

# Lab 7

## Question 1

```

1/1 v + [share] [copy]
Tilix: rodri@CIS106: ~/Documents/Csv

1: rodri@CIS106: ~/Documents/Csv v
rodri@CIS106:~/Documents$ cd Csv/
rodri@CIS106:~/Documents/Csv$ ls
cars.csv    cereal_with_calories.csv  country.csv  film.csv    sucess.txt
cereal.csv  contacts.csv              error.txt    report.csv
rodri@CIS106:~/Documents/Csv$ cat cereal.csv
name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cup;rating
String;Categorical;Categorical;Int;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
100% Bran;N;C;70;4;1;130;10;5;6;280;25;3;1;0.33;68.402973
100% Natural Bran;Q;C;120;3;5;15;2;8;8;135;0;3;1;1;33.983679
All-Bran;K;C;70;4;1;260;9;7;5;320;25;3;1;0.33;59.425505
All-Bran with Extra Fiber;K;C;50;4;0;140;14;8;0;330;25;3;1;0.5;93.704912
Almond Delight;R;C;110;2;2;200;1;14;8;-1;25;3;1;0.75;34.384843
Apple Cinnamon Cheerios;G;C;110;2;2;180;1.5;10.5;10;70;25;1;1;0.75;29.509541
Apple Jacks;K;C;110;2;0;125;1;11;14;30;25;2;1;1;33.174094
Basic 4;G;C;130;3;2;210;2;18;8;100;25;3;1.33;0.75;37.038562
Bran Chex;R;C;90;2;1;200;4;15;6;125;25;1;1;0.67;49.120253
Bran Flakes;P;C;90;3;0;210;5;13;5;190;25;3;1;0.67;53.313813
Cap'n Crunch;O;C;120;1;2;220;0;12;12;35;25;2;1;0.75;18.042851

May 10 18:10
Tilix: rodri@CIS106: ~/Documents/Csv

1: rodri@CIS106: ~/Documents/Csv v
Chevrolet Camaro
Ford Mustang GL
Volkswagen Pickup
Dodge Rampage
Ford Ranger
Chevy S-10
rodri@CIS106:~/Documents/Csv$ cut -d";" -f1,3 cars.csv
Car;Cylinders
STRING;INT
Chevrolet Chevelle Malibu;8
Buick Skylark 320;8
Plymouth Satellite;8
AMC Rebel SST;8
Ford Torino;8
Ford Galaxie 500;8
Chevrolet Impala;8
Plymouth Fury iii;8

```

```
String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cups;rating
rodri@CIS106:~/Documents/Csv$ cat -nEv cereal.csv
 1 name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cups;rating^M$
 2 String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float^M$
 3 100% Bran;N;C;70;4;1;130;10;5;6;280;25;3;1;0.33;68.402973^M$
 4 100% Natural Bran;Q;C;120;3;5;15;2;8;8;135;0;3;1;1;33.983679^M$
 5 All-Bran;K;C;70;4;1;260;9;7;5;320;25;3;1;0.33;59.425505^M$
 6 All-Bran with Extra Fiber;K;C;50;4;0;140;14;8;0;330;25;3;1;0.5;93.704912^M$
 7 Almond Delight;R;C;110;2;2;200;1;14;8;-1;25;3;1;0.75;34.384843^M$
 8 Apple Cinnamon Cheerios;G;C;110;2;2;180;1.5;10.5;10;70;25;1;1;0.75;29.509541^M$
```

```
1/1 v + T T Tilix: rodri@CIS106: ~/Documents/Csv
1: rodri@CIS106: ~/Documents/Csv v
rodri@CIS106:~/Documents/Csv$ head -n 2 cereal.csv
name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cups;rating
String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
rodri@CIS106:~/Documents/Csv$ tail -n 2 cereal.csv
Wheaties;G;C;100;3;1;200;3;17;3;110;25;1;1;1;51.592193
Wheaties Honey Gold;G;C;110;2;1;200;1;16;8;60;25;1;1;0.75;36.187559
rodri@CIS106:~/Documents/Csv$
```

