

22bce0476assignment22.R

Batch1

2024-08-22

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.2.3
```

```
#1. Load the dataset into the R environment (read.csv  
datasets<-read.csv("C:/Users/batch1/Downloads/data(1) (1).csv")  
print(datasets)
```

##	symboling	normalized.losses	make	fuel.type	aspiration	num.of.doors
## 1	3	?	alfa-romero	gas	std	two
## 2	3	?	alfa-romero	gas	std	two
## 3	1	?	alfa-romero	gas	std	two
## 4	2	164	audi	gas	std	four
## 5	2	164	audi	gas	std	four
## 6	2	?	audi	gas	std	two
## 7	1	158	audi	gas	std	four
## 8	1	?	audi	gas	std	four
## 9	1	158	audi	gas	turbo	four
## 10	0	?	audi	gas	turbo	two
## 11	2	192	bmw	gas	std	two
## 12	0	192	bmw	gas	std	four
## 13	0	188	bmw	gas	std	two
## 14	0	188	bmw	gas	std	four
## 15	1	?	bmw	gas	std	four
## 16	0	?	bmw	gas	std	four
## 17	0	?	bmw	gas	std	two
## 18	0	?	bmw	gas	std	four
## 19	2	121	chevrolet	gas	std	two
## 20	1	98	chevrolet	gas	std	two
## 21	0	81	chevrolet	gas	std	four
## 22	1	118	dodge	gas	std	two
## 23	1	118	dodge	gas	std	two
## 24	1	118	dodge	gas	turbo	two
## 25	1	148	dodge	gas	std	four
## 26	1	148	dodge	gas	std	four
## 27	1	148	dodge	gas	std	four
## 28	1	148	dodge	gas	turbo	?
## 29	-1	110	dodge	gas	std	four
## 30	3	145	dodge	gas	turbo	two
## 31	2	137	honda	gas	std	two
## 32	2	137	honda	gas	std	two
## 33	1	101	honda	gas	std	two
## 34	1	101	honda	gas	std	two
## 35	1	101	honda	gas	std	two
## 36	0	110	honda	gas	std	four
## 37	0	78	honda	gas	std	four
## 38	0	106	honda	gas	std	two
## 39	0	106	honda	gas	std	two
## 40	0	85	honda	gas	std	four
## 41	0	85	honda	gas	std	four
## 42	0	85	honda	gas	std	four
## 43	1	107	honda	gas	std	two
## 44	0	?	isuzu	gas	std	four
## 45	1	?	isuzu	gas	std	two
## 46	0	?	isuzu	gas	std	four
## 47	2	?	isuzu	gas	std	two
## 48	0	145	jaguar	gas	std	four
## 49	0	?	jaguar	gas	std	four
## 50	0	?	jaguar	gas	std	two

## 51	1	104	mazda	gas	std	two
## 52	1	104	mazda	gas	std	two
## 53	1	104	mazda	gas	std	two
## 54	1	113	mazda	gas	std	four
## 55	1	113	mazda	gas	std	four
## 56	3	150	mazda	gas	std	two
## 57	3	150	mazda	gas	std	two
## 58	3	150	mazda	gas	std	two
## 59	3	150	mazda	gas	std	two
## 60	1	129	mazda	gas	std	two
## 61	0	115	mazda	gas	std	four
## 62	1	129	mazda	gas	std	two
## 63	0	115	mazda	gas	std	four
## 64	0	?	mazda	diesel	std	?
## 65	0	115	mazda	gas	std	four
## 66	0	118	mazda	gas	std	four
## 67	0	?	mazda	diesel	std	four
## 68	-1	93	mercedes-benz	diesel	turbo	four
## 69	-1	93	mercedes-benz	diesel	turbo	four
## 70	0	93	mercedes-benz	diesel	turbo	two
## 71	-1	93	mercedes-benz	diesel	turbo	four
## 72	-1	?	mercedes-benz	gas	std	four
## 73	3	142	mercedes-benz	gas	std	two
## 74	0	?	mercedes-benz	gas	std	four
## 75	1	?	mercedes-benz	gas	std	two
## 76	1	?	mercury	gas	turbo	two
## 77	2	161	mitsubishi	gas	std	two
## 78	2	161	mitsubishi	gas	std	two
## 79	2	161	mitsubishi	gas	std	two
## 80	1	161	mitsubishi	gas	turbo	two
## 81	3	153	mitsubishi	gas	turbo	two
## 82	3	153	mitsubishi	gas	std	two
## 83	3	?	mitsubishi	gas	turbo	two
## 84	3	?	mitsubishi	gas	turbo	two
## 85	3	?	mitsubishi	gas	turbo	two
## 86	1	125	mitsubishi	gas	std	four
## 87	1	125	mitsubishi	gas	std	four
## 88	1	125	mitsubishi	gas	turbo	four
## 89	-1	137	mitsubishi	gas	std	four
## 90	1	128	nissan	gas	std	two
## 91	1	128	nissan	diesel	std	two
## 92	1	128	nissan	gas	std	two
## 93	1	122	nissan	gas	std	four
## 94	1	103	nissan	gas	std	four
## 95	1	128	nissan	gas	std	two
## 96	1	128	nissan	gas	std	two
## 97	1	122	nissan	gas	std	four
## 98	1	103	nissan	gas	std	four
## 99	2	168	nissan	gas	std	two
## 100	0	106	nissan	gas	std	four
## 101	0	106	nissan	gas	std	four

## 102	0	128	nissan	gas	std	four
## 103	0	108	nissan	gas	std	four
## 104	0	108	nissan	gas	std	four
## 105	3	194	nissan	gas	std	two
## 106	3	194	nissan	gas	turbo	two
## 107	1	231	nissan	gas	std	two
## 108	0	161	peugot	gas	std	four
## 109	0	161	peugot	diesel	turbo	four
## 110	0	?	peugot	gas	std	four
## 111	0	?	peugot	diesel	turbo	four
## 112	0	161	peugot	gas	std	four
## 113	0	161	peugot	diesel	turbo	four
## 114	0	?	peugot	gas	std	four
## 115	0	?	peugot	diesel	turbo	four
## 116	0	161	peugot	gas	std	four
## 117	0	161	peugot	diesel	turbo	four
## 118	0	161	peugot	gas	turbo	four
## 119	1	119	plymouth	gas	std	two
## 120	1	119	plymouth	gas	turbo	two
## 121	1	154	plymouth	gas	std	four
## 122	1	154	plymouth	gas	std	four
## 123	1	154	plymouth	gas	std	four
## 124	-1	74	plymouth	gas	std	four
## 125	3	?	plymouth	gas	turbo	two
## 126	3	186	porsche	gas	std	two
## 127	3	?	porsche	gas	std	two
## 128	3	?	porsche	gas	std	two
## 129	3	?	porsche	gas	std	two
## 130	1	?	porsche	gas	std	two
## 131	0	?	renault	gas	std	four
## 132	2	?	renault	gas	std	two
## 133	3	150	saab	gas	std	two
## 134	2	104	saab	gas	std	four
## 135	3	150	saab	gas	std	two
## 136	2	104	saab	gas	std	four
## 137	3	150	saab	gas	turbo	two
## 138	2	104	saab	gas	turbo	four
## 139	2	83	subaru	gas	std	two
## 140	2	83	subaru	gas	std	two
## 141	2	83	subaru	gas	std	two
## 142	0	102	subaru	gas	std	four
## 143	0	102	subaru	gas	std	four
## 144	0	102	subaru	gas	std	four
## 145	0	102	subaru	gas	std	four
## 146	0	102	subaru	gas	turbo	four
## 147	0	89	subaru	gas	std	four
## 148	0	89	subaru	gas	std	four
## 149	0	85	subaru	gas	std	four
## 150	0	85	subaru	gas	turbo	four
## 151	1	87	toyota	gas	std	two
## 152	1	87	toyota	gas	std	two

## 153	1	74	toyota	gas	std	four
## 154	0	77	toyota	gas	std	four
## 155	0	81	toyota	gas	std	four
## 156	0	91	toyota	gas	std	four
## 157	0	91	toyota	gas	std	four
## 158	0	91	toyota	gas	std	four
## 159	0	91	toyota	diesel	std	four
## 160	0	91	toyota	diesel	std	four
## 161	0	91	toyota	gas	std	four
## 162	0	91	toyota	gas	std	four
## 163	0	91	toyota	gas	std	four
## 164	1	168	toyota	gas	std	two
## 165	1	168	toyota	gas	std	two
## 166	1	168	toyota	gas	std	two
## 167	1	168	toyota	gas	std	two
## 168	2	134	toyota	gas	std	two
## 169	2	134	toyota	gas	std	two
## 170	2	134	toyota	gas	std	two
## 171	2	134	toyota	gas	std	two
## 172	2	134	toyota	gas	std	two
## 173	2	134	toyota	gas	std	two
## 174	-1	65	toyota	gas	std	four
## 175	-1	65	toyota	diesel	turbo	four
## 176	-1	65	toyota	gas	std	four
## 177	-1	65	toyota	gas	std	four
## 178	-1	65	toyota	gas	std	four
## 179	3	197	toyota	gas	std	two
## 180	3	197	toyota	gas	std	two
## 181	-1	90	toyota	gas	std	four
## 182	-1	?	toyota	gas	std	four
## 183	2	122	volkswagen	diesel	std	two
## 184	2	122	volkswagen	gas	std	two
## 185	2	94	volkswagen	diesel	std	four
## 186	2	94	volkswagen	gas	std	four
## 187	2	94	volkswagen	gas	std	four
## 188	2	94	volkswagen	diesel	turbo	four
## 189	2	94	volkswagen	gas	std	four
## 190	3	?	volkswagen	gas	std	two
## 191	3	256	volkswagen	gas	std	two
## 192	0	?	volkswagen	gas	std	four
## 193	0	?	volkswagen	diesel	turbo	four
## 194	0	?	volkswagen	gas	std	four
## 195	-2	103	volvo	gas	std	four
## 196	-1	74	volvo	gas	std	four
## 197	-2	103	volvo	gas	std	four
## 198	-1	74	volvo	gas	std	four
## 199	-2	103	volvo	gas	turbo	four
## 200	-1	74	volvo	gas	turbo	four
## 201	-1	95	volvo	gas	std	four
## 202	-1	95	volvo	gas	turbo	four
## 203	-1	95	volvo	gas	std	four

## 204	-1	95	volvo	diesel	turbo	four	
## 205	-1	95	volvo	gas	turbo	four	
##	body.style	drive.wheels	engine.location	wheel.base	length	width	height
## 1	convertible	rwd	front	88.6	168.8	64.1	48.8
## 2	convertible	rwd	front	88.6	168.8	64.1	48.8
## 3	hatchback	rwd	front	94.5	171.2	65.5	52.4
## 4	sedan	fwd	front	99.8	176.6	66.2	54.3
## 5	sedan	4wd	front	99.4	176.6	66.4	54.3
## 6	sedan	fwd	front	99.8	177.3	66.3	53.1
## 7	sedan	fwd	front	105.8	192.7	71.4	55.7
## 8	wagon	fwd	front	105.8	192.7	71.4	55.7
## 9	sedan	fwd	front	105.8	192.7	71.4	55.9
## 10	hatchback	4wd	front	99.5	178.2	67.9	52.0
## 11	sedan	rwd	front	101.2	176.8	64.8	54.3
## 12	sedan	rwd	front	101.2	176.8	64.8	54.3
## 13	sedan	rwd	front	101.2	176.8	64.8	54.3
## 14	sedan	rwd	front	101.2	176.8	64.8	54.3
## 15	sedan	rwd	front	103.5	189.0	66.9	55.7
## 16	sedan	rwd	front	103.5	189.0	66.9	55.7
## 17	sedan	rwd	front	103.5	193.8	67.9	53.7
## 18	sedan	rwd	front	110.0	197.0	70.9	56.3
## 19	hatchback	fwd	front	88.4	141.1	60.3	53.2
## 20	hatchback	fwd	front	94.5	155.9	63.6	52.0
## 21	sedan	fwd	front	94.5	158.8	63.6	52.0
## 22	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 23	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 24	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 25	hatchback	fwd	front	93.7	157.3	63.8	50.6
## 26	sedan	fwd	front	93.7	157.3	63.8	50.6
## 27	sedan	fwd	front	93.7	157.3	63.8	50.6
## 28	sedan	fwd	front	93.7	157.3	63.8	50.6
## 29	wagon	fwd	front	103.3	174.6	64.6	59.8
## 30	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 31	hatchback	fwd	front	86.6	144.6	63.9	50.8
## 32	hatchback	fwd	front	86.6	144.6	63.9	50.8
## 33	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 34	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 35	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 36	sedan	fwd	front	96.5	163.4	64.0	54.5
## 37	wagon	fwd	front	96.5	157.1	63.9	58.3
## 38	hatchback	fwd	front	96.5	167.5	65.2	53.3
## 39	hatchback	fwd	front	96.5	167.5	65.2	53.3
## 40	sedan	fwd	front	96.5	175.4	65.2	54.1
## 41	sedan	fwd	front	96.5	175.4	62.5	54.1
## 42	sedan	fwd	front	96.5	175.4	65.2	54.1
## 43	sedan	fwd	front	96.5	169.1	66.0	51.0
## 44	sedan	rwd	front	94.3	170.7	61.8	53.5
## 45	sedan	fwd	front	94.5	155.9	63.6	52.0
## 46	sedan	fwd	front	94.5	155.9	63.6	52.0
## 47	hatchback	rwd	front	96.0	172.6	65.2	51.4
## 48	sedan	rwd	front	113.0	199.6	69.6	52.8

## 49	sedan	rwd	front	113.0	199.6	69.6	52.8
## 50	sedan	rwd	front	102.0	191.7	70.6	47.8
## 51	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 52	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 53	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 54	sedan	fwd	front	93.1	166.8	64.2	54.1
## 55	sedan	fwd	front	93.1	166.8	64.2	54.1
## 56	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 57	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 58	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 59	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 60	hatchback	fwd	front	98.8	177.8	66.5	53.7
## 61	sedan	fwd	front	98.8	177.8	66.5	55.5
## 62	hatchback	fwd	front	98.8	177.8	66.5	53.7
## 63	sedan	fwd	front	98.8	177.8	66.5	55.5
## 64	sedan	fwd	front	98.8	177.8	66.5	55.5
## 65	hatchback	fwd	front	98.8	177.8	66.5	55.5
## 66	sedan	rwd	front	104.9	175.0	66.1	54.4
## 67	sedan	rwd	front	104.9	175.0	66.1	54.4
## 68	sedan	rwd	front	110.0	190.9	70.3	56.5
## 69	wagon	rwd	front	110.0	190.9	70.3	58.7
## 70	hardtop	