R Notebook

Code

This is an R Markdown (http://rmarkdown.rstudio.com) Notebook. When you execute code within the notebook, the results appear beneath the code.

Try executing this chunk by clicking the *Run* button within the chunk or by placing your cursor inside it and pressing *Cmd+Shift+Enter*.

Hide

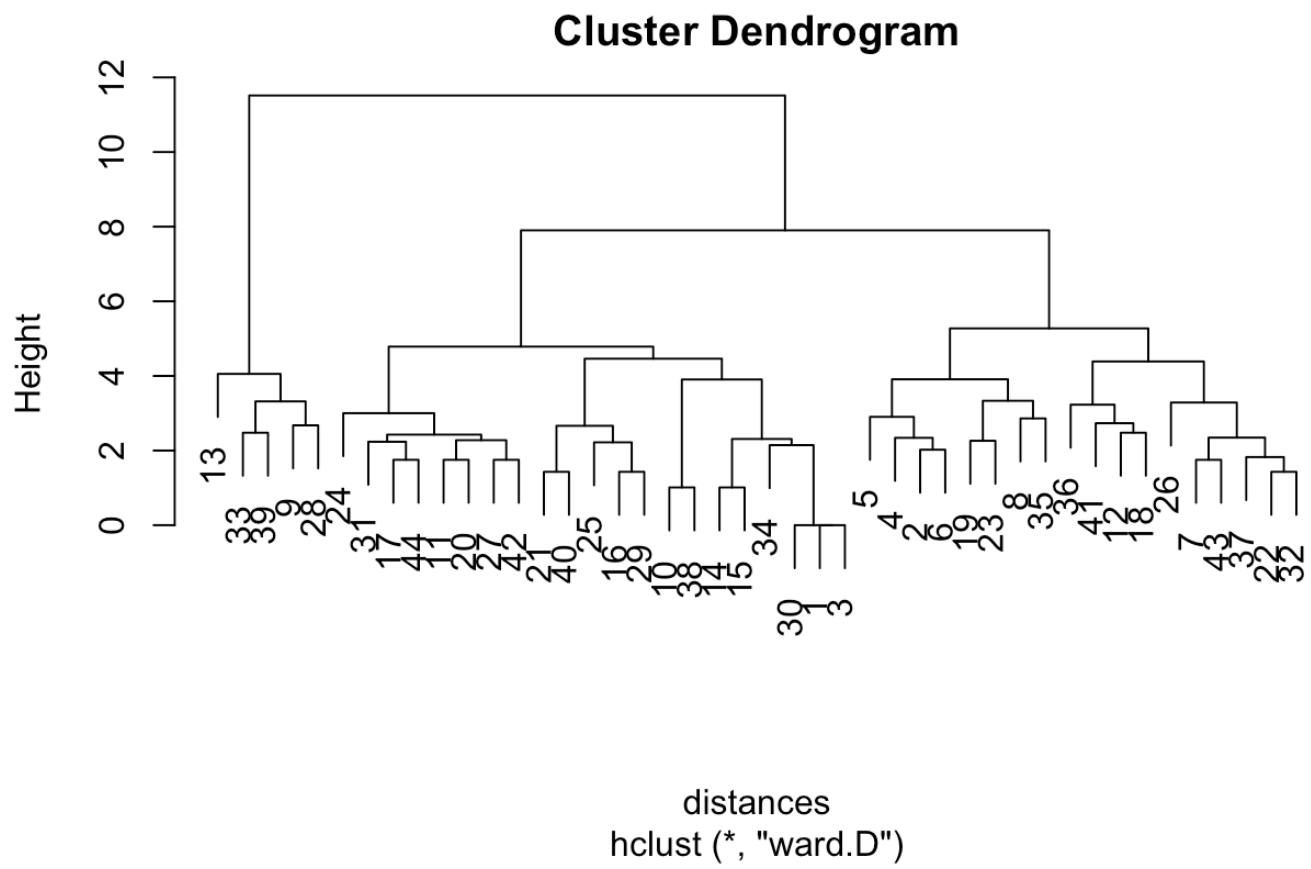
```
makes = read.csv("makematrix_binary.csv", header = TRUE)
makes = read.csv("makematrix_binary.csv", header = TRUE)
str(makes)
```

```
'data.frame':   44 obs. of  45 variables:
 $ MakeName     : Factor w/ 44 levels "","Acura","Alfa Romeo",..: 30 28 32 10 35 2 31 15
16 39 ...
 $ McLaren      : int  1 0 1 0 1 1 1 1 0 1 ...
 $ Maserati     : int  0 1 0 0 0 0 0 0 1 0 ...
 $ MINI         : int  1 0 1 0 0 0 0 0 1 1 ...
 $ Chevrolet    : int  0 1 0 1 1 0 0 0 1 0 ...
 $ Porsche      : int  0 1 0 0 1 0 0 0 1 0 ...
 $ Acura        : int  0 1 0 1 1 1 1 1 1 0 ...
 $ Mercedes.Benz: int  0 0 0 0 0 0 1 0 0 0 ...
 $ Ford         : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Genesis      : int  0 0 0 0 0 0 0 0 1 0 ...
 $ Smart        : int  0 0 0 0 0 0 0 0 1 1 ...
 $ Dodge        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Scion        : int  0 0 0 0 0 0 0 0 1 0 ...
 $ Rolls.Royce  : int  0 0 0 0 0 0 0 1 1 0 ...
 $ Cadillac     : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Honda        : int  1 1 1 0 1 1 1 1 0 1 ...
 $ Hyundai      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Volkswagen   : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Mazda        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Jeep         : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Infiniti     : int  0 0 0 0 0 0 0 0 0 0 ...
 $ LandRover    : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Kia          : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Mitsubishi   : int  0 0 0 0 0 0 0 0 0 0 ...
 $ BMW          : int  0 0 0 0 0 0 0 0 0 0 ...
 $ FIAT         : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lincoln      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lamborghini  : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Jaguar       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ GMC          : int  0 0 0 0 1 0 0 1 1 0 ...
 $ Toyota       : int  1 0 1 1 0 0 1 0 0 0 ...
 $ Nissan       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ AstonMartin  : int  0 1 0 1 1 1 0 0 1 0 ...
 $ Volvo        : int  0 0 0 0 1 0 0 0 1 0 ...
 $ Ferrari      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Chrysler     : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Bentley      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Tesla        : int  0 0 0 0 1 0 0 0 0 0 ...
 $ Ram          : int  0 0 0 0 0 0 0 0 0 1 ...
 $ AlfaRomeo    : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Subaru       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Buick        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lexus        : int  0 0 0 1 0 0 0 0 0 0 ...
 $ Audi         : int  0 0 0 0 1 0 1 0 0 0 ...
 $ X            : int  0 0 0 0 0 0 0 0 0 0 ...
```