## Question 2

```
May 10 18:09
1/1 v + T T Tilix: rodri@CIS106: ~/Documents/Csv
1: rodri@CIS106: ~/Documents/Csv v
rodri@CIS106:~/Documents/Csv$ head -n 1 cars.csv
Car;MPG;Cylinders;Displacement;Horsepower;Weight;Acceleration;Model;Origin
rodri@CIS106:~/Documents/Csv$ cut -d";" -f1 cars.csv
Car
STRING
Chevrolet Chevelle Malibu
Buick Skylark 320
Plymouth Satellite
AMC Rebel SST
Ford Torino
```

```
May 10 18:10
1/1 v + T T Tilix: rodri@CIS106: ~/Documents/Csv
1: rodri@CIS106: ~/Documents/Csv v
Chevrolet Camaro
Ford Mustang GL
Volkswagen Pickup
Dodge Rampage
Ford Ranger
Chevy S-10
rodri@CIS106:~/Documents/Csv$ cut -d";" -f1,3 cars.csv
Car;Cylinders
STRING;INT
Chevrolet Chevelle Malibu;8
Buick Skylark 320;8
Plymouth Satellite;8
AMC Rebel SST;8
Ford Torino;8
Ford Galaxie 500;8
Chevrolet Impala;8
Plymouth Fury iii;8
```

```
Chevrolet Camaro = 4
Ford Mustang GL = 4
Volkswagen Pickup = 4
Dodge Rampage = 4
Ford Ranger = 4
Chevy S-10 = 4
rodri@CIS106:~/Documents/Csv$ cut -d";" -f1,3 cars.csv --output-delimiter=" = "
```

```
Volkswagen Scirocco;31.5;4;89.00;71.00;1990.;14.9;78;Europe
Volkswagen Super Beetle 117;0;4;97.00;48.00;1978.;20.0;71;Europe
Volkswagen Super Beetle;26.0;4;97.00;46.00;1950.;21.0;73;Europe
Volkswagen Type 3;23.0;4;97.00;54.00;2254.;23.5;72;Europe
Volvo 144ea;19.0;4;121.0;112.0;2868.;15.5;73;Europe
Volvo 145e (sw);18.0;4;121.0;112.0;2933.;14.5;72;Europe
Volvo 244DL;22.0;4;121.0;98.00;2945.;14.5;75;Europe
Volvo 245;20.0;4;130.0;102.0;3150.;15.7;76;Europe
Volvo 264gl;17.0;6;163.0;125.0;3140.;13.6;78;Europe
Volvo Diesel;30.7;6;145.0;76.00;3160.;19.6;81;Europe
rodri@CIS106:~/Documents/Csv$ sort cars.csv
```

```
May 10 18:19
Tilix: rodri@CIS106: ~/Documents/Csv
1: rodri@CIS106: ~/Documents/Csv
Grape-Nuts;P;C;110;3;0;170;3;17;3;90;25;3;1;0.25;53.371007
Honey Nut Cheerios;G;C;110;3;1;250;1.5;11.5;10;90;25;1;1;0.75;31.072217
Clusters;G;C;110;3;2;140;2;13;7;105;25;3;1;0.5;40.400208
Cracklin' Oat Bran;K;C;110;3;3;140;4;10;7;160;25;3;1;0.5;40.448772
Special K;K;C;110;6;0;230;1;16;3;55;25;1;1;1;53.131324
Cheerios;G;C;110;6;2;290;2;17;1;105;25;1;1;1.25;50.764999
Cap'n Crunch;Q;C;120;1;2;220;0;12;12;35;25;2;1;0.75;18.042851
Honey Graham Ohs;Q;C;120;1;2;220;1;12;11;45;25;2;1;1;21.071292
Cinnamon Toast Crunch;G;C;120;1;3;210;0;13;9;45;25;2;1;0.75;19.823573
Nut&Honey Crunch;K;C;120;2;1;190;0;15;9;40;25;2;1;0.67;29.924285
Fruitful Bran;K;C;120;3;0;240;5;14;12;190;25;3;1.33;0.67;41.015492
Post Nat. Raisin Bran;P;C;120;3;1;200;6;11;14;260;25;3;1.33;0.67;37.840594
Raisin Bran;K;C;120;3;1;210;5;14;12;240;25;2;1.33;0.75;39.259197
Fruit & Fibre Dates, Walnuts, and Oats;P;C;120;3;2;160;5;12;10;200;25;3;1.25;0.67;40.917047
Great Grains Pecan;P;C;120;3;3;75;3;13;4;100;25;3;1;0.33;45.811716
100% Natural Bran;Q;C;120;3;5;15;2;8;8;135;0;3;1;1;33.983679
Oatmeal Raisin Crisp;G;C;130;3;2;170;1.5;13.5;10;120;25;3;1.25;0.5;30.450843
Basic 4;G;C;130;3;2;210;2;18;8;100;25;3;1.33;0.75;37.038562
Just Right Fruit & Nut;K;C;140;3;1;170;2;20;9;95;100;3;1.3;0.75;36.471512
Total Raisin Bran;G;C;140;3;1;190;4;15;14;230;100;3;1.5;1;28.592785
Nutri-Grain Almond-Raisin;K;C;140;3;2;220;3;21;7;130;25;3;1.33;0.67;40.692320
Muesli Raisins, Peaches, & Pecans;R;C;150;4;3;150;3;16;11;170;25;3;1;1;34.139765
Muesli Raisins, Dates, & Almonds;R;C;150;4;3;95;3;16;11;170;25;3;1;1;37.136863
Muesli Crispy Blend;K;C;160;3;2;150;3;17;13;160;25;3;1.5;0.67;30.313351
Puffed Rice;Q;C;50;1;0;0;13;0;15;0;3;0.5;1;60.756112
Puffed Wheat;Q;C;50;2;0;0;1;10;0;50;0;3;0.5;1;63.005645
All Bran with Extra Fiber;K;C;50;4;0;140;14;0;0;330;25;3;1;0.5;93.704912
100% Bran;N;C;70;4;1;130;10;5;6;280;25;3;1;0.33;68.402973
All Bran;K;C;70;4;1;260;9;7;5;320;25;3;1;0.33;59.425505
Shredded Wheat;N;C;80;2;0;0;3;16;0;95;0;1;0.83;1;68.235885
Raisin Squares;K;C;90;2;0;0;2;15;6;110;25;3;1;0.5;55.333142
Strawberry Fruit Wheats;N;C;90;2;0;15;3;15;5;90;25;2;1;1;59.363993
Bran Chex;R;C;90;2;1;200;4;15;6;125;25;1;1;0.67;49.120253
Shredded Wheat spoon size;N;C;90;3;0;0;3;20;0;120;0;1;1;0.67;72.801787
Shredded Wheat 'n Bran;N;C;90;3;0;0;4;19;0;140;0;1;1;0.67;74.472949
Nutri-grain Wheat;K;C;90;3;0;170;3;18;2;90;25;3;1;1;59.642837
Bran Flakes;P;C;90;3;0;210;5;13;5;190;25;3;1;0.67;53.313813
name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cup;rating
String;Categorical;Categorical;Int;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
rodri@CIS106:~/Documents/Csv$ sort -t";" -k4 cereal.csv
```

