

LV4

ggplot2 Package

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Libraries

```
library(tidyverse)
```

1 Overview

- Plotting different data variables in graphs
- using ggplot2 package

2 Data

- `disp` means displacement in in³
- `wt` means weight in 1000 lbs

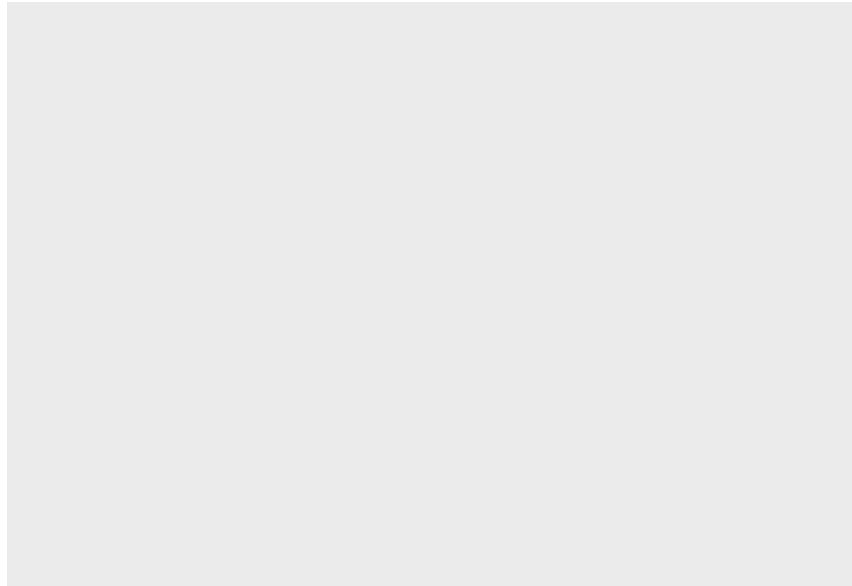
```
# ?mtcars
mtcars %>% knitr::kable(caption = "Data for Visualisation")
```

Table 1: Data for Visualisation

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4
Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4
Merc 280C	17.8	6	167.6	123	3.92	3.440	18.90	1	0	4	4
Merc 450SE	16.4	8	275.8	180	3.07	4.070	17.40	0	0	3	3
Merc 450SL	17.3	8	275.8	180	3.07	3.730	17.60	0	0	3	3
Merc 450SLC	15.2	8	275.8	180	3.07	3.780	18.00	0	0	3	3
Cadillac Fleetwood	10.4	8	472.0	205	2.93	5.250	17.98	0	0	3	4
Lincoln Continental	10.4	8	460.0	215	3.00	5.424	17.82	0	0	3	4
Chrysler Imperial	14.7	8	440.0	230	3.23	5.345	17.42	0	0	3	4
Fiat 128	32.4	4	78.7	66	4.08	2.200	19.47	1	1	4	1
Honda Civic	30.4	4	75.7	52	4.93	1.615	18.52	1	1	4	2
Toyota Corolla	33.9	4	71.1	65	4.22	1.835	19.90	1	1	4	1
Toyota Corona	21.5	4	120.1	97	3.70	2.465	20.01	1	0	3	1
Dodge Challenger	15.5	8	318.0	150	2.76	3.520	16.87	0	0	3	2
AMC Javelin	15.2	8	304.0	150	3.15	3.435	17.30	0	0	3	2
Camaro Z28	13.3	8	350.0	245	3.73	3.840	15.41	0	0	3	4
Pontiac Firebird	19.2	8	400.0	175	3.08	3.845	17.05	0	0	3	2
Fiat X1-9	27.3	4	79.0	66	4.08	1.935	18.90	1	1	4	1
Porsche 914-2	26.0	4	120.3	91	4.43	2.140	16.70	0	1	5	2
Lotus Europa	30.4	4	95.1	113	3.77	1.513	16.90	1	1	5	2
Ford Pantera L	15.8	8	351.0	264	4.22	3.170	14.50	0	1	5	4
Ferrari Dino	19.7	6	145.0	175	3.62	2.770	15.50	0	1	5	6
Maserati Bora	15.0	8	301.0	335	3.54	3.570	14.60	0	1	5	8
Volvo 142E	21.4	4	121.0	109	4.11	2.780	18.60	1	1	4	2