rwd	front	106.7	187.5	70.3	54.9
## 71	sedan	rwd	front	115.6	202.6	71.7	56.3
## 72	sedan	rwd	front	115.6	202.6	71.7	56.5
## 73	convertible	rwd	front	96.6	180.3	70.5	50.8
## 74	sedan	rwd	front	120.9	208.1	71.7	56.7
## 75	hardtop	rwd	front	112.0	199.2	72.0	55.4
## 76	hatchback	rwd	front	102.7	178.4	68.0	54.8
## 77	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 78	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 79	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 80	hatchback	fwd	front	93.0	157.3	63.8	50.8
## 81	hatchback	fwd	front	96.3	173.0	65.4	49.4
## 82	hatchback	fwd	front	96.3	173.0	65.4	49.4
## 83	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 84	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 85	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 86	sedan	fwd	front	96.3	172.4	65.4	51.6
## 87	sedan	fwd	front	96.3	172.4	65.4	51.6
## 88	sedan	fwd	front	96.3	172.4	65.4	51.6
## 89	sedan	fwd	front	96.3	172.4	65.4	51.6
## 90	sedan	fwd	front	94.5	165.3	63.8	54.5
## 91	sedan	fwd	front	94.5	165.3	63.8	54.5
## 92	sedan	fwd	front	94.5	165.3	63.8	54.5
## 93	sedan	fwd	front	94.5	165.3	63.8	54.5
## 94	wagon	fwd	front	94.5	170.2	63.8	53.5
## 95	sedan	fwd	front	94.5	165.3	63.8	54.5
## 96	hatchback	fwd	front	94.5	165.6	63.8	53.3
## 97	sedan	fwd	front	94.5	165.3	63.8	54.5
## 98	wagon	fwd	front	94.5	170.2	63.8	53.5
## 99	hardtop	fwd	front	95.1	162.4	63.8	53.3

## 100	hatchback	fwd	front	97.2	173.4	65.2	54.7
## 101	sedan	fwd	front	97.2	173.4	65.2	54.7
## 102	sedan	fwd	front	100.4	181.7	66.5	55.1
## 103	wagon	fwd	front	100.4	184.6	66.5	56.1
## 104	sedan	fwd	front	100.4	184.6	66.5	55.1
## 105	hatchback	rwd	front	91.3	170.7	67.9	49.7
## 106	hatchback	rwd	front	91.3	170.7	67.9	49.7
## 107	hatchback	rwd	front	99.2	178.5	67.9	49.7
## 108	sedan	rwd	front	107.9	186.7	68.4	56.7
## 109	sedan	rwd	front	107.9	186.7	68.4	56.7
## 110	wagon	rwd	front	114.2	198.9	68.4	58.7
## 111	wagon	rwd	front	114.2	198.9	68.4	58.7
## 112	sedan	rwd	front	107.9	186.7	68.4	56.7
## 113	sedan	rwd	front	107.9	186.7	68.4	56.7
## 114	wagon	rwd	front	114.2	198.9	68.4	56.7
## 115	wagon	rwd	front	114.2	198.9	68.4	58.7
## 116	sedan	rwd	front	107.9	186.7	68.4	56.7
## 117	sedan	rwd	front	107.9	186.7	68.4	56.7
## 118	sedan	rwd	front	108.0	186.7	68.3	56.0
## 119	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 120	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 121	hatchback	fwd	front	93.7	157.3	63.8	50.6
## 122	sedan	fwd	front	93.7	167.3	63.8	50.8
## 123	sedan	fwd	front	93.7	167.3	63.8	50.8
## 124	wagon	fwd	front	103.3	174.6	64.6	59.8
## 125	hatchback	rwd	front	95.9	173.2	66.3	50.2
## 126	hatchback	rwd	front	94.5	168.9	68.3	50.2
## 127	hardtop	rwd	rear	89.5	168.9	65.0	51.6
## 128	hardtop	rwd	rear	89.5	168.9	65.0	51.6
## 129	convertible	rwd	rear	89.5	168.9	65.0	51.6
## 130	hatchback	rwd	front	98.4	175.7	72.3	50.5
## 131	wagon	fwd	front	96.1	181.5	66.5	55.2
## 132	hatchback	fwd	front	96.1	176.8	66.6	50.5
## 133	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 134	sedan	fwd	front	99.1	186.6	66.5	56.1
## 135	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 136	sedan	fwd	front	99.1	186.6	66.5	56.1
## 137	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 138	sedan	fwd	front	99.1	186.6	66.5	56.1
## 139	hatchback	fwd	front	93.7	156.9	63.4	53.7
## 140	hatchback	fwd	front	93.7	157.9	63.6	53.7
## 141	hatchback	4wd	front	93.3	157.3	63.8	55.7
## 142	sedan	fwd	front	97.2	172.0	65.4	52.5
## 143	sedan	fwd	front	97.2	172.0	65.4	52.5
## 144	sedan	fwd	front	97.2	172.0	65.4	52.5
## 145	sedan	4wd	front	97.0	172.0	65.4	54.3
## 146	sedan	4wd	front	97.0	172.0	65.4	54.3
## 147	wagon	fwd	front	97.0	173.5	65.4	53.0
## 148	wagon	fwd	front	97.0	173.5	65.4	53.0
## 149	wagon	4wd	front	96.9	173.6	65.4	54.9
## 150	wagon	4wd	front	96.9	173.6	65.4	54.9

## 151	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 152	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 153	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 154	wagon	fwd	front	95.7	169.7	63.6	59.1
## 155	wagon	4wd	front	95.7	169.7	63.6	59.1
## 156	wagon	4wd	front	95.7	169.7	63.6	59.1
## 157	sedan	fwd	front	95.7	166.3	64.4	53.0
## 158	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 159	sedan	fwd	front	95.7	166.3	64.4	53.0
## 160	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 161	sedan	fwd	front	95.7	166.3	64.4	53.0
## 162	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 163	sedan	fwd	front	95.7	166.3	64.4	52.8
## 164	sedan	rwd	front	94.5	168.7	64.0	52.6
## 165	hatchback	rwd	front	94.5	168.7	64.0	52.6
## 166	sedan	rwd	front	94.5	168.7	64.0	52.6
## 167	hatchback	rwd	front	94.5	168.7	64.0	52.6
## 168	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 169	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 170	hatchback	rwd	front	98.4	176.2	65.6	52.0
## 171	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 172	hatchback	rwd	front	98.4	176.2	65.6	52.0
## 173	convertible	rwd	front	98.4	176.2	65.6	53.0
## 174	sedan	fwd	front	102.4	175.6	66.5	54.9
## 175	sedan	fwd	front	102.4	175.6	66.5	54.9
## 176	hatchback	fwd	front	102.4	175.6	66.5	53.9
## 177	sedan	fwd	front	102.4	175.6	66.5	54.9
## 178	hatchback	fwd	front	102.4	175.6	66.5	53.9
## 179	hatchback	rwd	front	102.9	183.5	67.7	52.0
## 180	hatchback	rwd	front	102.9	183.5	67.7	52.0
## 181	sedan	rwd	front	104.5	187.8	66.5	54.1
## 182	wagon	rwd	front	104.5	187.8	66.5	54.1
## 183	sedan	fwd	front	97.3	171.7	65.5	55.7
## 184	sedan	fwd	front	97.3	171.7	65.5	55.7
## 185	sedan	fwd	front	97.3	171.7	65.5	55.7
## 186	sedan	fwd	front	97.3	171.7	65.5	55.7
## 187	sedan	fwd	front	97.3	171.7	65.5	55.7
## 188	sedan	fwd	front	97.3	171.7	65.5	55.7
## 189	sedan	fwd	front	97.3	171.7	65.5	55.7
## 190	convertible	fwd	front	94.5	159.3	64.2	55.6
## 191	hatchback	fwd	front	94.5	165.7	64.0	51.4
## 192	sedan	fwd	front	100.4	180.2	66.9	55.1
## 193	sedan	fwd	front	100.4	180.2	66.9	55.1
## 194	wagon	fwd	front	100.4	183.1	66.9	55.1
## 195	sedan	rwd	front	104.3	188.8	67.2	56.2
## 196	wagon	rwd	front	104.3	188.8	67.2	57.5
## 197	sedan	rwd	front	104.3	188.8	67.2	56.2
## 198	wagon	rwd	front	104.3	188.8	67.2	57.5
## 199	sedan	rwd	front	104.3	188.8	67.2	56.2
## 200	wagon	rwd	front	104.3	188.8	67.2	57.5
## 201	sedan	rwd	front	109.1	188.8	68.9	55.5

##	202	sedan	rwd	front	109.1	188.8	68.8	55.5
##	203	sedan	rwd	front	109.1	188.8	68.9	55.5
##	204	sedan	rwd	front	109.1	188.8	68.9	55.5
##	205	sedan	rwd	front	109.1	188.8	68.9	55.5
##		curb.weight	engine.type	num.of.cylinders	engine.size	fuel.system	bore	
##	1	2548	dohc	four	130	mpfi	3.47	
##	2	2548	dohc	four	130	mpfi	3.47	
##	3	2823	ohcv	six	152	mpfi	2.68	
##	4	2337	ohc	four	109	mpfi	3.19	
##	5	2824	ohc	five	136	mpfi	3.19	
##	6	2507	ohc	five	136	mpfi	3.19	
##	7	2844	ohc	five	136	mpfi	3.19	
##	8	2954	ohc	five	136	mpfi	3.19	
##	9	3086	ohc	five	131	mpfi	3.13	
##	10	3053	ohc	five	131	mpfi	3.13	
##	11	2395	ohc	four	108	mpfi	3.5	
##	12	2395	ohc	four	108	mpfi	3.5	
##	13	2710	ohc	six	164	mpfi	3.31	
##	14	2765	ohc	six	164	mpfi	3.31	
##	15	3055	ohc	six	164	mpfi	3.31	
##	16	3230	ohc	six	209	mpfi	3.62	
##	17	3380	ohc	six	209	mpfi	3.62	
##	18	3505	ohc	six	209	mpfi	3.62	
##	19	1488	l	three	61	2bb1	2.91	
##	20	1874	ohc	four	90	2bb1	3.03	
##	21	1909	ohc	four	90	2bb1	3.03	
##	22	1876	ohc	four	90	2bb1	2.97	
##	23	1876	ohc	four	90	2bb1	2.97	
##	24	2128	ohc	four	98	mpfi	3.03	
##	25	1967	ohc	four	90	2bb1	2.97	
##	26	1989	ohc	four	90	2bb1	2.97	
##	27	1989	ohc	four	90	2bb1	2.97	
##	28	2191	ohc	four	98	mpfi	3.03	
##	29	2535	ohc	four	122	2bb1	3.34	
##	30	2811	ohc	four	156	mfi	3.6	
##	31	1713	ohc	four	92	1bb1	2.91	
##	32	1819	ohc	four	92	1bb1	2.91	
##	33	1837	ohc	four	79	1bb1	2.91	
##	34	1940	ohc	four	92	1bb1	2.91	
##	35	1956	ohc	four	92	1bb1	2.91	
##	36	2010	ohc	four	92	1bb1	2.91	
##	37	2024	ohc	four	92	1bb1	2.92	
##	38	2236	ohc	four	110	1bb1	3.15	
##	39	2289	ohc	four	110	1bb1	3.15	
##	40	2304	ohc	four	110	1bb1	3.15	
##	41	2372	ohc	four	110	1bb1	3.15	
##	42	2465	ohc	four	110	mpfi	3.15	
##	43	2293	ohc	four	110	2bb1	3.15	
##	44	2337	ohc	four	111	2bb1	3.31	
##	45	1874	ohc	four	90	2bb1	3.03	
##	46	1909	ohc	four	90	2bb1	3.03	

## 47	2734	ohc	four	119	spfi 3.43
## 48	4066	dohc	six	258	mpfi 3.63
## 49	4066	dohc	six	258	mpfi 3.63
## 50	3950	ohcv	twelve	326	mpfi 3.54
## 51	1890	ohc	four	91	2bb1 3.03
## 52	1900	ohc	four	91	2bb1 3.03
## 53	1905	ohc	four	91	2bb1 3.03
## 54	1945	ohc	four	91	2bb1 3.03
## 55	1950	ohc	four	91	2bb1 3.08
## 56	2380	rotor	two	70	4bb1 ?
## 57	2380	rotor	two	70	4bb1 ?
## 58	2385	rotor	two	70	4bb1 ?
## 59	2500	rotor	two	80	mpfi ?
## 60	2385	ohc	four	122	2bb1 3.39
## 61	2410	ohc	four	122	2bb1 3.39
## 62	2385	ohc	four	122	2bb1 3.39
## 63	2410	ohc	four	122	2bb1 3.39
## 64	2443	ohc	four	122	idi 3.39
## 65	2425	ohc	four	122	2bb1 3.39
## 66	2670	ohc	four	140	mpfi 3.76
## 67	2700	ohc	four	134	idi 3.43
## 68	3515	ohc	five	183	idi 3.58
## 69	3750	ohc	five	183	idi 3.58
## 70	3495	ohc	five	183	idi 3.58
## 71	3770	ohc	five	183	idi 3.58
## 72	3740	ohcv	eight	234	mpfi 3.46
## 73	3685	ohcv	eight	234	mpfi 3.46
## 74	3900	ohcv	eight	308	mpfi 3.8
## 75	3715	ohcv	eight	304	mpfi 3.8
## 76	2910	ohc	four	140	mpfi 3.78
## 77	1918	ohc	four	92	2bb1 2.97
## 78	1944	ohc	four	92	2bb1 2.97
## 79	2004	ohc	four	92	2bb1 2.97
## 80	2145	ohc	four	98	spdi 3.03
## 81	2370	ohc	four	110	spdi 3.17
## 82	2328	ohc	four	122	2bb1 3.35
## 83	2833	ohc	four	156	spdi 3.58
## 84	2921	ohc	four	156	spdi 3.59
## 85	2926	ohc	four	156	spdi 3.59
## 86	2365	ohc	four	122	2bb1 3.35
## 87	2405	ohc	four	122	2bb1 3.35
## 88	2403	ohc	four	110	spdi 3.17
## 89	2403	ohc	four	110	spdi 3.17
## 90	1889	ohc	four	97	2bb1 3.15
## 91	2017	ohc	four	103	idi 2.99
## 92	1918	ohc	four	97	2bb1 3.15
## 93	1938	ohc	four	97	2bb1 3.15
## 94	2024	ohc	four	97	2bb1 3.15
## 95	1951	ohc	four	97	2bb1 3.15
## 96	2028	ohc	four	97	2bb1 3.15
## 97	1971	ohc	four	97	2bb1 3.15

## 98	2037	ohc	four	97	2bb1 3.15
## 99	2008	ohc	four	97	2bb1 3.15
## 100	2324	ohc	four	120	2bb1 3.33
## 101	2302	ohc	four	120	2bb1 3.33
## 102	3095	ohcv	six	181	mpfi 3.43
## 103	3296	ohcv	six	181	mpfi 3.43
## 104	3060	ohcv	six	181	mpfi 3.43
## 105	3071	ohcv	six	181	mpfi 3.43
## 106	3139	ohcv	six	181	mpfi 3.43
## 107	3139	ohcv	six	181	mpfi 3.43
## 108	3020	1	four	120	mpfi 3.46
## 109	3197	1	four	152	idi 3.7
## 110	3230	1	four	120	mpfi 3.46
## 111	3430	1	four	152	idi 3.7
## 112	3075	1	four	120	mpfi 3.46
## 113	3252	1	four	152	idi 3.7
## 114	3285	1	four	120	mpfi 3.46
## 115	3485	1	