Hide

```
str(makes)
```

```
'data.frame':   44 obs. of  45 variables:
 $ MakeName     : Factor w/ 44 levels "","Acura","Alfa Romeo",..: 30 28 32 10 35 2 31 15
16 39 ...
 $ McLaren      : int  1 0 1 0 1 1 1 1 0 1 ...
 $ Maserati     : int  0 1 0 0 0 0 0 0 1 0 ...
 $ MINI         : int  1 0 1 0 0 0 0 0 1 1 ...
 $ Chevrolet    : int  0 1 0 1 1 0 0 0 1 0 ...
 $ Porsche      : int  0 1 0 0 1 0 0 0 1 0 ...
 $ Acura        : int  0 1 0 1 1 1 1 1 1 0 ...
 $ Mercedes.Benz: int  0 0 0 0 0 0 1 0 0 0 ...
 $ Ford         : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Genesis      : int  0 0 0 0 0 0 0 0 1 0 ...
 $ Smart        : int  0 0 0 0 0 0 0 0 1 1 ...
 $ Dodge        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Scion        : int  0 0 0 0 0 0 0 0 1 0 ...
 $ Rolls.Royce  : int  0 0 0 0 0 0 0 1 1 0 ...
 $ Cadillac     : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Honda        : int  1 1 1 0 1 1 1 1 0 1 ...
 $ Hyundai      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Volkswagen   : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Mazda        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Jeep         : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Infiniti     : int  0 0 0 0 0 0 0 0 0 0 ...
 $ LandRover    : int  0 0 0 0 0 0 0 1 0 0 ...
 $ Kia          : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Mitsubishi   : int  0 0 0 0 0 0 0 0 0 0 ...
 $ BMW          : int  0 0 0 0 0 0 0 0 0 0 ...
 $ FIAT         : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lincoln      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lamborghini  : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Jaguar       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ GMC          : int  0 0 0 0 1 0 0 1 1 0 ...
 $ Toyota       : int  1 0 1 1 0 0 1 0 0 0 ...
 $ Nissan       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ AstonMartin  : int  0 1 0 1 1 1 0 0 1 0 ...
 $ Volvo        : int  0 0 0 0 1 0 0 0 1 0 ...
 $ Ferrari      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Chrysler     : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Bentley      : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Tesla        : int  0 0 0 0 1 0 0 0 0 0 ...
 $ Ram          : int  0 0 0 0 0 0 0 0 0 1 ...
 $ AlfaRomeo    : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Subaru       : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Buick        : int  0 0 0 0 0 0 0 0 0 0 ...
 $ Lexus        : int  0 0 0 1 0 0 0 0 0 0 ...
 $ Audi         : int  0 0 0 0 1 0 1 0 0 0 ...
 $ X            : int  0 0 0 0 0 0 0 0 0 0 ...
```



Hide

```
tapply(makes$BMW, clusterGroups, mean)
```

```
    1     2     3     4     5     6     7     8     9    10    11
0.000 0.000 0.000 0.000 0.000 0.000 0.125 0.000 0.000 0.000 0.000
```