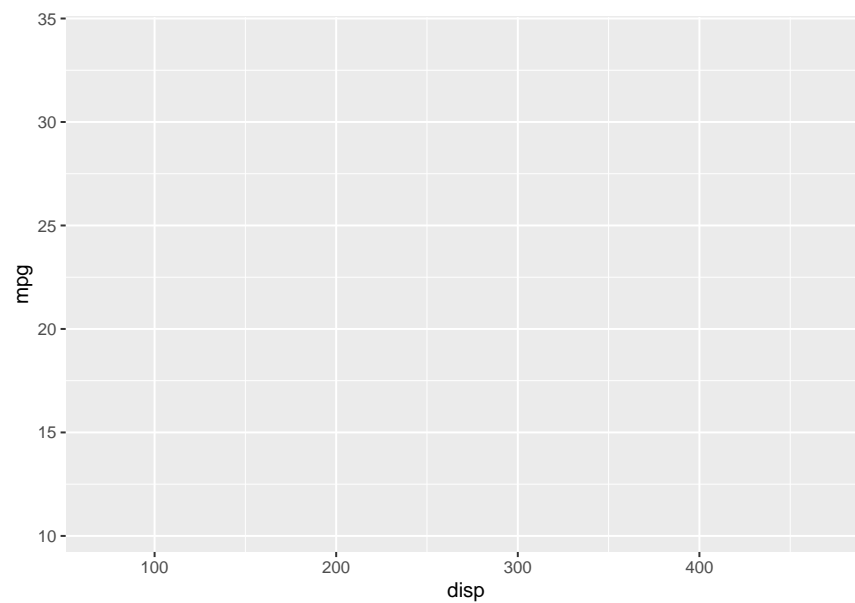
3 Using ggplot Framework

```
ggplot(mtcars)
```



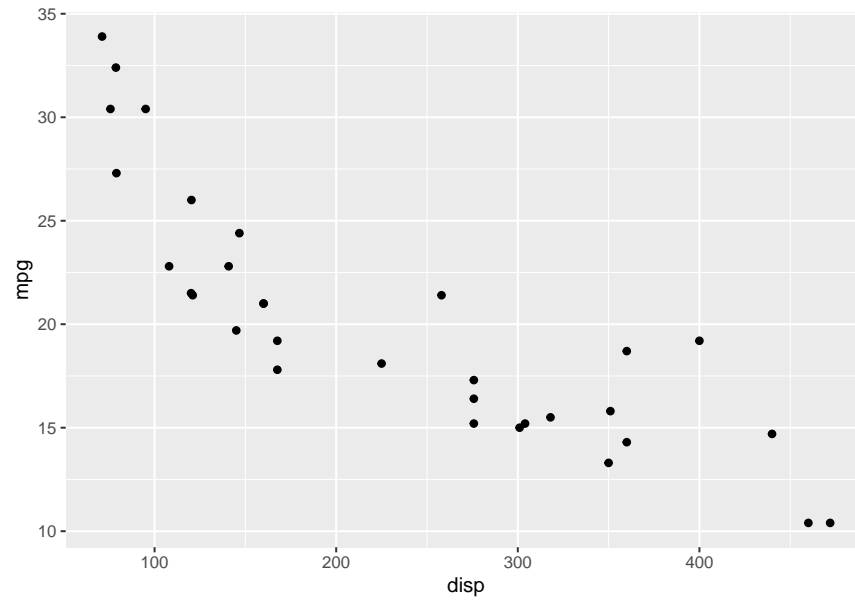
3.1 Add aesthetics

```
g <- mtcars %>% ggplot(aes(x=disp,y=mpg))  
g
```



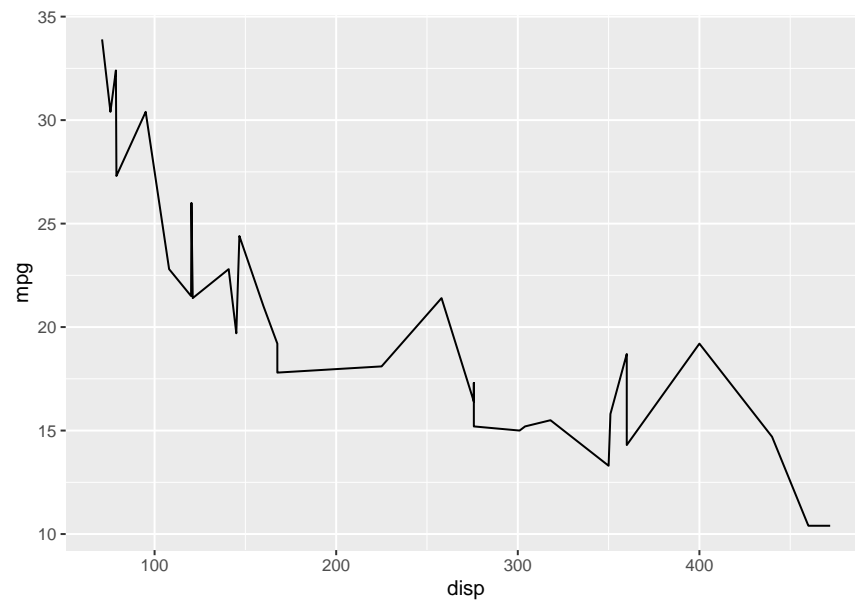
3.2 Add Datapoints

```
g + geom_point()
```