## Question 3

```
rodri@CIS106:~/Documents/Books$ grep "War" war-and-peace.txt
The Project Gutenberg eBook of War and Peace, by Leo Tolstoy
Title: War and Peace
the Minister of War.”
in to the Minister of War. Five minutes later he returned and bowing
corridor to the cabinet where the Minister of War was at work. The
narrowed disdainfully, he entered the room of the Minister of War with
interested the Minister of War less than any of the other matters he was
indifferent hands of the Minister of War and the polite adjutant. The
engagement and his reception by the Minister of War.
the Minister of War but also his Most August Majesty the Emperor and
invincibility of the French, and the Minister of War does not even care
to the Emperor Francis; he remembered the Minister of War, the polite
his own house. The Minister of War came up and congratulated him on the
That same night, having taken leave of the Minister of War, Bolkónski
Austrian Council of War at which Suvórov crowed like a cock in reply to
Warmed by the spring sunshine he sat in the calèche looking at the new
Minister of War, Count Arakchéev.
“He is Minister of War, a man trusted by the Emperor, and I need not
of War needlessly deviating.”
War’s anteroom).
which would take them to the Warsaw highroad, and from there they would
the good of that? War is my profession, but his business is to reign
the Minister of War and went to join the army in Moldavia. While in
of War; Count Bennigsen, the senior general in rank; the Grand Duke
without knowing why. War is not courtesy but the most horrible thing in
The Council of War began to assemble at two in the afternoon in the
than that. We took Vienna, Berlin, Madrid, Naples, Rome, Warsaw, all
“The path to Warsaw, perhaps,” Prince Hippolyte remarked loudly and
had first wanted to effect a diversion in Greece and then in Warsaw but
rodri@CIS106:~/Documents/Books$
```

same applies to historical events. Why war and revolution occur we do  
downwards, a man indubitably believes this and always expects the law  
in memory, or what is the same thing the farther I go forward in my  
The Austro-Prussian war appears to us undoubtedly the result of the  
crafty conduct of Bismarck, and so on. The Napoleonic wars still seem  
or mother, or self-sacrifice with the possibility of a reward, is more  
with the self-destruction toward which—ever dissecting and dissecting  
\*\*\* END OF THE PROJECT GUTENBERG EBOOK WAR AND PEACE \*\*\*

