

# Lab 7

## Question 1

```
1/1 v + - Tili: esantos@cis106desktop: ~
1: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ cat ~/Documents/Csv/cereal.csv
name;nfr;type;calories;protein;fat;sodium;fiber;carbo;sugars
potass;vitamins;shelf;weight;cup;rating
String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
100% Bran;N;C;70;4;1;130;10;5;6;208;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;0.593.784912
Almond Delight;R;C;110;2;2;200;1;14;8;-1;25;3;1;0.75;34.384843
Apple Cinnamon Cheerios;C;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
4: esantos@cis106desktop: ~
esantos@cis106desktop:~$ head -2 ~/Documents/Csv/cereal.csv
name;nfr;type;calories;protein;fat;sodium;fiber;carbo;sugars
potass;vitamins;shelf;weight;cup;rating
String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float
esantos@cis106desktop:~$

2: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ tac ~/Documents/Csv/cereal.csv
Wheaties Honey Gold;G;C;110;2;1;200;1;16;8;60;25;1;1;0.75;36.187559
Wheaties;G;C;100;3;1;200;3;17;3;110;25;1;1;1;51.592193
Wheat Chex;R;C;100;3;1;230;3;17;3;115;25;1;1;0.67;49.787445
Trix;G;C;110;1;1;140;0;13;12;25;25;2;1;1;27.75301
Triples;G;C;110;2;1;250;0;21;3;60;25;3;1;0.75;39.106174
Total Whole Grain;G;C;100;3;1;200;3;16;3;110;100;3;1;1;46.658844
Total Raisin Bran;G;C;140;3;1;190;4;15;14;230;100;3;1;5;1;28.592785
Total Corn Flakes;G;C;110;2;1;200;0;21;3;35;100;3;1;1;38.839746
Strawberry Fruit Wheats;N;C;90;2;0;15;3;15;5;90;25;2;1;1;59.363993
Special K;K;C;110;6;0;230;1;16;3;55;25;1;1;1;53.131324
Snacks;K;C;110;2;1;70;1;9;15;40;25;2;1;0.75;31.230054
Shredded Wheat spoon size;N;C;90;3;0;8;0;3;20;0;120;0;1;1;0.67;72.801787
Shredded Wheat 'n Bran;N;C;90;3;0;4;19;0;140;0;1;1;0.67;74.472949
Shredded Wheat;N;C;80;2;0;8;3;16;0;95;0;1;0.83;1;68.235885
Rice Krispies;K;C;110;2;0;290;0;22;3;35;25;1;1;1;40.560159
Rice Chex;R;C;110;1;0;240;0;23;2;30;25;1;1;1;41.998933
Raisin Squares;K;C;90;2;0;8;2;15;6;110;25;3;1;0.55;33.3142
esantos@cis106desktop:~$

3: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ cat -nEV ~/Documents/Csv/cereal.csv
cat: invalid option -- 'V'
Try 'cat --help' for more information.
esantos@cis106desktop:~$ cat -nVE ~/Documents/Csv/cereal.csv
1 name;nfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight;cup;rating*MS
2 String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Float*MS
3 100% Bran;N;C;70;4;1;130;10;5;6;208;25;3;1;0.33;68.402973*MS
4 100% Natural Bran;Q;C;120;3;5;15;2;8;8;135;0;3;1;1;33.983679*MS
5 All-Bran;K;C;70;4;1;260;9;7;5;320;25;3;1;0.33;59.425505*MS
6 All-Bran with Extra Fiber;K;C;50;4;0;140;14;8;0;330;25;3;1;0.593.784912*MS
7 Almond Delight;R;C;110;2;2;200;1;14;8;-1;25;3;1;0.75;34.384843*MS
8 Apple Cinnamon Cheerios;C;C;110;2;2;180;1;5;10;5;10;70;25;1;1;0.75;29.509541*MS
9 Apple Jacks;K;C;110;2;0;125;1;11;14;30;25;2;1;1;33.174094*MS
10 Basic 4;G;C;130;3;2;210;2;18;8;100;25;3;1.33;0.75;37.038562*MS
11 Bran Chex;R;C;90;2;1;200;4;15;6;125;25;1;1;0.67;49.120253*MS
12 Bran Flakes;P;C;90;3;0;210;5;13;5;190;25;3;1;0.67;53.313813*MS
13 Cap'n Crunch;Q;C;120;1;2;220;0;12;12;35;25;2;1;0.75;18.042851*MS
14 Cheerios;G;C;110;6;2;290;2;17;1;105;25;1;1;1.25;50.764999*MS
15 Cinnamon Toast Crunch;G;C;120;1;3;210;0;13;9;45;25;2;1;0.75;19.823573*MS
16 Clusters;G;C;110;3;2;140;2;13;7;105;25;3;1;0.5.40.480200*MS
17 Cocoa Puffs;G;C;110;1;1;180;0;12;13;55;25;2;1;22.736446*MS
18 Corn Chex;R;C;110;2;0;280;0;22;3;25;25;1;1;1;41.445019*MS