four	152	idi 3.7
## 116	3075	1	four	120	mpfi 3.46
## 117	3252	1	four	152	idi 3.7
## 118	3130	1	four	134	mpfi 3.61
## 119	1918	ohc	four	90	2bb1 2.97
## 120	2128	ohc	four	98	spdi 3.03
## 121	1967	ohc	four	90	2bb1 2.97
## 122	1989	ohc	four	90	2bb1 2.97
## 123	2191	ohc	four	98	2bb1 2.97
## 124	2535	ohc	four	122	2bb1 3.35
## 125	2818	ohc	four	156	spdi 3.59
## 126	2778	ohc	four	151	mpfi 3.94
## 127	2756	ohcf	six	194	mpfi 3.74
## 128	2756	ohcf	six	194	mpfi 3.74
## 129	2800	ohcf	six	194	mpfi 3.74
## 130	3366	dohcv	eight	203	mpfi 3.94
## 131	2579	ohc	four	132	mpfi 3.46
## 132	2460	ohc	four	132	mpfi 3.46
## 133	2658	ohc	four	121	mpfi 3.54
## 134	2695	ohc	four	121	mpfi 3.54
## 135	2707	ohc	four	121	mpfi 2.54
## 136	2758	ohc	four	121	mpfi 3.54
## 137	2808	dohc	four	121	mpfi 3.54
## 138	2847	dohc	four	121	mpfi 3.54
## 139	2050	ohcf	four	97	2bb1 3.62
## 140	2120	ohcf	four	108	2bb1 3.62
## 141	2240	ohcf	four	108	2bb1 3.62
## 142	2145	ohcf	four	108	2bb1 3.62
## 143	2190	ohcf	four	108	2bb1 3.62
## 144	2340	ohcf	four	108	mpfi 3.62
## 145	2385	ohcf	four	108	2bb1 3.62
## 146	2510	ohcf	four	108	mpfi 3.62
## 147	2290	ohcf	four	108	2bb1 3.62
## 148	2455	ohcf	four	108	mpfi 3.62

## 149	2420	ohcf	four	108	2bb1 3.62
## 150	2650	ohcf	four	108	mpfi 3.62
## 151	1985	ohc	four	92	2bb1 3.05
## 152	2040	ohc	four	92	2bb1 3.05
## 153	2015	ohc	four	92	2bb1 3.05
## 154	2280	ohc	four	92	2bb1 3.05
## 155	2290	ohc	four	92	2bb1 3.05
## 156	3110	ohc	four	92	2bb1 3.05
## 157	2081	ohc	four	98	2bb1 3.19
## 158	2109	ohc	four	98	2bb1 3.19
## 159	2275	ohc	four	110	idi 3.27
## 160	2275	ohc	four	110	idi 3.27
## 161	2094	ohc	four	98	2bb1 3.19
## 162	2122	ohc	four	98	2bb1 3.19
## 163	2140	ohc	four	98	2bb1 3.19
## 164	2169	ohc	four	98	2bb1 3.19
## 165	2204	ohc	four	98	2bb1 3.19
## 166	2265	dohc	four	98	mpfi 3.24
## 167	2300	dohc	four	98	mpfi 3.24
## 168	2540	ohc	four	146	mpfi 3.62
## 169	2536	ohc	four	146	mpfi 3.62
## 170	2551	ohc	four	146	mpfi 3.62
## 171	2679	ohc	four	146	mpfi 3.62
## 172	2714	ohc	four	146	mpfi 3.62
## 173	2975	ohc	four	146	mpfi 3.62
## 174	2326	ohc	four	122	mpfi 3.31
## 175	2480	ohc	four	110	idi 3.27
## 176	2414	ohc	four	122	mpfi 3.31
## 177	2414	ohc	four	122	mpfi 3.31
## 178	2458	ohc	four	122	mpfi 3.31
## 179	2976	dohc	six	171	mpfi 3.27
## 180	3016	dohc	six	171	mpfi 3.27
## 181	3131	dohc	six	171	mpfi 3.27
## 182	3151	dohc	six	161	mpfi 3.27
## 183	2261	ohc	four	97	idi 3.01
## 184	2209	ohc	four	109	mpfi 3.19
## 185	2264	ohc	four	97	idi 3.01
## 186	2212	ohc	four	109	mpfi 3.19
## 187	2275	ohc	four	109	mpfi 3.19
## 188	2319	ohc	four	97	idi 3.01
## 189	2300	ohc	four	109	mpfi 3.19
## 190	2254	ohc	four	109	mpfi 3.19
## 191	2221	ohc	four	109	mpfi 3.19
## 192	2661	ohc	five	136	mpfi 3.19
## 193	2579	ohc	four	97	idi 3.01
## 194	2563	ohc	four	109	mpfi 3.19
## 195	2912	ohc	four	141	mpfi 3.78
## 196	3034	ohc	four	141	mpfi 3.78
## 197	2935	ohc	four	141	mpfi 3.78
## 198	3042	ohc	four	141	mpfi 3.78
## 199	3045	ohc	four	130	mpfi 3.62

## 200	3157	ohc	four	130	mpfi	3.62
## 201	2952	ohc	four	141	mpfi	3.78
## 202	3049	ohc	four	141	mpfi	3.78
## 203	3012	ohcv	six	173	mpfi	3.58
## 204	3217	ohc	six	145	idi	3.01
## 205	3062	ohc	four	141	mpfi	3.78
##	stroke	compression.ratio	horsepower	peak.rpm	city.mpg	highway.mpg price
## 1	2.68	9.00	111	5000	21	27 13495
## 2	2.68	9.00	111	5000	21	27 16500
## 3	3.47	9.00	154	5000	19	26 16500
## 4	3.4	10.00	102	5500	24	30 13950
## 5	3.4	8.00	115	5500	18	22 17450
## 6	3.4	8.50	110	5500	19	25 15250
## 7	3.4	8.50	110	5500	19	25 17710
## 8	3.4	8.50	110	5500	19	25 18920
## 9	3.4	8.30	140	5500	17	20 23875
## 10	3.4	7.00	160	5500	16	22 ?
## 11	2.8	8.80	101	5800	23	29 16430
## 12	2.8	8.80	101	5800	23	29 16925
## 13	3.19	9.00	121	4250	21	28 20970
## 14	3.19	9.00	121	4250	21	28 21105
## 15	3.19	9.00	121	4250	20	25 24565
## 16	3.39	8.00	182	5400	16	22 30760
## 17	3.39	8.00	182	5400	16	22 41315
## 18	3.39	8.00	182	5400	15	20 36880
## 19	3.03	9.50	48	5100	47	53 5151
## 20	3.11	9.60	70	5400	38	43 6295
## 21	3.11	9.60	70	5400	38	43 6575
## 22	3.23	9.41	68	5500	37	41 5572
## 23	3.23	9.40	68	5500	31	38 6377
## 24	3.39	7.60	102	5500	24	30 7957
## 25	3.23	9.40	68	5500	31	38 6229
## 26	3.23	9.40	68	5500	31	38 6692
## 27	3.23	9.40	68	5500	31	38 7609
## 28	3.39	7.60	102	5500	24	30 8558
## 29	3.46	8.50	88	5000	24	30 8921
## 30	3.9	7.00	145	5000	19	24 12964
## 31	3.41	9.60	58	4800	49	54 6479
## 32	3.41	9.20	76	6000	31	38 6855
## 33	3.07	10.10	60	5500	38	42 5399
## 34	3.41	9.20	76	6000	30	34 6529
## 35	3.41	9.20	76	6000	30	34 7129
## 36	3.41	9.20	76	6000	30	34 7295
## 37	3.41	9.20	76	6000	30	34 7295
## 38	3.58	9.00	86	5800	27	33 7895
## 39	3.58	9.00	86	5800	27	33 9095
## 40	3.58	9.00	86	5800	27	33 8845
## 41	3.58	9.00	86	5800	27	33 10295
## 42	3.58	9.00	101	5800	24	28 12945
## 43	3.58	9.10	100	5500	25	31 10345
## 44	3.23	8.50	78	4800	24	29 6785

## 45	3.11	9.60	70	5400	38	43	?
## 46	3.11	9.60	70	5400	38	43	?
## 47	3.23	9.20	90	5000	24	29	11048
## 48	4.17	8.10	176	4750	15	19	32250
## 49	4.17	8.10	176	4750	15	19	35550
## 50	2.76	11.50	262	5000	13	17	36000
## 51	3.15	9.00	68	5000	30	31	5195
## 52	3.15	9.00	68	5000	31	38	6095
## 53	3.15	9.00	68	5000	31	38	6795
## 54	3.15	9.00	68	5000	31	38	6695
## 55	3.15	9.00	68	5000	31	38	7395
## 56	?	9.40	101	6000	17	23	10945
## 57	?	9.40	101	6000	17	23	11845
## 58	?	9.40	101	6000	17	23	13645
## 59	?	9.40	135	6000	16	23	15645
## 60	3.39	8.60	84	4800	26	32	8845
## 61	3.39	8.60	84	4800	26	32	8495
## 62	3.39	8.60	84	4800	26	32	10595
## 63	3.39	8.60	84	4800	26	32	10245
## 64	3.39	22.70	64	4650	36	42	10795
## 65	3.39	8.60	84	4800	26	32	11245
## 66	3.16	8.00	120	5000	19	27	18280
## 67	3.64	22.00	72	4200	31	39	18344
## 68	3.64	21.50	123	4350	22	25	25552
## 69	3.64	21.50	123	4350	22	25	28248
## 70	3.64	21.50	123	4350	22	25	28176
## 71	3.64	21.50	123	4350	22	25	31600
## 72	3.1	8.30	155	4750	16	18	34184
## 73	3.1	8.30	155	4750	16	18	35056
## 74	3.35	8.00	184	4500	14	16	40960
## 75	3.35	8.00	184	4500	14	16	45400
## 76	3.12	8.00	175	5000	19	24	16503
## 77	3.23	9.40	68	5500	37	41	5389
## 78	3.23	9.40	68	5500	31	38	6189
## 79	3.23	9.40	68	5500	31	38	6669
## 80	3.39	7.60	102	5500	24	30	7689
## 81	3.46	7.50	116	5500	23	30	9959
## 82	3.46	8.50	88	5000	25	32	8499
## 83	3.86	7.00	145	5000	19	24	12629
## 84	3.86	7.00	145	5000	19	24	14869
## 85	3.86	7.00	145	5000	19	24	14489
## 86	3.46	8.50	88	5000	25	32	6989
## 87	3.46	8.50	88	5000	25	32	8189
## 88	3.46	7.50	116	5500	23	30	9279
## 89	3.46	7.50	116	5500	23	30	9279
## 90	3.29	9.40	69	5200	31	37	5499
## 91	3.47	21.90	55	4800	45	50	7099
## 92	3.29	9.40	69	5200	31	37	6649
## 93	3.29	9.40	69	5200	31	37	6849
## 94	3.29	9.40	69	5200	31	37	7349
## 95	3.29	9.40	69	5200	31	37	7299

## 96	3.29	9.40	69	5200	31	37	7799
## 97	3.29	9.40	69	5200	31	37	7499
## 98	3.29	9.40	69	5200	31	37	7999
## 99	3.29	9.40	69	5200	31	37	8249
## 100	3.47	8.50	97	5200	27	34	8949
## 101	3.47	8.50	97	5200	27	34	9549
## 102	3.27	9.00	152	5200	17	22	13499
## 103	3.27	9.00	152	5200	17	22	14399
## 104	3.27	9.00	152	5200	19	25	13499
## 105	3.27	9.00	160	5200	19	25	17199
## 106	3.27	7.80	200	5200	17	23	19699
## 107	3.27	9.00	160	5200	19	25	18399
## 108	3.19	8.40	97	5000	19	24	11900
## 109	3.52	21.00	95	4150	28	33	13200
## 110	3.19	8.40	97	5000	19	24	12440
## 111	3.52	21.00	95	4150	25	25	13860
## 112	2.19	8.40	95	5000	19	24	15580
## 113	3.52	21.00	95	4150	28	33	16900
## 114	2.19	8.40	95	5000	19	24	16695
## 115	3.52	21.00	95	4150	25	25	17075
## 116	3.19	8.40	97	5000	19	24	16630
## 117	3.52	21.00	95	4150	28	33	17950
## 118	3.21	7.00	142	5600	18	24	18150
## 119	3.23	9.40	68	5500	37	41	5572
## 120	3.39	7.60	102	5500	24	30	7957
## 121	3.23	9.40	68	5500	31	38	6229
## 122	3.23	9.40	68	5500	31	38	6692
## 123	3.23	9.40	68	5500	31	38	7609
## 124	3.46	8.50	88	5000	24	30	8921
## 125	3.86	7.00	145	5000	19	24	12764
## 126	3.11	9.50	143	5500	19	27	22018
## 127	2.9	9.50	207	5900	17	25	32528
## 128	2.9	9.50	207	5900	17	25	34028
## 129	2.9	9.50	207	5900	17	25	37028
## 130	3.11	10.00	288	5750	17	28	?
## 131	3.9	8.70	?	?	23	31	9295
## 132	3.9	8.70	?	?	23	31	9895
## 133	3.07	9.31	110	5250	21	28	11850
## 134	3.07	9.30	110	5250	21	28	12170
## 135	2.07	9.30	110	5250	21	28	15040
## 136	3.07	9.30	110	5250	21	28	15510
## 137	3.07	9.00	160	5500	19	26	18150
## 138	3.07	9.00	160	5500	19	26	18620
## 139	2.36	9.00	69	4900	31	36	5118
## 140	2.64	8.70	73	4400	26	31	7053
## 141	2.64	8.70	73	4400	26	31	7603
## 142	2.64	9.50	82	4800	32	37	7126
## 143	2.64	9.50	82	4400	28	33	7775
## 144	2.64	9.00	94	5200	26	32	9960
## 145	2.64	9.00	82	4800	24	25	9233
## 146	2.64	7.70	111	4800	24	29	11259

## 147	2.64	9.00	82	4800	28	32	7463
## 148	2.64	9.00	94	5200	25	31	10198
## 149	2.64	9.00	82	4800	23	29	8013
## 150	2.64	7.70	111	4800	23	23	11694
## 151	3.03	9.00	62	4800	35	39	5348
## 152	3.03	9.00	62	4800	31	38	6338
## 153	3.03	9.00	62	4800	31	38	6488
## 154	3.03	9.00	62	4800	31	37	6918
## 155	3.03	9.00	62	4800	27	32	7898
## 156	3.03	9.00	62	4800	27	32	8778
## 157	3.03	9.00	70	4800	30	37	6938
## 158	3.03	9.00	70	4800	30	37	7198
## 159	3.35	22.50	56	4500	34	36	7898
## 160	3.35	22.50	56	4500	38	47	7788
## 161	3.03	9.00	70	4800	38	47	7738
## 162	3.03	9.00	70	4800	28	34	8358
## 163	3.03	9.00	70	4800	28	34	9258
## 164	3.03	9.00	70	4800	29	34	8058
## 165	3.03	9.00	70	4800	29	34	8238
## 166	3.08	9.40	112	6600	26	29	9298
## 167	3.08	9.40	112	6600	26	29	9538
## 168	3.5	9.30	116	4800	24	30	8449
## 169	3.5	9.30	116	4800	24	30	9639
## 170	3.5	9.30	116	4800	24	30	9989
## 171	3.5	9.30	116	4800	24	30	11199
## 172	3.5	9.30	116	4800	24	30	11549
## 173	3.5	9.30	116	4800	24	30	17669
## 174	3.54	8.70	92	4200	29	34	8948
## 175	3.35	22.50	73	4500	30	33	10698
## 176	3.54	8.70	92	4200	27	32	9988
## 177	3.54	8.70	92	4200	27	32	10898
## 178	3.54	8.70	92	4200	27	32	11248
## 179	3.35	9.30	161	5200	20	24	16558
## 180	3.35	9.30	161	5200	19	24	15998
## 181	3.35	9.20	156	5200	20	24	15690
## 182	3.35	9.20	156	5200	19	24	15750
## 183	3.4	23.00	52	4800	37	46	7775
## 184	3.4	9.00	85	5250	27	34	7975
## 185	3.4	23.00	52	4800	37	46	7995
## 186	3.4	9.00	85	5250	27	34	8195
## 187	3.4	9.00	85	5250	27	34	8495
## 188	3.4	23.00	68	4500	37	42	9495
## 189	3.4	10.00	100	5500	26	32	9995
## 190	3.4	8.50	90	5500	24	29	11595
## 191	3.4	8.50	90	5500	24	29	9980
## 192	3.4	8.50	110	5500	19	24	13295
## 193	3.4	23.00	68	4500	33	38	13845
## 194	3.4	9.00	88	5500	25	31	12290
## 195	3.15	9.50	114	5400	23	28	12940
## 196	3.15	9.50	114	5400	23	28	13415
## 197	3.15	9.50	114	5400	24	28	15985