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LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE  
OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT  
LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.  
warranties or the exclusion or limitation of certain types of  
rodri@CIS106:~/Documents/Books\$ grep -i "War" war-and-peace.txt

```
rodri@CIS106:~/Documents/Books$ grep -ic "War" war-and-peace.txt
1255
rodri@CIS106:~/Documents/Books$
```

```
rodri@CIS106:~/Documents/Books$ grep -iwc "War" war-and-peace.txt
293
rodri@CIS106:~/Documents/Books$
```



```
rodri@CIS106:~/Documents/Books$ grep -in "^peace" war-and-peace.txt
5542:peace. The old man was beside himself: moved the chair on which he was
20046:peace.”
26471:peace.” But however much they left her in peace she could not now be
33900:peace so long as a single armed enemy remained on Russian soil and told
34397:peace with you. As for the Swedes—it is their fate to be governed by
35057:peace nor war, neither an advance nor a defensive camp at the Drissa
36617:peace and the abolition of war, and secondly, by the fact that when he
44768:peaceful, and glorious fatherland, I should have proclaimed
51593:peace arising from consciousness of having stifled those personal dreams
58824:peace, he said: There can be no peace, for such is the people’s will. He
59768:peaceful refuge where he could recover himself, rest, and think over
rodri@CIS106:~/Documents/Books$
```

```
rodri@CIS106:~/Documents/Books$ grep -nw "^The" war-and-peace.txt
972:The prince was silent and looked indifferent. But, with the womanly and
982:The prince bowed to signify his respect and gratitude.
1004:The prince answered nothing, but she looked at him significantly,
1081:The Abbé Morio and many others had also come.
1102:The young Princess Bolkónskaya had brought some work in a
1118:The little princess went round the table with quick, short, swaying
1221:The third group was gathered round Mortemart and Anna Pávlovna.
1223:The vicomte was a nice-looking young man with soft features and polished
1240:The vicomte bowed and smiled courteously in token of his willingness to
1251:The vicomte wished to begin his story and gave a subtle smile.
1257:The princess smiled. She rose with the same unchanging smile with which
1279:The princess rested her bare round arm on a little table and considered
1289:The little princess had also left the tea table and followed Hélène.
1332:The vicomte told his tale very neatly. It was an anecdote, then current,
1340:The story was very pretty and interesting, especially at the point
1351:The vicomte appreciated this silent praise and smiling gratefully
```