19 Corn Flakes;K;C;100;2;0;290;1;21;2;35;25;1;1;1;45.863324*MS
20 Corn Pops;K;C;110;1;0;90;1;13;12;20;25;2;1;1;35.782791*MS
21 Count Chocula;G;C;110;1;1;180;0;12;13;65;25;2;1;1;22.396513*MS
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## Question 2

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1/1 v + - Tili: esantos@cis106desktop: ~
1: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ cut -d';' -f1,3 ~/Documents/Csv/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
pontiac catalina;8
amc ambassador dpl;8
citroen ds-21 pallas;4
chevrolet chevelle concours (sw);8
ford torino (sw);8
plymouth satellite (sw);8
amc rebel sst (sw);8
4: esantos@cis106desktop: ~
esantos@cis106desktop:~$ sort cars.csv
sort: cannot read cars.csv: No such file or directory
esantos@cis106desktop:~$ cd ~/Documents/Csv/
esantos@cis106desktop:~/Documents/Csv$ sort cars.csv
AMC Ambassador Brougham;13.0;8;360.0;175.0;3821.;11.0;73;US
AMC Ambassador DPL;15.0;8;390.0;190.0;3850.;8.5;70;US
AMC Ambassador SST;17.0;8;304.0;150.0;3672.;11.5;72;US
AMC Concord;19.4;6;232.0;90.0;3210.;17.2;78;US
AMC Concord;24.3;4;151.0;90.0;3003.;20.1;80;US
AMC Concord d/L;18.1;6;258.0;120.0;3410.;15.1;78;US
AMC Concord DL;23.0;4;151.0;90.0;3035.;20.5;82;US
AMC Concord DL;20.2;6;232.0;90.0;3265.;18.2;79;US
AMC Grenlin;18.0;6;232.0;100.0;2709.;15.0;73;US
AMC Grenlin;19.0;6;232.0;100.0;2634.;13.0;71;US
AMC Grenlin;20.0;6;232.0;100.0;2914.;16.0;75;US
AMC Grenlin;21.0;6;199.0;90.0;2648.;15.0;70;US
AMC Hornet;18.0;6;199.0;97.00;2774.;15.5;70;US
AMC Hornet;18.0;6;232.0;100.0;2945.;16.0;73;US
2: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ cut -d';' -f1 ~/Documents/Csv/cars.csv
car
STRING
chevrolet chevelle malibu
buick skylark 320
plymouth satellite
amc rebel sst
ford torino
ford galaxie 500
chevrolet impala
plymouth fury iii
pontiac catalina
amc ambassador dpl
citroen ds-21 pallas
chevrolet chevelle concours (sw)
ford torino (sw)
plymouth satellite (sw)
amc rebel sst (sw)
3: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ cut -d';' -f1,3 ~/Documents/Csv/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 iil = 8
pontiac catalina = 8
amc ambassador dpl = 8
citroen ds-21 pallas = 4
chevrolet chevelle concours (sw) = 8
ford torino (sw) = 8
plymouth satellite (sw) = 8
amc rebel sst (sw) = 8
5: esantos@cis106desktop: ~ A [ x
esantos@cis106desktop:~$ sort -t";" -k4 ~/Documents/Csv/cereal.csv
Double Chex;R;C;100;2;0;190;1;18;5;80;25;3;1;0.75;44.330856
Corn Flakes;K;C;100;2;0;290;1;21;2;35;25;1;1;1;45.863324
Golden Crisp;P;C;100;2;0;45;0;11;15;40;25;1;1;0.88;35.252444
Crispy Wheat & Raisins;G;C;100;2;1;140;2;11;10;120;25;3;1;0.75;36.176196
Multi-Grain Cheerios;G;C;100;2;1;220;2;15;6;90;25;1;1;1;40.105965
Frosted Mini-Wheats;K;C;100;3;0;8;3;14;7;100;25;2;1;0.8;58.345141
Product 19;K;C;100;3;0;320;1;20;3;45;100;3;1;1;41.503540
Cream of Wheat (Quick);N;H;100;3;0;80;1;21;0;-1;0;2;1;1;64.533816
Grape Nuts Flakes;P;C;100;3;1;140;3;15;5;85;25;3;1;0.80;52.076897
Total Whole Grain;G;C;100;3;1;200;3;16;3;110;100;3;1;1;46.658844
Wheaties;G;C;100;3;1;200;3;17;3;110;25;1;1;1;51.592193
Wheat Chex;R;C;100;3;1;230;3;17;3;115;25;1;1;0.67;49.787445
Raisin Nut Bran;G;C;100;3;2;140;2;5;10.5;140;25;3;1;0.5;39.703400
Maypo;A;H;100;4;1;0;0;16;3;95;25;2;1;1;54.850917
Quaker Oat Squares;Q;C;100;4;1;135;2;14;6;110;25;3;1;0.5;49.511874
Life;Q;C;100;4;2;150;2;12;6;95;25;2;1;0.67;45.328074
Quaker Oatmeal;Q;H;100;5;2;0;2;7;-1;1;110;0;1;1;0.67;50.828392
```