3.3 Add Line

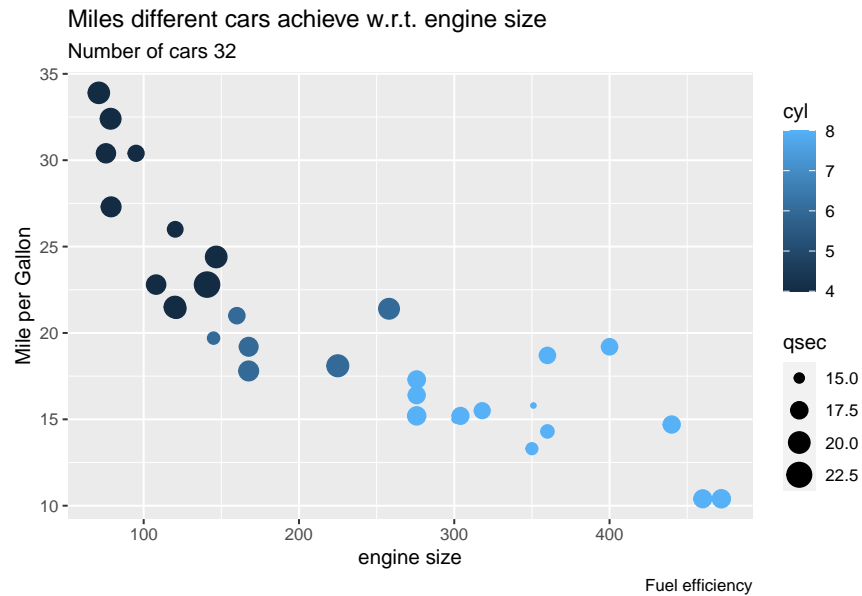
```
g + geom_line() # Note - not very useful
```



3.4 Add more variables

```
g <- mtcars %>% rownames_to_column("car_name") %>% as_tibble() %>% ggplot(aes(x=disp,y=mpg)) + geom_point() +
  xlab("engine size") +
  ylab("Mile per Gallon") +
```

```
labs(caption = "Fuel efficiency", title = "Miles different cars achieve w.r.t. engine size", subtitle =
  #geom_text(aes(label = car_name)) # Add text to points
g
```

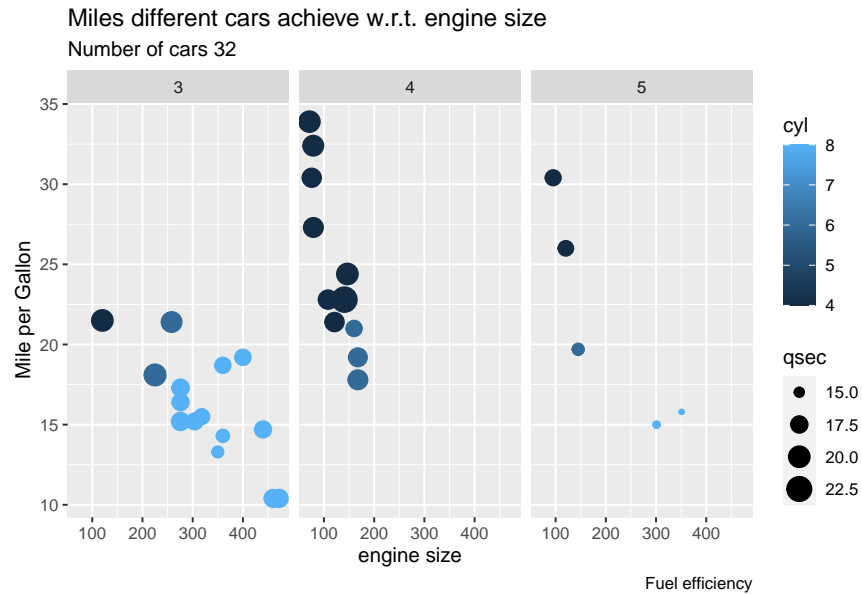


3.4.1 Interpretation

- Engine Size and miles per gallon have a relation
 - the higher the engine size the lower a car can travel per gallon
- bigger engine size goes together with a larger number of cylinders
- very small engine size have high qsec

3.5 facets

```
g + facet_wrap(~gear)
```



4 Exercise

Exercise:

Using the UScereal data from the MASS package, visualize the relationship of calories, sugars and fat. Additionally, highlight whether the product has been enriched with vitamins. Use appropriate titles and legends.

Exercise:

As an extension to the previous plot, show the information separately for each manufacturer, using facets. Similarly, create a plot for the shelves using groups.

4.1 Data UScereal

```
data(UScereal, package = "MASS")
UScereal
```

	mfr	calories	protein	fat
## 100% Bran	N	212.12121	12.1212121	3.0303030
## All-Bran	K	212.12121	12.1212121	3.0303030
## All-Bran with Extra Fiber	K	100.00000	8.0000000	0.0000000
## Apple Cinnamon Cheerios	G	146.66667	2.6666667	2.6666667
## Apple Jacks	K	110.00000	2.0000000	0.0000000
## Basic 4	G	173.33333	4.0000000	2.6666667
## Bran Chex	R	134.32836	2.9850746	1.4925373
## Bran Flakes	P	134.32836	4.4776119	0.0000000
## Cap'n'Crunch	Q	160.00000	1.3333333	2.6666667
## Cheerios	G	88.00000	4.8000000	1.6000000
## Cinnamon Toast Crunch	G	160.00000	1.3333333	4.0000000
## Clusters	G	220.00000	6.0000000	4.0000000
## Cocoa Puffs	G	110.00000	1.0000000	1.0000000
## Corn Chex	R	110.00000	2.0000000	0.0000000