```
## 198 3.15          9.50          114      5400        24        28 16515
## 199 3.15          7.50          162      5100        17        22 18420
## 200 3.15          7.50          162      5100        17        22 18950
## 201 3.15          9.50          114      5400        23        28 16845
## 202 3.15          8.70          160      5300        19        25 19045
## 203 2.87          8.80          134      5500        18        23 21485
## 204 3.4          23.00          106      4800        26        27 22470
## 205 3.15          9.50          114      5400        19        25 22625
```

```
#2.Display the no. of rows and columns in the dataset (dim)
dim(datasets)
```

```
## [1] 205 26
```

```
#3. Display the header or attribute names from the dataset (names)
names(datasets)
```

```
## [1] "symboling"      "normalized.losses" "make"
## [4] "fuel.type"      "aspiration"        "num.of.doors"
## [7] "body.style"     "drive.wheels"      "engine.location"
## [10] "wheel.base"     "length"            "width"
## [13] "height"         "curb.weight"        "engine.type"
## [16] "num.of.cylinders" "engine.size"        "fuel.system"
## [19] "bore"           "stroke"            "compression.ratio"
## [22] "horsepower"     "peak.rpm"          "city.mpg"
## [25] "highway.mpg"     "price"
```

```
#4.Display the structure of the dataset (str)
str(datasets)
```

```
## 'data.frame':    205 obs. of  26 variables:
## $ symboling      : int  3 3 1 2 2 2 1 1 1 0 ...
## $ normalized.losses: chr  "?" "?" "?" "164" ...
## $ make           : chr  "alfa-romero" "alfa-romero" "alfa-romero" "audi" ...
## $ fuel.type      : chr  "gas" "gas" "gas" "gas" ...
## $ aspiration      : chr  "std" "std" "std" "std" ...
## $ num.of.doors    : chr  "two" "two" "two" "four" ...
## $ body.style      : chr  "convertible" "convertible" "hatchback" "sedan" ...
## $ drive.wheels    : chr  "rwd" "rwd" "rwd" "fwd" ...
## $ engine.location : chr  "front" "front" "front" "front" ...
## $ wheel.base      : num  88.6 88.6 94.5 99.8 99.4 ...
## $ length          : num  169 169 171 177 177 ...
## $ width           : num  64.1 64.1 65.5 66.2 66.4 66.3 71.4 71.4 71.4 67.9 ...
## $ height          : num  48.8 48.8 52.4 54.3 54.3 53.1 55.7 55.7 55.9 52 ...
## $ curb.weight     : int  2548 2548 2823 2337 2824 2507 2844 2954 3086 3053 ...
## $ engine.type     : chr  "dohc" "dohc" "ohcv" "ohc" ...
## $ num.of.cylinders: chr  "four" "four" "six" "four" ...
## $ engine.size     : int  130 130 152 109 136 136 136 136 131 131 ...
## $ fuel.system     : chr  "mpfi" "mpfi" "mpfi" "mpfi" ...
## $ bore            : chr  "3.47" "3.47" "2.68" "3.19" ...
## $ stroke          : chr  "2.68" "2.68" "3.47" "3.4" ...
## $ compression.ratio: num  9 9 9 10 8 8.5 8.5 8.5 8.3 7 ...
## $ horsepower      : chr  "111" "111" "154" "102" ...
## $ peak.rpm        : chr  "5000" "5000" "5000" "5500" ...
## $ city.mpg        : int  21 21 19 24 18 19 19 19 17 16 ...
## $ highway.mpg     : int  27 27 26 30 22 25 25 25 20 22 ...
## $ price           : chr  "13495" "16500" "16500" "13950" ...
```

#5.View the First and Last 3 rows of the dataset. (head, tail)
head(datasets,3)

```
##   symboling normalized.losses      make fuel.type aspiration num.of.doors
## 1         3                ? alfa-romero      gas      std         two
## 2         3                ? alfa-romero      gas      std         two
## 3         1                ? alfa-romero      gas      std         two
##   body.style drive.wheels engine.location wheel.base length width height
## 1 convertible      rwd         front      88.6  168.8  64.1  48.8
## 2 convertible      rwd         front      88.6  168.8  64.1  48.8
## 3  hatchback      rwd         front      94.5  171.2  65.5  52.4
##   curb.weight engine.type num.of.cylinders engine.size fuel.system bore stroke
## 1         2548      dohc         four        130      mpfi 3.47  2.68
## 2         2548      dohc         four        130      mpfi 3.47  2.68
## 3         2823      ohcv         six         152      mpfi 2.68  3.47
##   compression.ratio horsepower peak.rpm city.mpg highway.mpg price
## 1              9         111     5000     21         27 13495
## 2              9         111     5000     21         27 16500
## 3              9         154     5000     19         26 16500
```

```
tail(datasets,3)
```

```
##      symboling normalized.losses  make fuel.type aspiration num.of.doors
## 203      -1              95 volvo      gas      std         four
## 204      -1              95 volvo    diesel    turbo      four
## 205      -1              95 volvo      gas    turbo      four
##      body.style drive.wheels engine.location wheel.base length width height
## 203      sedan      rwd          front      109.1  188.8  68.9  55.5
## 204      sedan      rwd          front      109.1  188.8  68.9  55.5
## 205      sedan      rwd          front      109.1  188.8  68.9  55.5
##      curb.weight engine.type num.of.cylinders engine.size fuel.system bore
## 203      3012      ohcv          six          173      mpfi 3.58
## 204      3217      ohc          six          145      idi 3.01
## 205      3062      ohc          four          141      mpfi 3.78
##      stroke compression.ratio horsepower peak.rpm city.mpg highway.mpg price
## 203  2.87          8.8          134      5500      18          23 21485
## 204  3.4          23.0          106      4800      26          27 22470
## 205  3.15          9.5          114      5400      19          25 22625
```

#6.Delete the column fuel-system, bore from the dataset by Column index number. (Use subset method [,])

