8466	-nan	0.1000	0.0412
##	5	0.7964	-nan	0.1000	0.0395
##	6	0.7572	-nan	0.1000	0.0357
##	7	0.7283	-nan	0.1000	0.0237
##	8	0.7033	-nan	0.1000	0.0128
##	9	0.6852	-nan	0.1000	0.0068
##	10	0.6702	-nan	0.1000	0.0057
##	20	0.5813	-nan	0.1000	-0.0144
##	40	0.5186	-nan	0.1000	-0.0077
##	60	0.4820	-nan	0.1000	-0.0168
##	80	0.4467	-nan	0.1000	-0.0134
##	100	0.4225	-nan	0.1000	-0.0078
##	120	0.4068	-nan	0.1000	-0.0118
##	140	0.3933	-nan	0.1000	-0.0100
##	150	0.3852	-nan	0.1000	-0.0131

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1598
##	2	0.9839	-nan	0.1000	0.0992
##	3	0.8947	-nan	0.1000	0.0766
##	4	0.8321	-nan	0.1000	0.0514
##	5	0.7844	-nan	0.1000	0.0447
##	6	0.7463	-nan	0.1000	0.0315
##	7	0.7103	-nan	0.1000	0.0145
##	8	0.6832	-nan	0.1000	0.0047
##	9	0.6641	-nan	0.1000	0.0086

##	10	0.6475	-nan	0.1000	0.0077
##	20	0.5556	-nan	0.1000	-0.0163
##	40	0.4775	-nan	0.1000	-0.0122
##	60	0.4265	-nan	0.1000	-0.0187
##	80	0.3926	-nan	0.1000	-0.0122
##	100	0.3616	-nan	0.1000	-0.0118
##	120	0.3433	-nan	0.1000	-0.0091
##	140	0.3238	-nan	0.1000	-0.0046
##	150	0.3148	-nan	0.1000	-0.0077

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1587
##	2	0.9936	-nan	0.1000	0.1121
##	3	0.9176	-nan	0.1000	0.0771
##	4	0.8632	-nan	0.1000	0.0582
##	5	0.8206	-nan	0.1000	0.0496
##	6	0.7846	-nan	0.1000	0.0301
##	7	0.7542	-nan	0.1000	0.0196
##	8	0.7308	-nan	0.1000	0.0185
##	9	0.7136	-nan	0.1000	0.0102
##	10	0.6975	-nan	0.1000	0.0099
##	20	0.6382	-nan	0.1000	0.0011
##	40	0.6006	-nan	0.1000	-0.0217
##	60	0.5802	-nan	0.1000	-0.0112
##	80	0.5663	-nan	0.1000	-0.0059
##	100	0.5523	-nan	0.1000	-0.0043
##	120	0.5408	-nan	0.1000	-0.0155
##	140	0.5315	-nan	0.1000	-0.0096
##	150	0.5280	-nan	0.1000	-0.0063

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
##	1	1.0986	-nan	0.1000	0.1548
##	2	0.9912	-nan	0.1000	0.1143
##	3	0.9173	-nan	0.1000	0.0859
##	4	0.8561	-nan	0.1000	0.0536
##	5	0.8092	-nan	0.1000	0.0475
##	6	0.7696	-nan	0.1000	0.0257
##	7	0.7411	-nan	0.1000	0.0136
##	8	0.7195	-nan	0.1000	0.0114
##	9	0.7021	-nan	0.1000	0.0080
##	10	0.6857	-nan	0.1000	0.0061
##	20	0.6003	-nan	0.1000	-0.0109
##	40	0.5390	-nan	0.1000	-0.0075
##	60	0.5026	-nan	0.1000	-0.0198
##	80	0.4661	-nan	0.1000	-0.0064
##	100	0.4432	-nan	0.1000	-0.0082
##	120	0.4242	-nan	0.1000	-0.0076
##	140	0.4053	-nan	0.1000	-0.0234
##	150	0.3975	-nan	0.1000	-0.0095

Warning: Setting row names on a tibble is deprecated.

##	Iter	TrainDeviance	ValidDeviance	StepSize	Improve
----	------	---------------	---------------	----------	---------

```
##      1      1.0986      -nan      0.1000      0.1614
##      2      0.9866      -nan      0.1000      0.0866
##      3      0.9023      -nan      0.1000      0.0846
##      4      0.8432      -nan      0.1000      0.0605
##      5      0.7910      -nan      0.1000      0.0373
##      6      0.7574      -nan      0.1000      0.0312
##      7      0.7231      -nan      0.1000      0.0150
##      8      0.6998      -nan      0.1000      0.0093
##      9      0.6790      -nan      0.1000      0.0102
##     10      0.6611      -nan      0.1000      0.0097
##     20      0.5669      -nan      0.1000     -0.0017
##     40      0.4915      -nan      0.1000     -0.0099
##     60      0.4364      -nan      0.1000     -0.0110
##     80      0.3980      -nan      0.1000     -0.0131
##    100      0.3672      -nan      0.1000     -0.0075
##    120      0.3466      -nan      0.1000     -0.0109
##    140      0.3273      -nan      0.1000     -0.0115
##    150      0.3199      -nan      0.1000     -0.0059
```

```
## Warning: Setting row names on a tibble is deprecated.
```

```
## Iter   TrainDeviance   ValidDeviance   StepSize   Improve
##      1      1.0986      -nan      0.1000      0.1637
##      2      0.9978      -nan      0.1000      0.1184
##      3      0.9158      -nan      0.1000      0.0801
##      4      0.8561      -nan      0.1000      0.0597
##      5      0.8136      -nan      0.1000      0.0434
##      6      0.7795      -nan      0.1000      0.0309
##      7      0.7527      -nan      0.1000      0.0241
##      8      0.7312      -nan      0.1000      0.0159
##      9      0.7124      -nan      0.1000      0.0078
##     10      0.6999      -nan      0.1000      0.0092
##     20      0.6327      -nan      0.1000      0.0004
##     40      0.5973      -nan      0.1000     -0.0035
##     50      0.5892      -nan      0.1000     -0.0059
```

```
## gbm variable importance
```

```
##
##           Overall
## Intelligence 100.00
## Speed       89.32
## Durability  63.61
## Power       42.85
## Strength    30.87
## Combat      0.00
```

```
## Warning in write.csv2(CS2, "pythonDS.csv", sep = ","): attempt to set 'sep'
## ignored
```