## Corn Flakes	K	100.00000	2.0000000	0.0000000
## Corn Pops	K	110.00000	1.0000000	0.0000000
## Count Chocula	G	110.00000	1.0000000	1.0000000
## Cracklin' Oat Bran	K	220.00000	6.0000000	6.0000000
## Crispix	K	110.00000	2.0000000	0.0000000
## Crispy Wheat & Raisins	G	133.33333	2.6666667	1.3333333
## Double Chex	R	133.33333	2.6666667	0.0000000
## Froot Loops	K	110.00000	2.0000000	1.0000000
## Frosted Flakes	K	146.66667	1.3333333	0.0000000
## Frosted Mini-Wheats	K	125.00000	3.7500000	0.0000000
## Fruit & Fibre: Dates Walnuts and Oats	P	179.10448	4.4776119	2.9850746
## Fruitful Bran	K	179.10448	4.4776119	0.0000000
## Fruity Pebbles	P	146.66667	1.3333333	1.3333333
## Golden Crisp	P	113.63636	2.2727273	0.0000000
## Golden Grahams	G	146.66667	1.3333333	1.3333333
## Grape Nuts Flakes	P	113.63636	3.4090909	1.1363636
## Grape-Nuts	P	440.00000	12.0000000	0.0000000
## Great Grains Pecan	P	363.63636	9.0909091	9.0909091
## Honey Graham Ohs	Q	120.00000	1.0000000	2.0000000
## Honey Nut Cheerios	G	146.66667	4.0000000	1.3333333
## Honey-comb	P	82.70677	0.7518797	0.0000000
## Just Right Fruit & Nut	K	186.66667	4.0000000	1.3333333
## Kix	G	73.33333	1.3333333	0.6666667
## Life	Q	149.25373	5.9701493	2.9850746
## Lucky Charms	G	110.00000	2.0000000	1.0000000
## Mueslix Crispy Blend	K	238.80597	4.4776119	2.9850746
## Multi-Grain Cheerios	G	100.00000	2.0000000	1.0000000
## Nut&Honey Crunch	K	179.10448	2.9850746	1.4925373
## Nutri-Grain Almond-Raisin	K	208.95522	4.4776119	2.9850746
## Oatmeal Raisin Crisp	G	260.00000	6.0000000	4.0000000
## Post Nat. Raisin Bran	P	179.10448	4.4776119	1.4925373
## Product 19	K	100.00000	3.0000000	0.0000000
## Puffed Rice	Q	50.00000	1.0000000	0.0000000
## Quaker Oat Squares	Q	200.00000	8.0000000	2.0000000
## Raisin Bran	K	160.00000	4.0000000	1.3333333
## Raisin Nut Bran	G	200.00000	6.0000000	4.0000000
## Raisin Squares	K	180.00000	4.0000000	0.0000000
## Rice Chex	R	97.34513	0.8849558	0.0000000
## Rice Krispies	K	110.00000	2.0000000	0.0000000
## Shredded Wheat 'n'Bran	N	134.32836	4.4776119	0.0000000
## Shredded Wheat spoon size	N	134.32836	4.4776119	0.0000000
## Smacks	K	146.66667	2.6666667	1.3333333
## Special K	K	110.00000	6.0000000	0.0000000
## Total Corn Flakes	G	110.00000	2.0000000	1.0000000
## Total Raisin Bran	G	140.00000	3.0000000	1.0000000
## Total Whole Grain	G	100.00000	3.0000000	1.0000000
## Triples	G	146.66667	2.6666667	1.3333333
## Trix	G	110.00000	1.0000000	1.0000000
## Wheat Chex	R	149.25373	4.4776119	1.4925373
## Wheaties	G	100.00000	3.0000000	1.0000000
## Wheaties Honey Gold	G	146.66667	2.6666667	1.3333333
##		sodium	fibre	carbo
## 100% Bran		393.93939	30.303030	15.15152
## All-Bran		787.87879	27.272727	21.21212
				15.151515