```
dataset_subset<-datasets[,-c(17,18)]
dataset_subset
```

##	symboling	normalized.losses	make	fuel.type	aspiration	num.of.doors
## 1	3	?	alfa-romero	gas	std	two
## 2	3	?	alfa-romero	gas	std	two
## 3	1	?	alfa-romero	gas	std	two
## 4	2	164	audi	gas	std	four
## 5	2	164	audi	gas	std	four
## 6	2	?	audi	gas	std	two
## 7	1	158	audi	gas	std	four
## 8	1	?	audi	gas	std	four
## 9	1	158	audi	gas	turbo	four
## 10	0	?	audi	gas	turbo	two
## 11	2	192	bmw	gas	std	two
## 12	0	192	bmw	gas	std	four
## 13	0	188	bmw	gas	std	two
## 14	0	188	bmw	gas	std	four
## 15	1	?	bmw	gas	std	four
## 16	0	?	bmw	gas	std	four
## 17	0	?	bmw	gas	std	two
## 18	0	?	bmw	gas	std	four
## 19	2	121	chevrolet	gas	std	two
## 20	1	98	chevrolet	gas	std	two
## 21	0	81	chevrolet	gas	std	four
## 22	1	118	dodge	gas	std	two
## 23	1	118	dodge	gas	std	two
## 24	1	118	dodge	gas	turbo	two
## 25	1	148	dodge	gas	std	four
## 26	1	148	dodge	gas	std	four
## 27	1	148	dodge	gas	std	four
## 28	1	148	dodge	gas	turbo	?
## 29	-1	110	dodge	gas	std	four
## 30	3	145	dodge	gas	turbo	two
## 31	2	137	honda	gas	std	two
## 32	2	137	honda	gas	std	two
## 33	1	101	honda	gas	std	two
## 34	1	101	honda	gas	std	two
## 35	1	101	honda	gas	std	two
## 36	0	110	honda	gas	std	four
## 37	0	78	honda	gas	std	four
## 38	0	106	honda	gas	std	two
## 39	0	106	honda	gas	std	two
## 40	0	85	honda	gas	std	four
## 41	0	85	honda	gas	std	four
## 42	0	85	honda	gas	std	four
## 43	1	107	honda	gas	std	two
## 44	0	?	isuzu	gas	std	four
## 45	1	?	isuzu	gas	std	two
## 46	0	?	isuzu	gas	std	four
## 47	2	?	isuzu	gas	std	two
## 48	0	145	jaguar	gas	std	four
## 49	0	?	jaguar	gas	std	four
## 50	0	?	jaguar	gas	std	two

## 51	1	104	mazda	gas	std	two
## 52	1	104	mazda	gas	std	two
## 53	1	104	mazda	gas	std	two
## 54	1	113	mazda	gas	std	four
## 55	1	113	mazda	gas	std	four
## 56	3	150	mazda	gas	std	two
## 57	3	150	mazda	gas	std	two
## 58	3	150	mazda	gas	std	two
## 59	3	150	mazda	gas	std	two
## 60	1	129	mazda	gas	std	two
## 61	0	115	mazda	gas	std	four
## 62	1	129	mazda	gas	std	two
## 63	0	115	mazda	gas	std	four
## 64	0	?	mazda	diesel	std	?
## 65	0	115	mazda	gas	std	four
## 66	0	118	mazda	gas	std	four
## 67	0	?	mazda	diesel	std	four
## 68	-1	93	mercedes-benz	diesel	turbo	four
## 69	-1	93	mercedes-benz	diesel	turbo	four
## 70	0	93	mercedes-benz	diesel	turbo	two
## 71	-1	93	mercedes-benz	diesel	turbo	four
## 72	-1	?	mercedes-benz	gas	std	four
## 73	3	142	mercedes-benz	gas	std	two
## 74	0	?	mercedes-benz	gas	std	four
## 75	1	?	mercedes-benz	gas	std	two
## 76	1	?	mercury	gas	turbo	two
## 77	2	161	mitsubishi	gas	std	two
## 78	2	161	mitsubishi	gas	std	two
## 79	2	161	mitsubishi	gas	std	two
## 80	1	161	mitsubishi	gas	turbo	two
## 81	3	153	mitsubishi	gas	turbo	two
## 82	3	153	mitsubishi	gas	std	two
## 83	3	?	mitsubishi	gas	turbo	two
## 84	3	?	mitsubishi	gas	turbo	two
## 85	3	?	mitsubishi	gas	turbo	two
## 86	1	125	mitsubishi	gas	std	four
## 87	1	125	mitsubishi	gas	std	four
## 88	1	125	mitsubishi	gas	turbo	four
## 89	-1	137	mitsubishi	gas	std	four
## 90	1	128	nissan	gas	std	two
## 91	1	128	nissan	diesel	std	two
## 92	1	128	nissan	gas	std	two
## 93	1	122	nissan	gas	std	four
## 94	1	103	nissan	gas	std	four
## 95	1	128	nissan	gas	std	two
## 96	1	128	nissan	gas	std	two
## 97	1	122	nissan	gas	std	four
## 98	1	103	nissan	gas	std	four
## 99	2	168	nissan	gas	std	two
## 100	0	106	nissan	gas	std	four
## 101	0	106	nissan	gas	std	four

## 102	0	128	nissan	gas	std	four
## 103	0	108	nissan	gas	std	four
## 104	0	108	nissan	gas	std	four
## 105	3	194	nissan	gas	std	two
## 106	3	194	nissan	gas	turbo	two
## 107	1	231	nissan	gas	std	two
## 108	0	161	peugot	gas	std	four
## 109	0	161	peugot	diesel	turbo	four
## 110	0	?	peugot	gas	std	four
## 111	0	?	peugot	diesel	turbo	four
## 112	0	161	peugot	gas	std	four
## 113	0	161	peugot	diesel	turbo	four
## 114	0	?	peugot	gas	std	four
## 115	0	?	peugot	diesel	turbo	four
## 116	0	161	peugot	gas	std	four
## 117	0	161	peugot	diesel	turbo	four
## 118	0	161	peugot	gas	turbo	four
## 119	1	119	plymouth	gas	std	two
## 120	1	119	plymouth	gas	turbo	two
## 121	1	154	plymouth	gas	std	four
## 122	1	154	plymouth	gas	std	four
## 123	1	154	plymouth	gas	std	four
## 124	-1	74	plymouth	gas	std	four
## 125	3	?	plymouth	gas	turbo	two
## 126	3	186	porsche	gas	std	two
## 127	3	?	porsche	gas	std	two
## 128	3	?	porsche	gas	std	two
## 129	3	?	porsche	gas	std	two
## 130	1	?	porsche	gas	std	two
## 131	0	?	renault	gas	std	four
## 132	2	?	renault	gas	std	two
## 133	3	150	saab	gas	std	two
## 134	2	104	saab	gas	std	four
## 135	3	150	saab	gas	std	two
## 136	2	104	saab	gas	std	four
## 137	3	150	saab	gas	turbo	two
## 138	2	104	saab	gas	turbo	four
## 139	2	83	subaru	gas	std	two
## 140	2	83	subaru	gas	std	two
## 141	2	83	subaru	gas	std	two
## 142	0	102	subaru	gas	std	four
## 143	0	102	subaru	gas	std	four
## 144	0	102	subaru	gas	std	four
## 145	0	102	subaru	gas	std	four
## 146	0	102	subaru	gas	turbo	four
## 147	0	89	subaru	gas	std	four
## 148	0	89	subaru	gas	std	four
## 149	0	85	subaru	gas	std	four
## 150	0	85	subaru	gas	turbo	four
## 151	1	87	toyota	gas	std	two
## 152	1	87	toyota	gas	std	two

## 153	1	74	toyota	gas	std	four
## 154	0	77	toyota	gas	std	four
## 155	0	81	toyota	gas	std	four
## 156	0	91	toyota	gas	std	four
## 157	0	91	toyota	gas	std	four
## 158	0	91	toyota	gas	std	four
## 159	0	91	toyota	diesel	std	four
## 160	0	91	toyota	diesel	std	four
## 161	0	91	toyota	gas	std	four
## 162	0	91	toyota	gas	std	four
## 163	0	91	toyota	gas	std	four
## 164	1	168	toyota	gas	std	two
## 165	1	168	toyota	gas	std	two
## 166	1	168	toyota	gas	std	two
## 167	1	168	toyota	gas	std	two
## 168	2	134	toyota	gas	std	two
## 169	2	134	toyota	gas	std	two
## 170	2	134	toyota	gas	std	two
## 171	2	134	toyota	gas	std	two
## 172	2	134	toyota	gas	std	two
## 173	2	134	toyota	gas	std	two
## 174	-1	65	toyota	gas	std	four
## 175	-1	65	toyota	diesel	turbo	four
## 176	-1	65	toyota	gas	std	four
## 177	-1	65	toyota	gas	std	four
## 178	-1	65	toyota	gas	std	four
## 179	3	197	toyota	gas	std	two
## 180	3	197	toyota	gas	std	two
## 181	-1	90	toyota	gas	std	four
## 182	-1	?	toyota	gas	std	four
## 183	2	122	volkswagen	diesel	std	two
## 184	2	122	volkswagen	gas	std	two
## 185	2	94	volkswagen	diesel	std	four
## 186	2	94	volkswagen	gas	std	four
## 187	2	94	volkswagen	gas	std	four
## 188	2	94	volkswagen	diesel	turbo	four
## 189	2	94	volkswagen	gas	std	four
## 190	3	?	volkswagen	gas	std	two
## 191	3	256	volkswagen	gas	std	two
## 192	0	?	volkswagen	gas	std	four
## 193	0	?	volkswagen	diesel	turbo	four
## 194	0	?	volkswagen	gas	std	four
## 195	-2	103	volvo	gas	std	four
## 196	-1	74	volvo	gas	std	four
## 197	-2	103	volvo	gas	std	four
## 198	-1	74	volvo	gas	std	four
## 199	-2	103	volvo	gas	turbo	four
## 200	-1	74	volvo	gas	turbo	four
## 201	-1	95	volvo	gas	std	four
## 202	-1	95	volvo	gas	turbo	four
## 203	-1	95	volvo	gas	std	four

## 204	-1	95	volvo	diesel	turbo	four	
## 205	-1	95	volvo	gas	turbo	four	
##	body.style	drive.wheels	engine.location	wheel.base	length	width	height
## 1	convertible	rwd	front	88.6	168.8	64.1	48.8
## 2	convertible	rwd	front	88.6	168.8	64.1	48.8
## 3	hatchback	rwd	front	94.5	171.2	65.5	52.4
## 4	sedan	fwd	front	99.8	176.6	66.2	54.3
## 5	sedan	4wd	front	99.4	176.6	66.4	54.3
## 6	sedan	fwd	front	99.8	177.3	66.3	53.1
## 7	sedan	fwd	front	105.8	192.7	71.4	55.7
## 8	wagon	fwd	front	105.8	192.7	71.4	55.7
## 9	sedan	fwd	front	105.8	192.7	71.4	55.9
## 10	hatchback	4wd	front	99.5	178.2	67.9	52.0
## 11	sedan	rwd	front	101.2	176.8	64.8	54.3
## 12	sedan	rwd	front	101.2	176.8	64.8	54.3
## 13	sedan	rwd	front	101.2	176.8	64.8	54.3
## 14	sedan	rwd	front	101.2	176.8	64.8	54.3
## 15	sedan	rwd	front	103.5	189.0	66.9	55.7
## 16	sedan	rwd	front	103.5	189.0	66.9	55.7
## 17	sedan	rwd	front	103.5	193.8	67.9	53.7
## 18	sedan	rwd	front	110.0	197.0	70.9	56.3
## 19	hatchback	fwd	front	88.4	141.1	60.3	53.2
## 20	hatchback	fwd	front	94.5	155.9	63.6	52.0
## 21	sedan	fwd	front	94.5	158.8	63.6	52.0
## 22	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 23	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 24	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 25	hatchback	fwd	front	93.7	157.3	63.8	50.6
## 26	sedan	fwd	front	93.7	157.3	63.8	50.6
## 27	sedan	fwd	front	93.7	157.3	63.8	50.6
## 28	sedan	fwd	front	93.7	157.3	63.8	50.6
## 29	wagon	fwd	front	103.3	174.6	64.6	59.8
## 30	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 31	hatchback	fwd	front	86.6	144.6	63.9	50.8
## 32	hatchback	fwd	front	86.6	144.6	63.9	50.8
## 33	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 34	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 35	hatchback	fwd	front	93.7	150.0	64.0	52.6
## 36	sedan	fwd	front	96.5	163.4	64.0	54.5
## 37	wagon	fwd	front	96.5	157.1	63.9	58.3
## 38	hatchback	fwd	front	96.5	167.5	65.2	53.3
## 39	hatchback	fwd	front	96.5	167.5	65.2	53.3
## 40	sedan	fwd	front	96.5	175.4	65.2	54.1
## 41	sedan	fwd	front	96.5	175.4	62.5	54.1
## 42	sedan	fwd	front	96.5	175.4	65.2	54.1
## 43	sedan	fwd	front	96.5	169.1	66.0	51.0
## 44	sedan	rwd	front	94.3	170.7	61.8	53.5
## 45	sedan	fwd	front	94.5	155.9	63.6	52.0
## 46	sedan	fwd	front	94.5	155.9	63.6	52.0
## 47	hatchback	rwd	front	96.0	172.6	65.2	51.4
## 48	sedan	rwd	front	113.0	199.6	69.6	52.8

## 49	sedan	rwd	front	113.0	199.6	69.6	52.8
## 50	sedan	rwd	front	102.0	191.7	70.6	47.8
## 51	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 52	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 53	hatchback	fwd	front	93.1	159.1	64.2	54.1
## 54	sedan	fwd	front	93.1	166.8	64.2	54.1
## 55	sedan	fwd	front	93.1	166.8	64.2	54.1
## 56	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 57	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 58	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 59	hatchback	rwd	front	95.3	169.0	65.7	49.6
## 60	hatchback	fwd	front	98.8	177.8	66.5	53.7
## 61	sedan	fwd	front	98.8	177.8	66.5	55.5
## 62	hatchback	fwd	front	98.8	177.8	66.5	53.7
## 63	sedan	fwd	front	98.8	177.8	66.5	55.5
## 64	sedan	fwd	front	98.8	177.8	66.5	55.5
## 65	hatchback	fwd	front	98.8	177.8	66.5	55.5
## 66	sedan	rwd	front	104.9	175.0	66.1	54.4
## 67	sedan	rwd	front	104.9	175.0	66.1	54.4
## 68	sedan	rwd	front	110.0	190.9	70.3	56.5
## 69	wagon	rwd	front	110.0	190.9	70.3	58.7
## 70	hardtop	rwd	front	106.7	187.5	70.3	54.9
## 71	sedan	rwd	front	115.6	202.6	71.7	56.3
## 72	sedan	rwd	front	115.6	202.6	71.7	56.5
## 73	convertible	rwd	front	96.6	180.3	70.5	50.8
## 74	sedan	rwd	front	120.9	208.1	71.7	56.7
## 75	hardtop	rwd	front	112.0	199.2	72.0	55.4
## 76	hatchback	rwd	front	102.7	178.4	68.0	54.8
## 77	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 78	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 79	hatchback	fwd	front	93.7	157.3	64.4	50.8
## 80	hatchback	fwd	front	93.0	157.3	63.8	50.8
## 81	hatchback	fwd	front	96.3	173.0	65.4	49.4
## 82	hatchback	fwd	front	96.3	173.0	65.4	49.4
## 83	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 84	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 85	hatchback	fwd	front	95.9	173.2	66.3	50.2
## 86	sedan	fwd	front	96.3	172.4	65.4	51.6
## 87	sedan	fwd	front	96.3	172.4	65.4	51.6
## 88	sedan	fwd	front	96.3	172.4	65.4	51.6
## 89	sedan	fwd	front	96.3	172.4	65.4	51.6
## 90	sedan	fwd	front	94.5	165.3	63.8	54.5
## 91	sedan	fwd	front	94.5	165.3	63.8	54.5
## 92	sedan	fwd	front	94.5	165.3	63.8	54.5
## 93	sedan	fwd	front	94.5	165.3	63.8	54.5
## 94	wagon	fwd	front	94.5	170.2	63.8	53.5
## 95	sedan	fwd	front	94.5	165.3	63.8	54.5
## 96	hatchback	fwd	front	94.5	165.6	63.8	53.3
## 97	sedan	fwd	front	94.5	165.3	63.8	54.5
## 98	wagon	fwd	front	94.5	170.2	63.8	53.5
## 99	hardtop	fwd	front	95.1	162.4	63.8	53.3

## 100	hatchback	fwd	front	97.2	173.4	65.2	54.7
## 101	sedan	fwd	front	97.2	173.4	65.2	54.7
## 102	sedan	fwd	front	100.4	181.7	66.5	55.1
## 103	wagon	fwd	front	100.4	184.6	66.5	56.1
## 104	sedan	fwd	front	100.4	184.6	66.5	55.1
## 105	hatchback	rwd	front	91.3	170.7	67.9	49.7
## 106	hatchback	rwd	front	91.3	170.7	67.9	49.7
## 107	hatchback	rwd	front	99.2	178.5	67.9	49.7
## 108	sedan	rwd	front	107.9	186.7	68.4	56.7
## 109	sedan	rwd	front	107.9	186.7	68.4	56.7
## 110	wagon	rwd	front	114.2	198.9	68.4	58.7
## 111	wagon	rwd	front	114.2	198.9	68.4	58.7
## 112	sedan	rwd	front	107.9	186.7	68.4	56.7
## 113	sedan	rwd	front	107.9	186.7	68.4	56.7
## 114	wagon	rwd	front	114.2	198.9	68.4	56.7
## 115	wagon	rwd	front	114.2	198.9	68.4	58.7
## 116	sedan	rwd	front	107.9	186.7	68.4	56.7
## 117	sedan	rwd	front	107.9	186.7	68.4	56.7
## 118	sedan	rwd	front	108.0	186.7	68.3	56.0
## 119	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 120	hatchback	fwd	front	93.7	157.3	63.8	50.8
## 121	hatchback	fwd	front	93.7	157.3	63.8	50.6
## 122	sedan	fwd	front	93.7	167.3	63.8	50.8
## 123	sedan	fwd	front	93.7	167.3	63.8	50.8
## 124	wagon	fwd	front	103.3	174.6	64.6	59.8
## 125	hatchback	rwd	front	95.9	173.2	66.3	50.2
## 126	hatchback	rwd	front	94.5	168.9	68.3	50.2
## 127	hardtop	rwd	rear	89.5	168.9	65.0	51.6
## 128	hardtop	rwd	rear	89.5	168.9	65.0	51.6
## 129	convertible	rwd	rear	89.5	168.9	65.0	51.6
## 130	hatchback	rwd	front	98.4	175.7	72.3	50.5
## 131	wagon	fwd	front	96.1	181.5	66.5	55.2
## 132	hatchback	fwd	front	96.1	176.8	66.6	50.5
## 133	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 134	sedan	fwd	front	99.1	186.6	66.5	56.1
## 135	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 136	sedan	fwd	front	99.1	186.6	66.5	56.1
## 137	hatchback	fwd	front	99.1	186.6	66.5	56.1
## 138	sedan	fwd	front	99.1	186.6	66.5	56.1
## 139	hatchback	fwd	front	93.7	156.9	63.4	53.7
## 140	hatchback	fwd	front	93.7	157.9	63.6	53.7
## 141	hatchback	4wd	front	93.3	157.3	63.8	55.7
## 142	sedan	fwd	front	97.2	172.0	65.4	52.5
## 143	sedan	fwd	front	97.2	172.0	65.4	52.5
## 144	sedan	fwd	front	97.2	172.0	65.4	52.5
## 145	sedan	4wd	front	97.0	172.0	65.4	54.3
## 146	sedan	4wd	front	97.0	172.0	65.4	54.3
## 147	wagon	fwd	front	97.0	173.5	65.4	53.0
## 148	wagon	fwd	front	97.0	173.5	65.4	53.0
## 149	wagon	4wd	front	96.9	173.6	65.4	54.9
## 150	wagon	4wd	front	96.9	173.6	65.4	54.9

## 151	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 152	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 153	hatchback	fwd	front	95.7	158.7	63.6	54.5
## 154	wagon	fwd	front	95.7	169.7	63.6	59.1
## 155	wagon	4wd	front	95.7	169.7	63.6	59.1
## 156	wagon	4wd	front	95.7	169.7	63.6	59.1
## 157	sedan	fwd	front	95.7	166.3	64.4	53.0
## 158	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 159	sedan	fwd	front	95.7	166.3	64.4	53.0
## 160	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 161	sedan	fwd	front	95.7	166.3	64.4	53.0
## 162	hatchback	fwd	front	95.7	166.3	64.4	52.8
## 163	sedan	fwd	front	95.7	166.3	64.4	52.8
## 164	sedan	rwd	front	94.5	168.7	64.0	52.6
## 165	hatchback	rwd	front	94.5	168.7	64.0	52.6
## 166	sedan	rwd	front	94.5	168.7	64.0	52.6
## 167	hatchback	