May 10 18:35

Tilix: rodri@CIS106: ~/Documents/Books

```
rodri@CIS106:~/Documents/Books$ grep -rwi "love" ./
./pride-and-prejudice.txt:by allowance" and "loving with personal love." This distinction applies
./pride-and-prejudice.txt:proper thing to love them. And in the sect--fairly large and yet
./pride-and-prejudice.txt:aversion to actual love. I do not know whether the all-grasping hand of
./pride-and-prejudice.txt:his falling in love at all is not extremely probable. Here again I
./pride-and-prejudice.txt:injured in disposition, and thoroughly in love. As for his being in
./pride-and-prejudice.txt:love, Elizabeth has given as just an exposition of the causes of that
./pride-and-prejudice.txt:ladies with whom it might be a pleasure to fall in love; there are at
./pride-and-prejudice.txt:Grant. I should have been most in love with Beatrix and Argemone; I
./pride-and-prejudice.txt:"So much love and eloquence" 156
./pride-and-prejudice.txt:may fall in love with one of them, and therefore you must visit him as
./pride-and-prejudice.txt:for your sakes we would do anything. Lydia, my love, though you are
./pride-and-prejudice.txt:dancing was a certain step towards falling in love; and very lively
./pride-and-prejudice.txt:way to be very much in love; but she considered with pleasure that it
./pride-and-prejudice.txt:very few of us who have heart enough to be really in love without
./pride-and-prejudice.txt:in love as much as she chooses."
./pride-and-prejudice.txt:imagination is very rapid; it jumps from admiration to love, from love
./pride-and-prejudice.txt:Jane, make haste and tell us; make haste, my love."
./pride-and-prejudice.txt:brother Gardiner's in town so much in love with her, that my
./pride-and-prejudice.txt:discovered the efficacy of poetry in driving away love!"
./pride-and-prejudice.txt:"I have been used to consider poetry as the food of love," said Darcy.
./pride-and-prejudice.txt:"Of a fine, stout, healthy love it may. Everything nourishes what is
./pride-and-prejudice.txt:be a great loss to me to have many such acquaintance. I dearly love a
./pride-and-prejudice.txt:to-day, Lydia, my love, ring the bell. I must speak to Hill this
./pride-and-prejudice.txt:shall choose to attribute it to your wish of increasing my love by
./pride-and-prejudice.txt:successful love; for Mrs. Bennet, having dawdled about in the vestibule
./pride-and-prejudice.txt:in love with you and wants him to marry Miss Darcy. She follows him to
./pride-and-prejudice.txt:is not such a simpleton. Could she have seen half as much love in Mr.
./pride-and-prejudice.txt:of being in love with you, he is very much in love with her friend."
./pride-and-prejudice.txt:she dared to hope that so much love and eloquence awaited her there.
./pride-and-prejudice.txt:"So much love and eloquence"
./pride-and-prejudice.txt:publish his prosperous love.
./pride-and-prejudice.txt:the possibility of Mr. Collins's fancying himself in love with her
./pride-and-prejudice.txt:and, luckily for the others, the business of love-making relieved them
./pride-and-prejudice.txt:whom I really love, and still fewer of whom I think well. The more I see
./pride-and-prejudice.txt:has much longer than they have been my readers if they love
```

```
rodri@CIS106:~/Documents/Books$ grep -Rn "^l...d" ./
./pride-and-prejudice.txt:1720:liked a red coat myself very well--and, indeed, so I do still at my
./pride-and-prejudice.txt:9474:lived. Not like the wild young men now-a-days, who think of nothing but
./pride-and-prejudice.txt:10016:loved her, but for loving her still well enough to forgive all the
./pride-and-prejudice.txt:13948:liked him but Jane; and even feared that with the others it was a
./war-and-peace.txt:5254:liked to. He looked inquiringly at his mistress and saw that she was
./war-and-peace.txt:7296:liked to tell him. He gathered up the papers and with a bow to both,
./war-and-peace.txt:12933:liked to repeat to herself. It was the story of a girl who had been
./war-and-peace.txt:13034:loved more than himself. He kept telling himself that he would consider
./war-and-peace.txt:13817:liked to help young men, was flattered by being asked for his assistance
./war-and-peace.txt:21373:lived for glory.--And after all what is glory? The same love of others,
./war-and-peace.txt:21375:lived for others, and not almost, but quite, ruined my life. And I have
./war-and-peace.txt:22829:lie down in my room and have a rest."
./war-and-peace.txt:23565:lived for myself alone while others live so apart from it, but so that
./war-and-peace.txt:25906:liked her voice. She asked this and then became confused, feeling that
./war-and-peace.txt:25908:liked her singing as he liked everything she did.
./war-and-peace.txt:26188:loved.) "I... but no, I will talk to you later on," and with a
./war-and-peace.txt:26971:loved his wife, she died, but that was not enough: he wanted to bind
./war-and-peace.txt:28969:lived in animals, and will go back into animals again."
./war-and-peace.txt:28985:lived for a whole eternity."
```

```
rodri@CIS106:~/Documents/Books$ grep -wniR "^d[aeiou]..." ./
./pride-and-prejudice.txt:420:Darcy; nearly all of them would have palpitated and fluttered at the
./pride-and-prejudice.txt:1022:dance."
./pride-and-prejudice.txt:1036:Darcy, looking at the eldest Miss Bennet.
./pride-and-prejudice.txt:1110:dear, to have given him one of your set-downs. I quite detest the man."
./pride-and-prejudice.txt:1399:dark. There is so much of gratitude or vanity in almost every
./pride-and-prejudice.txt:1851:dirty weather, and by herself, was almost incredible to Mrs. Hurst and
./pride-and-prejudice.txt:2321:Darcy only smiled; and the general pause which ensued made Elizabeth
./pride-and-prejudice.txt:2547:Darcy had much better finish his letter."
./pride-and-prejudice.txt:2584:dare."
./pride-and-prejudice.txt:2690:door. He then sat down by her, and talked scarcely to anyone else.
./pride-and-prejudice.txt:2696:Darcy did not wish for cards, and Mr. Hurst soon found even his open
./pride-and-prejudice.txt:2706:Darcy's progress through _his_ book, as in reading her own; and she was
./pride-and-prejudice.txt:2737:day."
./pride-and-prejudice.txt:2789:Darcy may hug himself."
./pride-and-prejudice.txt:3088:doubt her seeing them all in due time well disposed of in marriage. This
./pride-and-prejudice.txt:3312:dance while Mrs. Bennet was sticking the fire. Elizabeth, equally
```

May 10 18:44

1/1 + [share] [copy]

Tilix: rodri@CIS106: ~/Documents/Books

1: rodri@CIS106: ~/Documents/Books ▾

```
rodri@CIS106:~/Documents/Books$ grep -iE "a{2}" dracula.txt
help me deck the room with my garlic, which is all the way from Haarlem,
Haarlem. To-night Dr. Van Helsing is going away, as he has to be for a
rodri@CIS106:~/Documents/Books$
```