## All-Bran with Extra Fiber	280.00000	28.000000	16.00000	0.000000
## Apple Cinnamon Cheerios	240.00000	2.000000	14.00000	13.333333
## Apple Jacks	125.00000	1.000000	11.00000	14.000000
## Basic 4	280.00000	2.666667	24.00000	10.666667
## Bran Chex	298.50746	5.970149	22.38806	8.955224
## Bran Flakes	313.43284	7.462687	19.40299	7.462687
## Cap'n'Crunch	293.33333	0.000000	16.00000	16.000000
## Cheerios	232.00000	1.600000	13.60000	0.800000
## Cinnamon Toast Crunch	280.00000	0.000000	17.33333	12.000000
## Clusters	280.00000	4.000000	26.00000	14.000000
## Cocoa Puffs	180.00000	0.000000	12.00000	13.000000
## Corn Chex	280.00000	0.000000	22.00000	3.000000
## Corn Flakes	290.00000	1.000000	21.00000	2.000000
## Corn Pops	90.00000	1.000000	13.00000	12.000000
## Count Chocula	180.00000	0.000000	12.00000	13.000000
## Cracklin' Oat Bran	280.00000	8.000000	20.00000	14.000000
## Crispix	220.00000	1.000000	21.00000	3.000000
## Crispy Wheat & Raisins	186.66667	2.666667	14.66667	13.333333
## Double Chex	253.33333	1.333333	24.00000	6.666667
## Froot Loops	125.00000	1.000000	11.00000	13.000000
## Frosted Flakes	266.66667	1.333333	18.66667	14.666667
## Frosted Mini-Wheats	0.00000	3.750000	17.50000	8.750000
## Fruit & Fibre: Dates Walnuts and Oats	238.80597	7.462687	17.91045	14.925373
## Fruitful Bran	358.20896	7.462687	20.89552	17.910448
## Fruity Pebbles	180.00000	0.000000	17.33333	16.000000
## Golden Crisp	51.13636	0.000000	12.50000	17.045455
## Golden Grahams	373.33333	0.000000	20.00000	12.000000
## Grape Nuts Flakes	159.09091	3.409091	17.04545	5.681818
## Grape-Nuts	680.00000	12.000000	68.00000	12.000000
## Great Grains Pecan	227.27273	9.090909	39.39394	12.121212
## Honey Graham Ohs	220.00000	1.000000	12.00000	11.000000
## Honey Nut Cheerios	333.33333	2.000000	15.33333	13.333333
## Honey-comb	135.33835	0.000000	10.52632	8.270677
## Just Right Fruit & Nut	226.66667	2.666667	26.66667	12.000000
## Kix	173.33333	0.000000	14.00000	2.000000
## Life	223.88060	2.985075	17.91045	8.955224
## Lucky Charms	180.00000	0.000000	12.00000	12.000000
## Mueslix Crispy Blend	223.88060	4.477612	25.37313	19.402985
## Multi-Grain Cheerios	220.00000	2.000000	15.00000	6.000000
## Nut&Honey Crunch	283.58209	0.000000	22.38806	13.432836
## Nutri-Grain Almond-Raisin	328.35821	4.477612	31.34328	10.447761
## Oatmeal Raisin Crisp	340.00000	3.000000	27.00000	20.000000
## Post Nat. Raisin Bran	298.50746	8.955224	16.41791	20.895522
## Product 19	320.00000	1.000000	20.00000	3.000000
## Puffed Rice	0.00000	0.000000	13.00000	0.000000
## Quaker Oat Squares	270.00000	4.000000	28.00000	12.000000
## Raisin Bran	280.00000	6.666667	18.66667	16.000000
## Raisin Nut Bran	280.00000	5.000000	21.00000	16.000000
## Raisin Squares	0.00000	4.000000	30.00000	12.000000
## Rice Chex	212.38938	0.000000	20.35398	1.769912
## Rice Krispies	290.00000	0.000000	22.00000	3.000000
## Shredded Wheat 'n'Bran	0.00000	5.970149	28.35821	0.000000
## Shredded Wheat spoon size	0.00000	4.477612	29.85075	0.000000
## Smacks	93.33333	1.333333	12.00000	20.000000

## Special K	230.00000	1.000000	16.00000	3.000000
## Total Corn Flakes	200.00000	0.000000	21.00000	3.000000
## Total Raisin Bran	190.00000	4.000000	15.00000	14.000000
## Total Whole Grain	200.00000	3.000000	16.00000	3.000000
## Triples	333.33333	0.000000	28.00000	4.000000
## Trix	140.00000	0.000000	13.00000	12.000000
## Wheat Chex	343.28358	4.477612	25.37313	4.477612
## Wheaties	200.00000	3.000000	17.00000	3.000000
## Wheaties Honey Gold	266.66667	1.333333	21.33333	10.666667
##	shelf	potassium	vitamins	
## 100% Bran	3	848.48485	enriched	
## All-Bran	3	969.69697	enriched	
## All-Bran with Extra Fiber	3	660.00000	enriched	
## Apple Cinnamon Cheerios	1	93.33333	enriched	
## Apple Jacks	2	30.00000	enriched	
## Basic 4	3	133.33333	enriched	
## Bran Chex	1	186.56716	enriched	
## Bran Flakes	3	283.58209	enriched	
## Cap'n'Crunch	2	46.66667	enriched	
## Cheerios	1	84.00000	enriched	
## Cinnamon Toast Crunch	2	60.00000	enriched	
## Clusters	3	210.00000	enriched	
## Cocoa Puffs	2	55.00000	enriched	
## Corn Chex	1	25.00000	enriched	
## Corn Flakes	1	35.00000	enriched	
## Corn Pops	2	20.00000	enriched	
## Count Chocula	2	65.00000	enriched	
## Cracklin' Oat Bran	3	320.00000	enriched	
## Crispix	3	30.00000	enriched	
## Crispy Wheat & Raisins	3	160.00000	enriched	
## Double Chex	3	106.66667	enriched	
## Froot Loops	2	30.00000	enriched	
## Frosted Flakes	1	33.33333	enriched	
## Frosted Mini-Wheats	2	125.00000	enriched	
## Fruit & Fibre: Dates Walnuts and Oats	3	298.50746	enriched	
## Fruitful Bran	3	283.58209	enriched	
## Fruity Pebbles	2	33.33333	enriched	
## Golden Crisp	1	45.45455	enriched	
## Golden Grahams	2	60.00000	enriched	
## Grape Nuts Flakes	3	96.59091	enriched	
## Grape-Nuts	3	360.00000	enriched	
## Great Grains Pecan	3	303.03030	enriched	
## Honey Graham Ohs	2	45.00000	enriched	
## Honey Nut Cheerios	1	120.00000	enriched	
## Honey-comb	1	26.31579	enriched	
## Just Right Fruit & Nut	3	126.66667	100%	
## Kix	2	26.66667	enriched	
## Life	2	141.79104	enriched	
## Lucky Charms	2	55.00000	enriched	
## Mueslix Crispy Blend	3	238.80597	enriched	
## Multi-Grain Cheerios	1	90.00000	enriched	
## Nut&Honey Crunch	2	59.70149	enriched	
## Nutri-Grain Almond-Raisin	3	194.02985	enriched	
## Oatmeal Raisin Crisp	3	240.00000	enriched	