rwd	front	94.5	168.7	64.0	52.6
## 168	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 169	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 170	hatchback	rwd	front	98.4	176.2	65.6	52.0
## 171	hardtop	rwd	front	98.4	176.2	65.6	52.0
## 172	hatchback	rwd	front	98.4	176.2	65.6	52.0
## 173	convertible	rwd	front	98.4	176.2	65.6	53.0
## 174	sedan	fwd	front	102.4	175.6	66.5	54.9
## 175	sedan	fwd	front	102.4	175.6	66.5	54.9
## 176	hatchback	fwd	front	102.4	175.6	66.5	53.9
## 177	sedan	fwd	front	102.4	175.6	66.5	54.9
## 178	hatchback	fwd	front	102.4	175.6	66.5	53.9
## 179	hatchback	rwd	front	102.9	183.5	67.7	52.0
## 180	hatchback	rwd	front	102.9	183.5	67.7	52.0
## 181	sedan	rwd	front	104.5	187.8	66.5	54.1
## 182	wagon	rwd	front	104.5	187.8	66.5	54.1
## 183	sedan	fwd	front	97.3	171.7	65.5	55.7
## 184	sedan	fwd	front	97.3	171.7	65.5	55.7
## 185	sedan	fwd	front	97.3	171.7	65.5	55.7
## 186	sedan	fwd	front	97.3	171.7	65.5	55.7
## 187	sedan	fwd	front	97.3	171.7	65.5	55.7
## 188	sedan	fwd	front	97.3	171.7	65.5	55.7
## 189	sedan	fwd	front	97.3	171.7	65.5	55.7
## 190	convertible	fwd	front	94.5	159.3	64.2	55.6
## 191	hatchback	fwd	front	94.5	165.7	64.0	51.4
## 192	sedan	fwd	front	100.4	180.2	66.9	55.1
## 193	sedan	fwd	front	100.4	180.2	66.9	55.1
## 194	wagon	fwd	front	100.4	183.1	66.9	55.1
## 195	sedan	rwd	front	104.3	188.8	67.2	56.2
## 196	wagon	rwd	front	104.3	188.8	67.2	57.5
## 197	sedan	rwd	front	104.3	188.8	67.2	56.2
## 198	wagon	rwd	front	104.3	188.8	67.2	57.5
## 199	sedan	rwd	front	104.3	188.8	67.2	56.2
## 200	wagon	rwd	front	104.3	188.8	67.2	57.5
## 201	sedan	rwd	front	109.1	188.8	68.9	55.5

##	202	sedan	rwd	front	109.1	188.8	68.8	55.5
##	203	sedan	rwd	front	109.1	188.8	68.9	55.5
##	204	sedan	rwd	front	109.1	188.8	68.9	55.5
##	205	sedan	rwd	front	109.1	188.8	68.9	55.5
##		curb.weight	engine.type	num.of.cylinders	bore	stroke	compression.ratio	
##	1	2548	dohc	four	3.47	2.68		9.00
##	2	2548	dohc	four	3.47	2.68		9.00
##	3	2823	ohcv	six	2.68	3.47		9.00
##	4	2337	ohc	four	3.19	3.4		10.00
##	5	2824	ohc	five	3.19	3.4		8.00
##	6	2507	ohc	five	3.19	3.4		8.50
##	7	2844	ohc	five	3.19	3.4		8.50
##	8	2954	ohc	five	3.19	3.4		8.50
##	9	3086	ohc	five	3.13	3.4		8.30
##	10	3053	ohc	five	3.13	3.4		7.00
##	11	2395	ohc	four	3.5	2.8		8.80
##	12	2395	ohc	four	3.5	2.8		8.80
##	13	2710	ohc	six	3.31	3.19		9.00
##	14	2765	ohc	six	3.31	3.19		9.00
##	15	3055	ohc	six	3.31	3.19		9.00
##	16	3230	ohc	six	3.62	3.39		8.00
##	17	3380	ohc	six	3.62	3.39		8.00
##	18	3505	ohc	six	3.62	3.39		8.00
##	19	1488	l	three	2.91	3.03		9.50
##	20	1874	ohc	four	3.03	3.11		9.60
##	21	1909	ohc	four	3.03	3.11		9.60
##	22	1876	ohc	four	2.97	3.23		9.41
##	23	1876	ohc	four	2.97	3.23		9.40
##	24	2128	ohc	four	3.03	3.39		7.60
##	25	1967	ohc	four	2.97	3.23		9.40
##	26	1989	ohc	four	2.97	3.23		9.40
##	27	1989	ohc	four	2.97	3.23		9.40
##	28	2191	ohc	four	3.03	3.39		7.60
##	29	2535	ohc	four	3.34	3.46		8.50
##	30	2811	ohc	four	3.6	3.9		7.00
##	31	1713	ohc	four	2.91	3.41		9.60
##	32	1819	ohc	four	2.91	3.41		9.20
##	33	1837	ohc	four	2.91	3.07		10.10
##	34	1940	ohc	four	2.91	3.41		9.20
##	35	1956	ohc	four	2.91	3.41		9.20
##	36	2010	ohc	four	2.91	3.41		9.20
##	37	2024	ohc	four	2.92	3.41		9.20
##	38	2236	ohc	four	3.15	3.58		9.00
##	39	2289	ohc	four	3.15	3.58		9.00
##	40	2304	ohc	four	3.15	3.58		9.00
##	41	2372	ohc	four	3.15	3.58		9.00
##	42	2465	ohc	four	3.15	3.58		9.00
##	43	2293	ohc	four	3.15	3.58		9.10
##	44	2337	ohc	four	3.31	3.23		8.50
##	45	1874	ohc	four	3.03	3.11		9.60
##	46	1909	ohc	four	3.03	3.11		9.60

## 47	2734	ohc	four	3.43	3.23	9.20
## 48	4066	dohc	six	3.63	4.17	8.10
## 49	4066	dohc	six	3.63	4.17	8.10
## 50	3950	ohcv	twelve	3.54	2.76	11.50
## 51	1890	ohc	four	3.03	3.15	9.00
## 52	1900	ohc	four	3.03	3.15	9.00
## 53	1905	ohc	four	3.03	3.15	9.00
## 54	1945	ohc	four	3.03	3.15	9.00
## 55	1950	ohc	four	3.08	3.15	9.00
## 56	2380	rotor	two	?	?	9.40
## 57	2380	rotor	two	?	?	9.40
## 58	2385	rotor	two	?	?	9.40
## 59	2500	rotor	two	?	?	9.40
## 60	2385	ohc	four	3.39	3.39	8.60
## 61	2410	ohc	four	3.39	3.39	8.60
## 62	2385	ohc	four	3.39	3.39	8.60
## 63	2410	ohc	four	3.39	3.39	8.60
## 64	2443	ohc	four	3.39	3.39	22.70
## 65	2425	ohc	four	3.39	3.39	8.60
## 66	2670	ohc	four	3.76	3.16	8.00
## 67	2700	ohc	four	3.43	3.64	22.00
## 68	3515	ohc	five	3.58	3.64	21.50
## 69	3750	ohc	five	3.58	3.64	21.50
## 70	3495	ohc	five	3.58	3.64	21.50
## 71	3770	ohc	five	3.58	3.64	21.50
## 72	3740	ohcv	eight	3.46	3.1	8.30
## 73	3685	ohcv	eight	3.46	3.1	8.30
## 74	3900	ohcv	eight	3.8	3.35	8.00
## 75	3715	ohcv	eight	3.8	3.35	8.00
## 76	2910	ohc	four	3.78	3.12	8.00
## 77	1918	ohc	four	2.97	3.23	9.40
## 78	1944	ohc	four	2.97	3.23	9.40
## 79	2004	ohc	four	2.97	3.23	9.40
## 80	2145	ohc	four	3.03	3.39	7.60
## 81	2370	ohc	four	3.17	3.46	7.50
## 82	2328	ohc	four	3.35	3.46	8.50
## 83	2833	ohc	four	3.58	3.86	7.00
## 84	2921	ohc	four	3.59	3.86	7.00
## 85	2926	ohc	four	3.59	3.86	7.00
## 86	2365	ohc	four	3.35	3.46	8.50
## 87	2405	ohc	four	3.35	3.46	8.50
## 88	2403	ohc	four	3.17	3.46	7.50
## 89	2403	ohc	four	3.17	3.46	7.50
## 90	1889	ohc	four	3.15	3.29	9.40
## 91	2017	ohc	four	2.99	3.47	21.90
## 92	1918	ohc	four	3.15	3.29	9.40
## 93	1938	ohc	four	3.15	3.29	9.40
## 94	2024	ohc	four	3.15	3.29	9.40
## 95	1951	ohc	four	3.15	3.29	9.40
## 96	2028	ohc	four	3.15	3.29	9.40
## 97	1971	ohc	four	3.15	3.29	9.40

## 98	2037	ohc	four	3.15	3.29	9.40
## 99	2008	ohc	four	3.15	3.29	9.40
## 100	2324	ohc	four	3.33	3.47	8.50
## 101	2302	ohc	four	3.33	3.47	8.50
## 102	3095	ohcv	six	3.43	3.27	9.00
## 103	3296	ohcv	six	3.43	3.27	9.00
## 104	3060	ohcv	six	3.43	3.27	9.00
## 105	3071	ohcv	six	3.43	3.27	9.00
## 106	3139	ohcv	six	3.43	3.27	7.80
## 107	3139	ohcv	six	3.43	3.27	9.00
## 108	3020	l	four	3.46	3.19	8.40
## 109	3197	l	four	3.7	3.52	21.00
## 110	3230	l	four	3.46	3.19	8.40
## 111	3430	l	four	3.7	3.52	21.00
## 112	3075	l	four	3.46	2.19	8.40
## 113	3252	l	four	3.7	3.52	21.00
## 114	3285	l	four	3.46	2.19	8.40
## 115	3485	l	four	3.7	3.52	21.00
## 116	3075	l	four	3.46	3.19	8.40
## 117	3252	l	four	3.7	3.52	21.00
## 118	3130	l	four	3.61	3.21	7.00
## 119	1918	ohc	four	2.97	3.23	9.40
## 120	2128	ohc	four	3.03	3.39	7.60
## 121	1967	ohc	four	2.97	3.23	9.40
## 122	1989	ohc	four	2.97	3.23	9.40
## 123	2191	ohc	four	2.97	3.23	9.40
## 124	2535	ohc	four	3.35	3.46	8.50
## 125	2818	ohc	four	3.59	3.86	7.00
## 126	2778	ohc	four	3.94	3.11	9.50
## 127	2756	ohcf	six	3.74	2.9	9.50
## 128	2756	ohcf	six	3.74	2.9	9.50
## 129	2800	ohcf	six	3.74	2.9	9.50
## 130	3366	dohcv	eight	3.94	3.11	10.00
## 131	2579	ohc	four	3.46	3.9	8.70
## 132	2460	ohc	four	3.46	3.9	8.70
## 133	2658	ohc	four	3.54	3.07	9.31
## 134	2695	ohc	four	3.54	3.07	9.30
## 135	2707	ohc	four	2.54	2.07	9.30
## 136	2758	ohc	four	3.54	3.07	9.30
## 137	2808	dohc	four	3.54	3.07	9.00
## 138	2847	dohc	four	3.54	3.07	9.00
## 139	2050	ohcf	four	3.62	2.36	9.00
## 140	2120	ohcf	four	3.62	2.64	8.70
## 141	2240	ohcf	four	3.62	2.64	8.70
## 142	2145	ohcf	four	3.62	2.64	9.50
## 143	2190	ohcf	four	3.62	2.64	9.50
## 144	2340	ohcf	four	3.62	2.64	9.00
## 145	2385	ohcf	four	3.62	2.64	9.00
## 146	2510	ohcf	four	3.62	2.64	7.70
## 147	2290	ohcf	four	3.62	2.64	9.00
## 148	2455	ohcf	four	3.62	2.64	9.00

## 149	2420	ohcf	four	3.62	2.64	9.00
## 150	2650	ohcf	four	3.62	2.64	7.70
## 151	1985	ohc	four	3.05	3.03	9.00
## 152	2040	ohc	four	3.05	3.03	9.00
## 153	2015	ohc	four	3.05	3.03	9.00
## 154	2280	ohc	four	3.05	3.03	9.00
## 155	2290	ohc	four	3.05	3.03	9.00
## 156	3110	ohc	four	3.05	3.03	9.00
## 157	2081	ohc	four	3.19	3.03	9.00
## 158	2109	ohc	four	3.19	3.03	9.00
## 159	2275	ohc	four	3.27	3.35	22.50
## 160	2275	ohc	four	3.27	3.35	22.50
## 161	2094	ohc	four	3.19	3.03	9.00
## 162	2122	ohc	four	3.19	3.03	9.00
## 163	2140	ohc	four	3.19	3.03	9.00
## 164	2169	ohc	four	3.19	3.03	9.00
## 165	2204	ohc	four	3.19	3.03	9.00
## 166	2265	dohc	four	3.24	3.08	9.40
## 167	2300	dohc	four	3.24	3.08	9.40
## 168	2540	ohc	four	3.62	3.5	9.30
## 169	2536	ohc	four	3.62	3.5	9.30
## 170	2551	ohc	four	3.62	3.5	9.30
## 171	2679	ohc	four	3.62	3.5	9.30
## 172	2714	ohc	four	3.62	3.5	9.30
## 173	2975	ohc	four	3.62	3.5	9.30
## 174	2326	ohc	four	3.31	3.54	8.70
## 175	2480	ohc	four	3.27	3.35	22.50
## 176	2414	ohc	four	3.31	3.54	8.70
## 177	2414	ohc	four	3.31	3.54	8.70
## 178	2458	ohc	four	3.31	3.54	8.70
## 179	2976	dohc	six	3.27	3.35	9.30
## 180	3016	dohc	six	3.27	3.35	9.30
## 181	3131	dohc	six	3.27	3.35	9.20
## 182	3151	dohc	six	3.27	3.35	9.20
## 183	2261	ohc	four	3.01	3.4	23.00
## 184	2209	ohc	four	3.19	3.4	9.00
## 185	2264	ohc	four	3.01	3.4	23.00
## 186	2212	ohc	four	3.19	3.4	9.00
## 187	2275	ohc	four	3.19	3.4	9.00
## 188	2319	ohc	four	3.01	3.4	23.00
## 189	2300	ohc	four	3.19	3.4	10.00
## 190	2254	ohc	four	3.19	3.4	8.50
## 191	2221	ohc	four	3.19	3.4	8.50
## 192	2661	ohc	five	3.19	3.4	8.50
## 193	2579	ohc	four	3.01	3.4	23.00
## 194	2563	ohc	four	3.19	3.4	9.00
## 195	2912	ohc	four	3.78	3.15	9.50
## 196	3034	ohc	four	3.78	3.15	9.50
## 197	2935	ohc	four	3.78	3.15	9.50
## 198	3042	ohc	four	3.78	3.15	9.50
## 199	3045	ohc	four	3.62	3.15	7.50

## 200	3157	ohc	four	3.62	3.15	7.50
## 201	2952	ohc	four	3.78	3.15	9.50
## 202	3049	ohc	four	3.78	3.15	8.70
## 203	3012	ohcv	six	3.58	2.87	8.80
## 204	3217	ohc	six	3.01	3.4	23.00
## 205	3062	ohc	four	3.78	3.15	9.50
##	horsepower	peak.rpm	city.mpg	highway.mpg	price	
## 1	111	5000	21	27	13495	
## 2	111	5000	21	27	16500	
## 3	154	5000	19	26	16500	
## 4	102	5500	24	30	13950	
## 5	115	5500	18	22	17450	
## 6	110	5500	19	25	15250	
## 7	110	5500	19	25	17710	
## 8	110	5500	19	25	18920	
## 9	140	5500	17	20	23875	
## 10	160	5500	16	22	?	
## 11	101	5800	23	29	16430	
## 12	101	5800	23	29	16925	
## 13	121	4250	21	28	20970	
## 14	121	4250	21	28	21105	
## 15	121	4250	20	25	24565	
## 16	182	5400	16	22	30760	
## 17	182	5400	16	22	41315	
## 18	182	5400	15	20	36880	
## 19	48	5100	47	53	5151	
## 20	70	5400	38	43	6295	
## 21	70	5400	38	43	6575	
## 22	68	5500	37	41	5572	
## 23	68	5500	31	38	6377	
## 24	102	5500	24	30	7957	
## 25	68	5500	31	38	6229	
## 26	68	5500	31	38	6692	
## 27	68	5500	31	38	7609	
## 28	102	5500	24	30	8558	
## 29	88	5000	24	30	8921	
## 30	145	5000	19	24	12964	
## 31	58	4800	49	54	6479	
## 32	76	6000	31	38	6855	
## 33	60	5500	38	42	5399	
## 34	76	6000	30	34	6529	
## 35	76	6000	30	34	7129	
## 36	76	6000	30	34	7295	
## 37	76	6000	30	34	7295	
## 38	86	5800	27	33	7895	
## 39	86	5800	27	33	9095	
## 40	86	5800	27	33	8845	
## 41	86	5800	27	33	10295	
## 42	101	5800	24	28	12945	
## 43	100	5500	25	31	10345	
## 44	78	4800	24	29	6785	

## 45	70	5400	38	43	?
## 46	70	5400	38	43	?
## 47	90	5000	24	29	11048
## 48	176	4750	15	19	32250
## 49	176	4750	15	19	35550
## 50	262	5000	13	17	36000
## 51	68	5000	30	31	5195
## 52	68	5000	31	38	6095
## 53	68	5000	31	38	6795
## 54	68	5000	31	38	6695
## 55	68	5000	31	38	7395
## 56	101	6000	17	23	10945
## 57	101	6000	17	23	11845
## 58	101	6000	17	23	13645
## 59	135	6000	16	23	15645
## 60	84	4800	26	32	8845
## 61	84	4800	26	32	8495
## 62	84	4800	26	32	10595
## 63	84	4800	26	32	10245
## 64	64	4650	36	42	10795
## 65	84	4800	26	32	11245
## 66	120	5000	19	27	18280
## 67	72	4200	31	39	18344
## 68	123	4350	22	25	25552
## 69	123	4350	22	25	28248
## 70	123	4350	22	25	28176
## 71	123	4350	22	25	31600
## 72	155	4750	16	18	34184
## 73	155	4750	16	18	35056
## 74	184	4500	14	16	40960
## 75	184	4500	14	16	45400
## 76	175	5000	19	24	16503
## 77	68	5500	37	41	5389
## 78	68	5500	31	38	6189
## 79	68	5500	31	38	6669
## 80	102	5500	24	30	7689
## 81	116	5500	23	30	9959
## 82	88	5000	25	32	8499
## 83	145	5000	19	24	12629
## 84	145	5000	19	24	14869
## 85	145	5000	19	24	14489
## 86	88	5000	25	32	6989
## 87	88	5000	25	32	8189
## 88	116	5500	23	30	9279
## 89	116	5500	23	30	9279
## 90	69	5200	31	37	5499
## 91	55	4800	45	50	7099
## 92	69	5200	31	37	6649
## 93	69	5200	31	37	6849
## 94	69	5200	31	37	7349
## 95	69	5200	31	37	7299

## 96	69	5200	31	37	7799
## 97	69	5200	31	37	7499
## 98	69	5200	31	37	7999
## 99	69	5200	31	37	8249
## 100	97	5200	27	34	8949
## 101	97	5200	27	34	9549
## 102	152	5200	17	22	13499
## 103	152	5200	17	22	14399
## 104	152	5200	19	25	13499
## 105	160	5200	19	25	17199
## 106	200	5200	17	23	19699
## 107	160	5200	19	25	18399
## 108	97	5000	19	24	11900
## 109	95	4150	28	33	13200
## 110	97	5000	19	24	12440
## 111	95	4150	25	25	13860
## 112	95	5000	19	24	15580
## 113	95	4150	28	33	16900
## 114	95	5000	19	24	16695
## 115	95	4150	25	25	17075
## 116	97	5000	19	24	16630
## 117	95	4150	28	33	17950
## 118	142	5600	18	24	18150
## 119	68	5500	37	41	5572
## 120	102	5500	24	30	7957
## 121	68	5500	31	38	6229
## 122	68	5500	31	38	6692
## 123	68	5500	31	38	7609
## 124	88	5000	24	30	8921
## 125	145	5000	19	24	12764
## 126	143	5500	19	27	22018
## 127	207	5900	17	25	32528
## 128	207	5900	17	25	34028
## 129	207	5900	17	25	37028
## 130	288	5750	17	28	?
## 131	?	?	23	31	9295
## 132	?	?	23	31	9895
## 133	110	5250	21	28	11850
## 134	110	5250	21	28	12170
## 135	110	5250	21	28	15040
## 136	110	5250	21	28	15510
## 137	160	5500	19	26	18150
## 138	160	5500	19	26	18620
## 139	69	4900	31	36	5118
## 140	73	4400	26	31	7053
## 141	73	4400	26	31	7603
## 142	82	4800	32	37	7126
## 143	82	4400	28	33	7775
## 144	94	5200	26	32	9960
## 145	82	4800	24	25	9233
## 146	111	4800	24	29	11259

## 147	82	4800	28	32	7463
## 148	94	5200	25	31	10198
## 149	82	4800	23	29	8013
## 150	111	4800	23	23	11694
## 151	62	4800	35	39	5348
## 152	62	4800	31	38	6338
## 153	62	4800	31	38	6488
## 154	62	4800	31	37	6918
## 155	62	4800	27	32	7898
## 156	62	4800	27	32	8778
## 157	70	4800	30	37	6938
## 158	70	4800	30	37	7198
## 159	56	4500	34	36	7898
## 160	56	4500	38	47	7788
## 161	70	4800	38	47	7738
## 162	70	4800	28	34	8358
## 163	70	4800	28	34	9258
## 164	70	4800	29	34	8058
## 165	70	4800	29	34	8238
## 166	112	6600	26	29	9298
## 167	112	6600	26	29	9538
## 168	116	4800	24	30	8449
## 169	116	4800	24	30	9639
## 170	116	4800	24	30	9989
## 171	116	4800	24	30	11199
## 172	116	4800	24	30	11549
## 173	116	4800	24	30	17669
## 174	92	4200	29	34	8948
## 175	73	4500	30	33	10698
## 176	92	4200	27	32	9988
## 177	92	4200	27	32	10898
## 178	92	4200	27	32	11248
## 179	161	5200	20	24	16558
## 180	161	5200	19	24	15998
## 181	156	5200	20	24	15690
## 182	156	5200	19	24	15750
## 183	52	4800	37	46	7775
## 184	85	5250	27	34	7975
## 185	52	4800	37	46	7995
## 186	85	5250	27	34	8195
## 187	85	5250	27	34	8495
## 188	68	4500	37	42	9495
## 189	100	5500	26	32	9995
## 190	90	5500	24	29	11595
## 191	90	5500	24	29	9980
## 192	110	5500	19	24	13295
## 193	68	4500	33	38	13845
## 194	88	5500	25	31	12290
## 195	114	5400	23	28	12940
## 196	114	5400	23	28	13415
## 197	114	5400	24	28	15985

## 198	114	5400	24	28 16515
## 199	162	5100	17	22 18420
## 200	162	5100	17	22 18950
## 201	114	5400	23	28 16845
## 202	160	5300	19	25 19045
## 203	134	5500	18	23 21485
## 204	106	4800	26	27 22470
## 205	114	5400	19	25 22625