	MakeName <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Acura <int>	Mercedes.Benz <int>	Ford <int>
2	Maserati	0	1	0	1	1	1	0	0
4	Chevrolet	0	0	0	1	0	1	0	0
5	Porsche	1	0	0	1	1	1	0	0
6	Acura	1	0	0	0	0	1	0	0

4 rows | 1-10 of 45 columns

	MakeNa... <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Acura <int>	Mercedes.Benz <int>	Ford <int>
1	McLaren	1	0	1	0	0	0	0	0
3	MINI	1	0	1	0	0	0	0	0
14	Cadillac	1	0	1	0	0	1	0	0

	MakeNa... <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Acura <int>	Mercedes.Benz <int>	Ford <int>
15	Honda	1	0	1	0	0	1	0	0
30	Toyota	1	0	1	0	0	0	0	0
34	Ferrari	1	0	1	0	0	0	0	0

6 rows | 1-10 of 45 columns

	MakeName <fctr>	McLar... <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
11	Dodge	1	0	1	0	0	0	0	0
17	Volkswagen	0	0	1	0	0	0	0	0
20	Infiniti	1	0	1	0	0	0	0	0
24	BMW	1	1	1	0	0	0	0	1
27	Lamborghini	1	0	0	0	0	0	0	0
31	Nissan	1	0	0	0	0	0	1	0
42	Lexus	1	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0

8 rows | 1-10 of 45 columns

	MakeName <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
16	Hyundai	1	0	1	0	0	0	0	0
21	Land Rover	1	0	0	0	1	0	0	0
25	FIAT	1	0	1	0	0	0	0	0
29	GMC	1	0	1	0	1	0	0	0
40	Subaru	1	0	0	0	0	0	0	0

5 rows | 1-10 of 45 columns

	MakeName <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
9	Genesis	0	1	1	1	1	1	0	0
28	Jaguar	0	1	1	1	1	1	0	1
33	Volvo	1	1	1	1	1	1	0	0
39	Alfa Romeo	1	1	1	1	1	1	0	1

4 rows | 1-10 of 45 columns

	MakeName <fctr>	McLa... <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
7	Mercedes-Benz	1	0	0	0	0	1	1	0
22	Kia	1	0	1	0	0	1	0	0
26	Lincoln	1	1	1	1	0	1	1	0
32	Aston Martin	1	0	1	0	0	1	0	0
37	Tesla	1	0	1	1	0	1	0	0
43	Audi	1	0	1	0	0	1	1	0

6 rows | 1-10 of 45 columns

	MakeNa... <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Acura <int>	Mercedes.Benz <int>	Ford <int>
12	Scion	1	0	1	0	0	1	0	0
18	Mazda	1	0	1	0	0	1	0	0
36	Bentley	1	1	1	0	1	1	0	0
41	Buick	0	0	1	0	0	1	1	0

4 rows | 1-10 of 45 columns

	MakeName <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
19	Jeep	0	0	0	0	0	1	0	0
23	Mitsubishi	0	0	0	0	0	0	0	0

2 rows | 1-10 of 45 columns

	MakeNa... <fctr>	McLaren <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Acura <int>	Mercedes.Benz <int>	Ford <int>
12	Scion	1	0	1	0	0	1	0	0
18	Mazda	1	0	1	0	0	1	0	0
36	Bentley	1	1	1	0	1	1	0	0
41	Buick	0	0	1	0	0	1	1	0

4 rows | 1-10 of 45 columns

	MakeName <fctr>	McLa... <int>	Maserati <int>	M... <int>	Chevrolet <int>	Porsche <int>	Ac... <int>	Mercedes.Benz <int>	F... <int>
7	Mercedes-Benz	1	0	0	0	0	1	1	0

MakeName <fctr>	McLa… <int>	Maserati <int>	M… <int>	Chevrolet <int>	Porsche <int>	Ac… <int>	Mercedes.Benz <int>	F… <int>
22 Kia	1	0	1	0	0	1	0	0
26 Lincoln	1	1	1	1	0	1	1	0
32 Aston Martin	1	0	1	0	0	1	0	0
37 Tesla	1	0	1	1	0	1	0	0
43 Audi	1	0	1	0	0	1	1	0

6 rows | 1-10 of 45 columns

MakeName <fctr>	McLar… <int>	Maserati <int>	M… <int>	Chevrolet <int>	Porsche <int>	Ac… <int>	Mercedes.Benz <int>	F… <int>
11 Dodge	1	0	1	0	0	0	0	0
17 Volkswagen	0	0	1	0	0	0	0	0
20 Infiniti	1	0	1	0	0	0	0	0
24 BMW	1	1	1	0	0	0	0	1
27 Lamborghini	1	0	0	0	0	0	0	0
31 Nissan	1	0	0	0	0	0	1	0

6 rows | 1-10 of 45 columns

Add a new chunk by clicking the *Insert Chunk* button on the toolbar or by pressing *Cmd+Option+I*.

When you save the notebook, an HTML file containing the code and output will be saved alongside it (click the *Preview* button or press *Cmd+Shift+K* to preview the HTML file).