## Post Nat. Raisin Bran	3	388.05970	enriched
## Product 19	3	45.00000	100%
## Puffed Rice	3	15.00000	none
## Quaker Oat Squares	3	220.00000	enriched
## Raisin Bran	2	320.00000	enriched
## Raisin Nut Bran	3	280.00000	enriched
## Raisin Squares	3	220.00000	enriched
## Rice Chex	1	26.54867	enriched
## Rice Krispies	1	35.00000	enriched
## Shredded Wheat 'n'Bran	1	208.95522	none
## Shredded Wheat spoon size	1	179.10448	none
## Smacks	2	53.33333	enriched
## Special K	1	55.00000	enriched
## Total Corn Flakes	3	35.00000	100%
## Total Raisin Bran	3	230.00000	100%
## Total Whole Grain	3	110.00000	100%
## Triples	3	80.00000	enriched
## Trix	2	25.00000	enriched
## Wheat Chex	1	171.64179	enriched
## Wheaties	1	110.00000	enriched
## Wheaties Honey Gold	1	80.00000	enriched

UScereal

##	mfr	calories	protein	fat
## 100% Bran	N	212.12121	12.1212121	3.0303030
## All-Bran	K	212.12121	12.1212121	3.0303030
## All-Bran with Extra Fiber	K	100.00000	8.0000000	0.0000000
## Apple Cinnamon Cheerios	G	146.66667	2.6666667	2.6666667
## Apple Jacks	K	110.00000	2.0000000	0.0000000
## Basic 4	G	173.33333	4.0000000	2.6666667
## Bran Chex	R	134.32836	2.9850746	1.4925373
## Bran Flakes	P	134.32836	4.4776119	0.0000000
## Cap'n'Crunch	Q	160.00000	1.3333333	2.6666667
## Cheerios	G	88.00000	4.8000000	1.6000000
## Cinnamon Toast Crunch	G	160.00000	1.3333333	4.0000000
## Clusters	G	220.00000	6.0000000	4.0000000
## Cocoa Puffs	G	110.00000	1.0000000	1.0000000
## Corn Chex	R	110.00000	2.0000000	0.0000000
## Corn Flakes	K	100.00000	2.0000000	0.0000000
## Corn Pops	K	110.00000	1.0000000	0.0000000
## Count Chocula	G	110.00000	1.0000000	1.0000000
## Cracklin' Oat Bran	K	220.00000	6.0000000	6.0000000
## Crispix	K	110.00000	2.0000000	0.0000000
## Crispy Wheat & Raisins	G	133.33333	2.6666667	1.3333333
## Double Chex	R	133.33333	2.6666667	0.0000000
## Froot Loops	K	110.00000	2.0000000	1.0000000
## Frosted Flakes	K	146.66667	1.3333333	0.0000000
## Frosted Mini-Wheats	K	125.00000	3.7500000	0.0000000
## Fruit & Fibre: Dates Walnuts and Oats	P	179.10448	4.4776119	2.9850746
## Fruitful Bran	K	179.10448	4.4776119	0.0000000
## Fruity Pebbles	P	146.66667	1.3333333	1.3333333
## Golden Crisp	P	113.63636	2.2727273	0.0000000
## Golden Grahams	G	146.66667	1.3333333	1.3333333