```
#7.Delete the column fuel-system, bore from the dataset by Select function from dplyr library
. (select)
#dataset_selected<-datasets %>% select(-fuel-system,-bore)
#dataset_selected
#8.Show the summary statistics of the dataset (summary)
summary(datasets)
```

```

##      symboling      normalized.losses      make      fuel.type
## Min.      :-2.0000      Length:205      Length:205      Length:205
## 1st Qu.: 0.0000      Class :character      Class :character      Class :character
## Median : 1.0000      Mode  :character      Mode  :character      Mode  :character
## Mean      : 0.8341
## 3rd Qu.: 2.0000
## Max.      : 3.0000
##      aspiration      num.of.doors      body.style      drive.wheels
## Length:205      Length:205      Length:205      Length:205
## Class :character      Class :character      Class :character      Class :character
## Mode  :character      Mode  :character      Mode  :character      Mode  :character
##
##
##
##      engine.location      wheel.base      length      width
## Length:205      Min.      : 86.60      Min.      :141.1      Min.      :60.30
## Class :character      1st Qu.: 94.50      1st Qu.:166.3      1st Qu.:64.10
## Mode  :character      Median : 97.00      Median :173.2      Median :65.50
##      Mean      : 98.76      Mean      :174.0      Mean      :65.91
##      3rd Qu.:102.40      3rd Qu.:183.1      3rd Qu.:66.90
##      Max.      :120.90      Max.      :208.1      Max.      :72.30
##      height      curb.weight      engine.type      num.of.cylinders
## Min.      :47.80      Min.      :1488      Length:205      Length:205
## 1st Qu.:52.00      1st Qu.:2145      Class :character      Class :character
## Median :54.10      Median :2414      Mode  :character      Mode  :character
## Mean      :53.72      Mean      :2556
## 3rd Qu.:55.50      3rd Qu.:2935
## Max.      :59.80      Max.      :4066
##      engine.size      fuel.system      bore      stroke
## Min.      : 61.0      Length:205      Length:205      Length:205
## 1st Qu.: 97.0      Class :character      Class :character      Class :character
## Median :120.0      Mode  :character      Mode  :character      Mode  :character
## Mean      :126.9
## 3rd Qu.:141.0
## Max.      :326.0
##      compression.ratio      horsepower      peak.rpm      city.mpg
## Min.      : 7.00      Length:205      Length:205      Min.      :13.00
## 1st Qu.: 8.60      Class :character      Class :character      1st Qu.:19.00
## Median : 9.00      Mode  :character      Mode  :character      Median :24.00
## Mean      :10.14
## 3rd Qu.: 9.40
## Max.      :23.00
##      highway.mpg      price
## Min.      :16.00      Length:205
## 1st Qu.:25.00      Class :character
## Median :30.00      Mode  :character
## Mean      :30.75
## 3rd Qu.:34.00
## Max.      :54.00

```

```
#9.#Data Cleaning -
```

```
#Find out the number of values that are not numeric in 'Price', 'horsepower', and 'normalized-losses'
```

```
#Setting the missing value to the mean of price and converting the datatype to a numeric
```

```
non_numeric_price<- sum(!is.numeric(datasets$price))
```

```
non_numeric_price
```

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

```
non_numeric_horsepower<- sum(!is.numeric(datasets$horsepower))
```

```
non_numeric_horsepower
```

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

```
non_numeric_normalized<- sum(!is.numeric(datasets$`normalized-losses`))
```

```
non_numeric_normalized
```

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

```
datasets$price<-as.numeric(datasets$price)
```

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

```
mean_price<-mean(datasets$price,na.rm=TRUE)
```

```
datasets$price[is.na(datasets$price)]<-mean_price
```

```
mean_price
```

```
## [1] 13207.13
```

```
#10.Compute the measure of the central tendency of the height column (mean, median, mode)
```

```
mean_height<-mean(datasets$height,na.rm=TRUE)
```

```
mean_height
```

```
## [1] 53.72488
```

```
median_height<-median(datasets$height,na.rm = TRUE)
```

```
median_height
```

```
## [1] 54.1
```

```
get_mode<-function(v){  
  uniq_vals<-unique(v)  
  uniq_vals[which.max(tabulate(match(v,uniq_vals)))]  
}  
mode_height<-get_mode(datasets$height)  
mode_height
```

```
## [1] 50.8
```

```
#11.Compute the measure of dispersion of the height column (Standard Deviation, Variance)  
sd_height<-sd(datasets$height,na.rm=TRUE)  
sd_height
```

```
## [1] 2.443522
```

```
var_height<-var(datasets$height,na.rm=TRUE)  
var_height
```

```
## [1] 5.9708
```

```
#12.Compute the quartile ranges and IQR of the height column.  
quartiles_height<-quantile(datasets$height,probs=c(0.25,0.5,0.75),na.rm=TRUE)  
quartiles_height
```

```
## 25% 50% 75%  
## 52.0 54.1 55.5
```

```
IQR_height<-IQR(datasets$height,na.rm=TRUE)  
IQR_height
```

```
## [1] 3.5
```

```
#13.Calculate the correlation between the price and horsepower. (cor)  
datasets$horsepower<-as.numeric(datasets$horsepower)
```

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

```
datasets$price<-as.numeric(datasets$price)  
  
correlation<-cor(datasets$price,datasets$horsepower,use="complete.obs")  
correlation
```



```
## [1] 0.7587142
```

```
#14.Univariate Analysis (For all plot methods include Label and Main title - All title should  
be your Rno. followed by title eg. 23BDS0001 - Price distribution plot)
```

```
#Distribution plot: histogram for height (hist and ggplot)
```

```
#Distribution plot histogram for price (hist and ggplot)
```

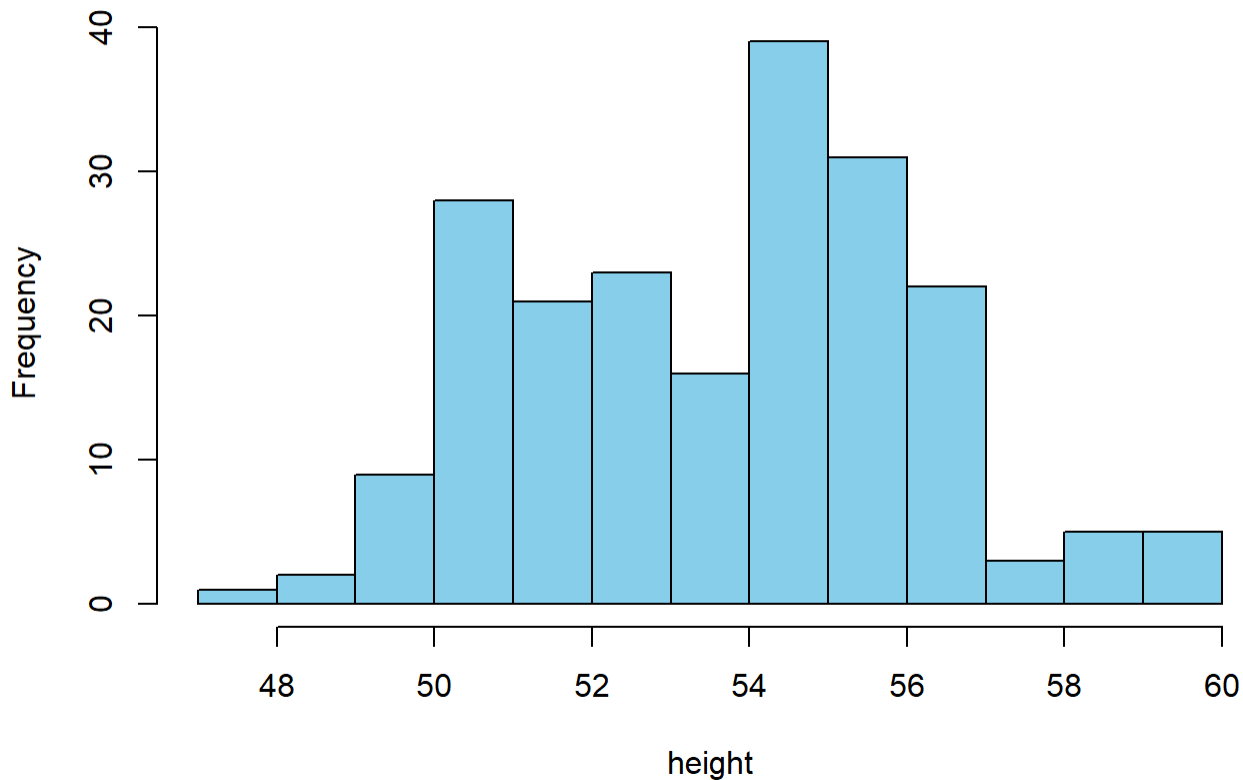
```
#Distribution plot density for price (density, ggplot)
```

```
#Distribution plot hist and density for price (hist, lines(density), ggplot)
```

```
#Box plot for price (boxplot, ggplot)
```

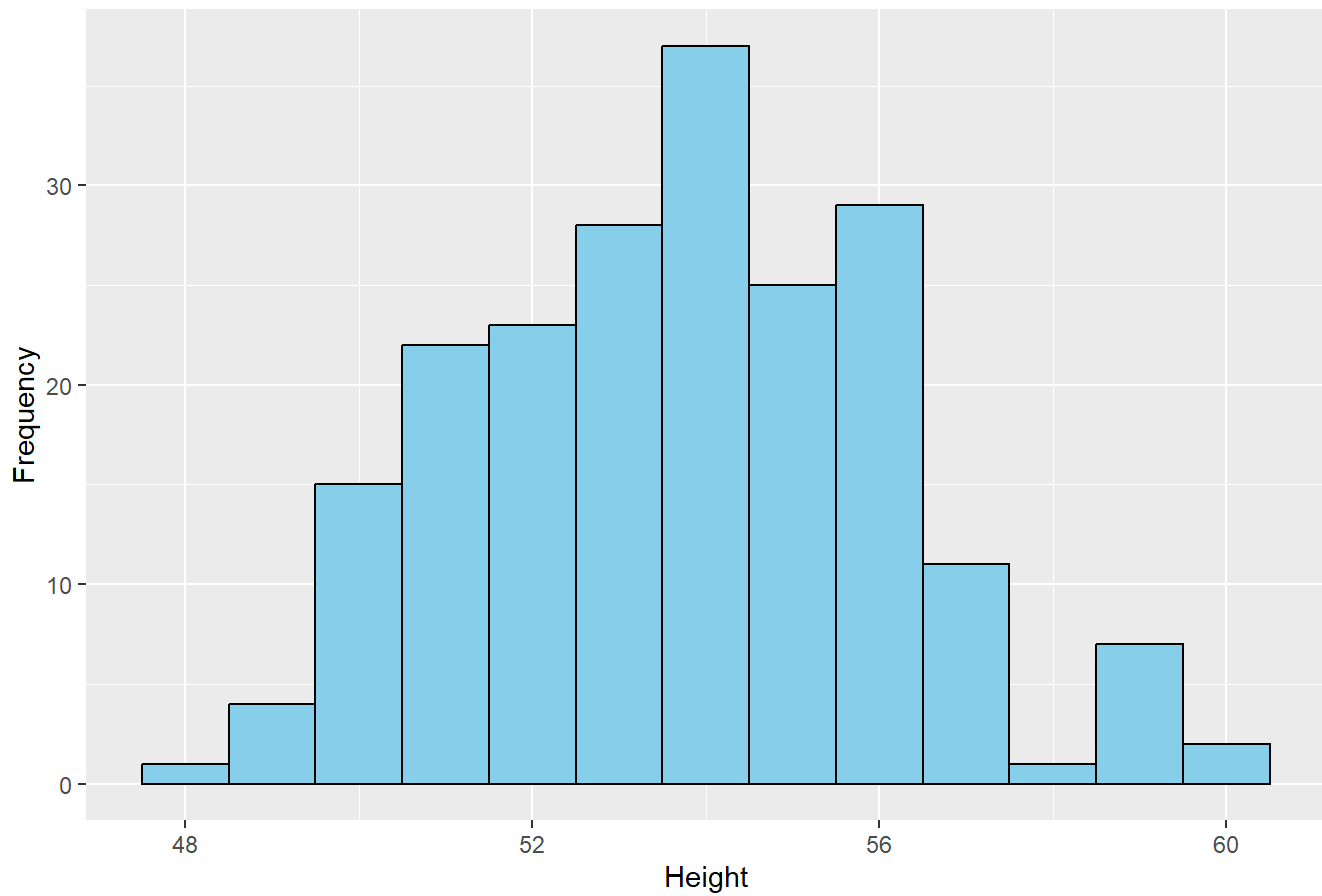
```
hist(datasets$height,main = "22BCE0476 -Height Distribution histogram",xlab="height",ylab =  
"Frequency",col="skyblue",border="black")
```

22BCE0476 -Height Distribution histogram



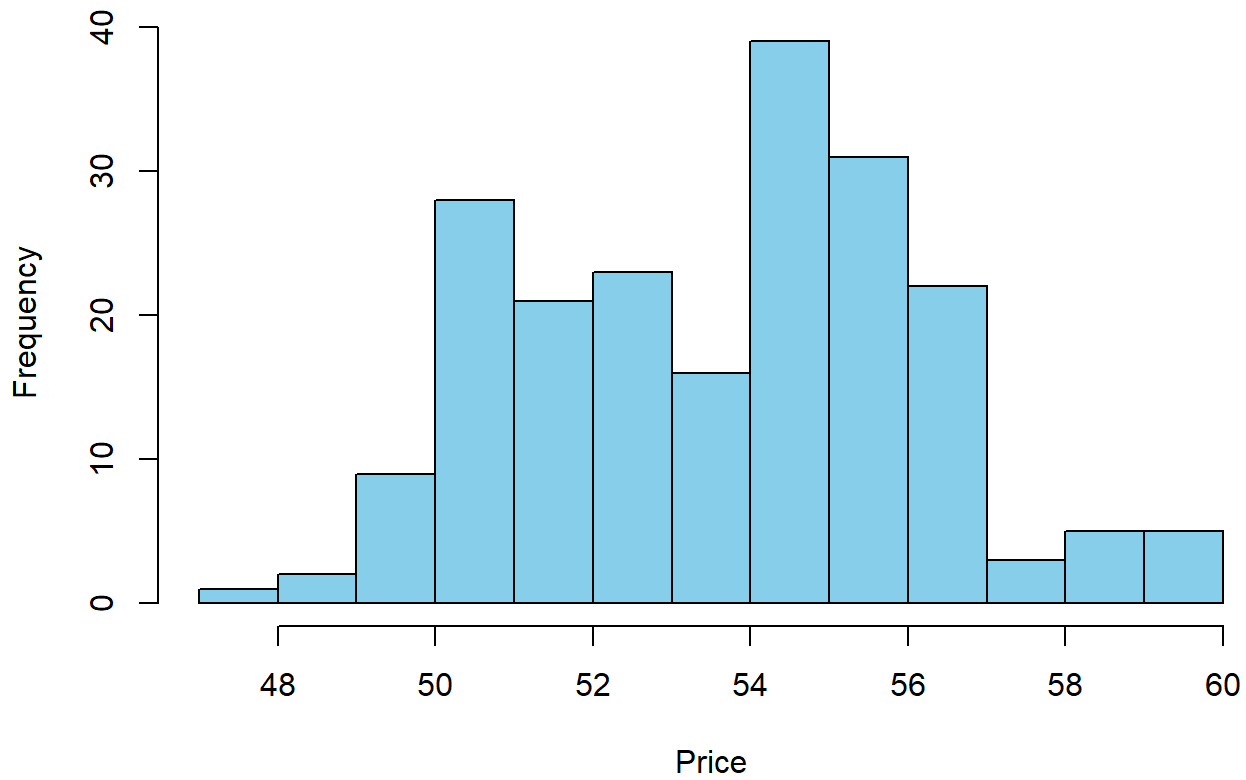
```
ggplot(datasets,aes(x=height))+geom_histogram(binwidth=1,fill="skyblue",color="black")+labs(t  
itle="22BCE0476 -Height Distribution Histogram",x="Height",y="Frequency")
```

22BCE0476 -Height Distribution Histogram



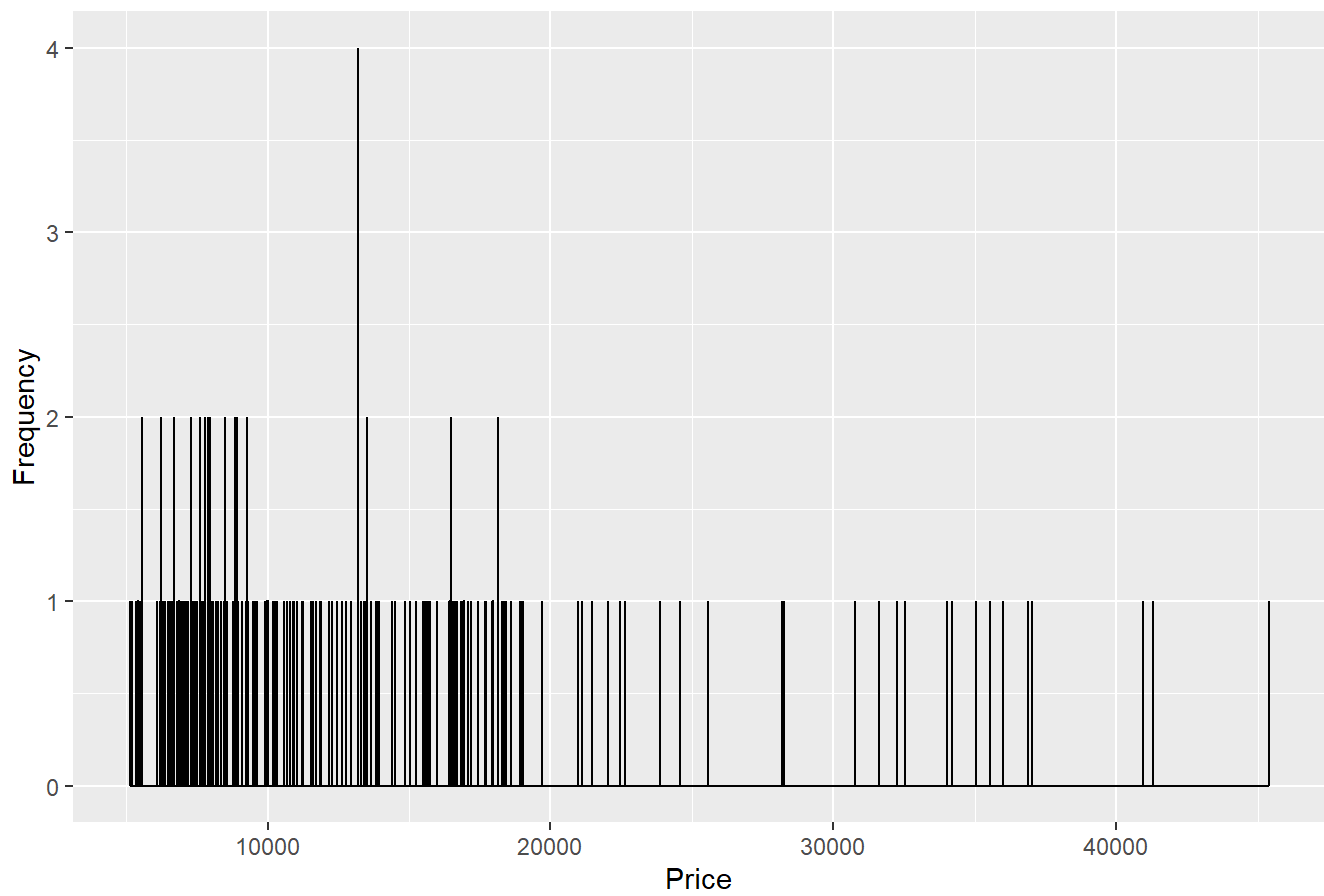
```
hist(datasets$height,main = "22BCE0476 -Price Distribution histogram",xlab="Price",ylab = "Frequency",col="skyblue",border="black")
```

22BCE0476 -Price Distribution histogram



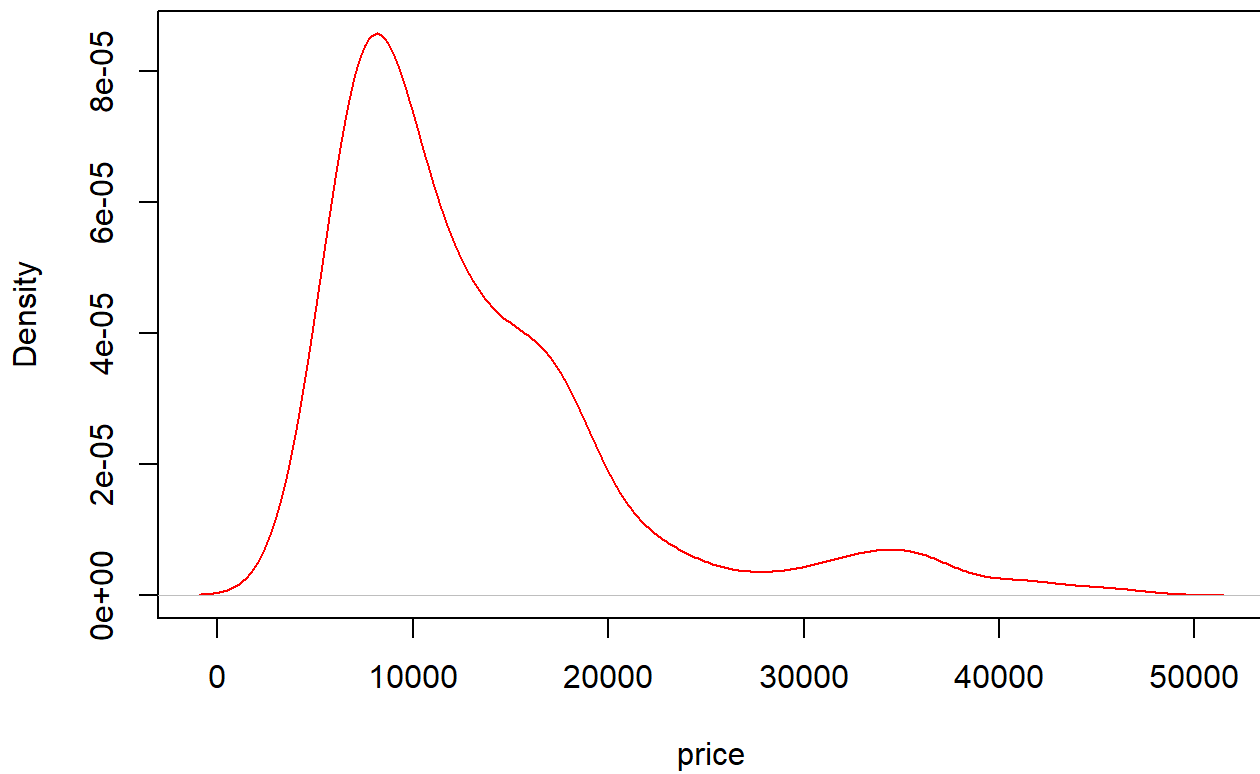
```
ggplot(datasets,aes(x=price))+geom_histogram(binwidth=1,fill="skyblue",color="black")+labs(title="22BCE0476 -Price Distribution Histogram",x="Price",y="Frequency")
```

22BCE0476 -Price Distribution Histogram



```
plot(density(datasets$price,na.rm=TRUE),main="22BCE0476 -price density plot",xlab="price",ylab="Density",col="red")
```

22BCE0476 -price density plot



```
ggplot(datasets,aes(x=price))+geom_density(fill='red',alpha=0.5)+labs(title = "22bce0476 - price density plot",x="Price",y="Density")
```