## Grape Nuts Flakes	P	113.63636	3.4090909	1.1363636
## Grape-Nuts	P	440.00000	12.0000000	0.0000000
## Great Grains Pecan	P	363.63636	9.0909091	9.0909091
## Honey Graham Ohs	Q	120.00000	1.0000000	2.0000000
## Honey Nut Cheerios	G	146.66667	4.0000000	1.3333333
## Honey-comb	P	82.70677	0.7518797	0.0000000
## Just Right Fruit & Nut	K	186.66667	4.0000000	1.3333333
## Kix	G	73.33333	1.3333333	0.6666667
## Life	Q	149.25373	5.9701493	2.9850746
## Lucky Charms	G	110.00000	2.0000000	1.0000000
## Mueslix Crispy Blend	K	238.80597	4.4776119	2.9850746
## Multi-Grain Cheerios	G	100.00000	2.0000000	1.0000000
## Nut&Honey Crunch	K	179.10448	2.9850746	1.4925373
## Nutri-Grain Almond-Raisin	K	208.95522	4.4776119	2.9850746
## Oatmeal Raisin Crisp	G	260.00000	6.0000000	4.0000000
## Post Nat. Raisin Bran	P	179.10448	4.4776119	1.4925373
## Product 19	K	100.00000	3.0000000	0.0000000
## Puffed Rice	Q	50.00000	1.0000000	0.0000000
## Quaker Oat Squares	Q	200.00000	8.0000000	2.0000000
## Raisin Bran	K	160.00000	4.0000000	1.3333333
## Raisin Nut Bran	G	200.00000	6.0000000	4.0000000
## Raisin Squares	K	180.00000	4.0000000	0.0000000
## Rice Chex	R	97.34513	0.8849558	0.0000000
## Rice Krispies	K	110.00000	2.0000000	0.0000000
## Shredded Wheat 'n'Bran	N	134.32836	4.4776119	0.0000000
## Shredded Wheat spoon size	N	134.32836	4.4776119	0.0000000
## Smacks	K	146.66667	2.6666667	1.3333333
## Special K	K	110.00000	6.0000000	0.0000000
## Total Corn Flakes	G	110.00000	2.0000000	1.0000000
## Total Raisin Bran	G	140.00000	3.0000000	1.0000000
## Total Whole Grain	G	100.00000	3.0000000	1.0000000
## Triples	G	146.66667	2.6666667	1.3333333
## Trix	G	110.00000	1.0000000	1.0000000
## Wheat Chex	R	149.25373	4.4776119	1.4925373
## Wheaties	G	100.00000	3.0000000	1.0000000
## Wheaties Honey Gold	G	146.66667	2.6666667	1.3333333
##		sodium	fibre	carbo
## 100% Bran		393.93939	30.303030	15.15152
## All-Bran		787.87879	27.272727	21.21212
## All-Bran with Extra Fiber		280.00000	28.000000	16.00000
## Apple Cinnamon Cheerios		240.00000	2.000000	14.00000
## Apple Jacks		125.00000	1.000000	11.00000
## Basic 4		280.00000	2.666667	24.00000
## Bran Chex		298.50746	5.970149	22.38806
## Bran Flakes		313.43284	7.462687	19.40299
## Cap'n'Crunch		293.33333	0.000000	16.00000
## Cheerios		232.00000	1.600000	13.60000
## Cinnamon Toast Crunch		280.00000	0.000000	17.33333
## Clusters		280.00000	4.000000	26.00000
## Cocoa Puffs		180.00000	0.000000	12.00000
## Corn Chex		280.00000	0.000000	22.00000
## Corn Flakes		290.00000	1.000000	21.00000
## Corn Pops		90.00000	1.000000	13.00000
## Count Chocula		180.00000	0.000000	12.00000
				sugars
				18.181818
				15.151515
				0.000000
				13.333333
				14.000000
				10.666667
				8.955224
				7.462687
				16.000000
				0.800000
				12.000000
				14.000000
				13.000000
				3.000000
				2.000000
				12.000000
				13.000000

## Cracklin' Oat Bran	280.00000	8.000000	20.00000	14.000000
## Crispix	220.00000	1.000000	21.00000	3.000000
## Crispy Wheat & Raisins	186.66667	2.666667	14.66667	13.333333
## Double Chex	253.33333	1.333333	24.00000	6.666667
## Froot Loops	125.00000	1.000000	11.00000	13.000000
## Frosted Flakes	266.66667	1.333333	18.66667	14.666667
## Frosted Mini-Wheats	0.00000	3.750000	17.50000	8.750000
## Fruit & Fibre: Dates Walnuts and Oats	238.80597	7.462687	17.91045	14.925373
## Fruitful Bran	358.20896	7.462687	20.89552	17.910448
## Fruity Pebbles	180.00000	0.000000	17.33333	16.000000
## Golden Crisp	51.13636	0.000000	12.50000	17.045455
## Golden Grahams	373.33333	0.000000	20.00000	12.000000
## Grape Nuts Flakes	159.09091	3.409091	17.04545	5.681818
## Grape-Nuts	680.00000	12.000000	68.00000	12.000000
## Great Grains Pecan	227.27273	9.090909	39.39394	12.121212
## Honey Graham Ohs	220.00000	1.000000	12.00000	11.000000
## Honey Nut Cheerios	333.33333	2.000000	15.33333	13.333333
## Honey-comb	135.33835	0.000000	10.52632	8.270677
## Just Right Fruit & Nut	226.66667	2.666667	26.66667	12.000000
## Kix	173.33333	0.000000	14.00000	2.000000
## Life	223.88060	2.985075	17.91045	8.955224
## Lucky Charms	180.00000	0.000000	12.00000	12.000000
## Mueslix Crispy Blend	223.88060	4.477612	25.37313	19.402985
## Multi-Grain Cheerios	220.00000	2.000000	15.00000	6.000000
## Nut&Honey Crunch	283.58209	0.000000	22.38806	13.432836
## Nutri-Grain Almond-Raisin	328.35821	4.477612	31.34328	10.447761
## Oatmeal Raisin Crisp	340.00000	3.000000	27.00000	20.000000
## Post Nat. Raisin Bran	298.50746	8.955224	16.41791	20.895522
## Product 19	320.00000	1.000000	20.00000	3.000000
## Puffed Rice	0.00000	0.000000	13.00000	0.000000
## Quaker Oat Squares	270.00000	4.000000	28.00000	12.000000
## Raisin Bran	280.00000	6.666667	18.66667	16.000000
## Raisin Nut Bran	280.00000	5.000000	21.00000	16.000000
## Raisin Squares	0.00000	4.000000	30.00000	12.000000
## Rice Chex	212.38938	0.000000	20.35398	1.769912
## Rice Krispies	290.00000	0.000000	22.00000	3.000000
## Shredded Wheat 'n'Bran	0.00000	5.970149	28.35821	0.000000
## Shredded Wheat spoon size	0.00000	4.477612	29.85075	0.000000
## Smacks	93.33333	1.333333	12.00000	20.000000
## Special K	230.00000	1.000000	16.00000	3.000000
## Total Corn Flakes	200.00000	0.000000	21.00000	3.000000
## Total Raisin Bran	190.00000	4.000000	15.00000	14.000000
## Total Whole Grain	200.00000	3.000000	16.00000	3.000000
## Triples	333.33333	0.000000	28.00000	4.000000
## Trix	140.00000	0.000000	13.00000	12.000000
## Wheat Chex	343.28358	4.477612	25.37313	4.477612
## Wheaties	200.00000	3.000000	17.00000	3.000000
## Wheaties Honey Gold	266.66667	1.333333	21.33333	10.666667
##	shelf	potassium	vitamins	
## 100% Bran	3	848.48485	enriched	
## All-Bran	3	969.69697	enriched	
## All-Bran with Extra Fiber	3	660.00000	enriched	
## Apple Cinnamon Cheerios	1	93.33333	enriched	
## Apple Jacks	2	30.00000	enriched	

## Basic 4	3	133.33333	enriched
## Bran Chex	1	186.56716	enriched
## Bran Flakes	3	283.58209	enriched
## Cap'n'Crunch	2	46.66667	enriched
## Cheerios	1	84.00000	enriched
## Cinnamon Toast Crunch	2	60.00000	enriched
## Clusters	3	210.00000	enriched
## Cocoa Puffs	2	55.00000	enriched
## Corn Chex	1	25.00000	enriched
## Corn Flakes	1	35.00000	enriched
## Corn Pops	2	20.00000	enriched
## Count Chocula	2	65.00000	enriched
## Cracklin' Oat Bran	3	320.00000	enriched
## Crispix	3	30.00000	enriched
## Crispy Wheat & Raisins	3	160.00000	enriched
## Double Chex	3	106.66667	enriched
## Froot Loops	2	30.00000	enriched
## Frosted Flakes	1	33.33333	enriched
## Frosted Mini-Wheats	2	125.00000	enriched
## Fruit & Fibre: Dates Walnuts and Oats	3	298.50746	enriched
## Fruitful Bran	3	283.58209	enriched
## Fruity Pebbles	2	33.33333	enriched
## Golden Crisp	1	45.45455	enriched
## Golden Grahams	2	60.00000	enriched
## Grape Nuts Flakes	3	96.59091	enriched
## Grape-Nuts	3	360.00000	enriched
## Great Grains Pecan	3	303.03030	enriched
## Honey Graham Ohs	2	45.00000	enriched
## Honey Nut Cheerios	1	120.00000	enriched
## Honey-comb	1	26.31579	enriched
## Just Right Fruit & Nut	3	126.66667	100%
## Kix	2	26.66667	enriched
## Life	2	141.79104	enriched
## Lucky Charms	2	55.00000	enriched
## Mueslix Crispy Blend	3	238.80597	enriched
## Multi-Grain Cheerios	1	90.00000	enriched
## Nut&Honey Crunch	2	59.70149	enriched
## Nutri-Grain Almond-Raisin	3	194.02985	enriched
## Oatmeal Raisin Crisp	3	240.00000	enriched
## Post Nat. Raisin Bran	3	388.05970	enriched
## Product 19	3	45.00000	100%
## Puffed Rice	3	15.00000	none
## Quaker Oat Squares	3	220.00000	enriched
## Raisin Bran	2	320.00000	enriched
## Raisin Nut Bran	3	280.00000	enriched
## Raisin Squares	3	220.00000	enriched
## Rice Chex	1	26.54867	enriched
## Rice Krispies	1	35.00000	enriched
## Shredded Wheat 'n'Bran	1	208.95522	none
## Shredded Wheat spoon size	1	179.10448	none
## Smacks	2	53.33333	enriched
## Special K	1	55.00000	enriched
## Total Corn Flakes	3	35.00000	100%
## Total Raisin Bran	3	230.00000	100%

## Total Whole Grain	3	110.00000	100%
## Triples	3	80.00000	enriched
## Trix	2	25.00000	enriched
## Wheat Chex	1	171.64179	enriched
## Wheaties	1	110.00000	enriched
## Wheaties Honey Gold	1	80.00000	enriched