## Question 3 part 1

```
1: esantos@cis106desktop: ~$ grep 'War' ~/Documents/Books/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, Bolkonski
Austrian Council of War at which Suworov crowded like a cock in reply to
Warmed by the spring sunshine he sat in the calèche looking at the new
Minister of War, Count Arakchhev.
"The 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
esantos@cis106desktop: ~$ grep -i 'War' ~/Documents/Books/war-and-peace.txt
The Project Gutenberg eBook of War and Peace, by Leo Tolstoy
Title: War and Peace
*** START OF THE PROJECT GUTENBERG EBOOK WAR AND PEACE ***
WAR AND PEACE
Buonapartes. But I warn you, if you don't tell me that this means war,
things, but Austria never has wished, and does not wish, for war. She
Pavlovna's hand and to high society, to certain women, and to
to get himself killed. Tell me what this wretched war is for?" she
she moved toward Anna Pavlovna. Hélène was so lovely that not only
"You are off to the war, Prince?" said Anna Pavlovna.
* God has given it to me, let him who touches it beware!
more animated. "And believe me, they are reaping the reward of their
through his lorgnette, suddenly turned completely round toward the
Prince Andrew, who had evidently wished to tone down the awkwardness of
his kindly, simple, and modest expression. Anna Pavlovna turned toward
awkwardness or intentionally (no one could have said which) after the
to tell you. There is a war now against Napoleon. If it were a war for
wars," he said.
"Well, why are you going to the war?" asked Pierre.
wants to go to the war," replied Pierre, addressing the princess
without wars. How is it that we women don't want anything of the kind,
so to me? What have I done to you? You are going to the war and have no
he worked west step by step toward his goal. He was free, he had nothing
```

## Question 3 part 2

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1: esantos@cis106desktop: ~$ grep -iRw 'love' ~/Documents/Books/
/home/esantos/Documents/Books/dracula.txt:know her is to love her. I long to go through the crowded streets
of
/home/esantos/Documents/Books/dracula.txt:also that there is a chapel of old times. We Transylvanian nobles
love
/home/esantos/Documents/Books/dracula.txt:battlements and casements. I love the shade and the shadow, and wo
uld
/home/esantos/Documents/Books/dracula.txt:thought and many blushes, her ill-spelt love-letter, and writing i
n my
/home/esantos/Documents/Books/dracula.txt:"You yourself never loved; you never love!" On this the other wome
n
/home/esantos/Documents/Books/dracula.txt:"Yes, I too can love; you yourselves can tell it from the past. Is
it
/home/esantos/Documents/Books/dracula.txt:to speak more. Oh, Mina, couldn't you guess? I love him. I am blus
hing
/home/esantos/Documents/Books/dracula.txt:words. But oh, Mina, I love him; I love him; I love him! There, th
at
/home/esantos/Documents/Books/dracula.txt:I could love him in time; and when I shook my head his hands tremb
led,
/home/esantos/Documents/Books/dracula.txt:what I would do if I were a man and wanted to make a girl love me.
No, I
/home/esantos/Documents/Books/dracula.txt:began pouring out a perfect torrent of love-making, laying his ver
y
/home/esantos/Documents/Books/dracula.txt:"Yes, there is some one I love, though he has not told me yet tha
t he
/home/esantos/Documents/Books/dracula.txt:my dear, and a fine fellow, or you could not love him--hasn't spok
en
/home/esantos/Documents/Books/dracula.txt:She is so sweet with old people: I think they all fell in love wit
4: esantos@cis106desktop: ~$ grep -E "a[2]" ~/Documents/Books/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
esantos@cis106desktop: ~$
esantos@cis106desktop: ~$ grep -lC 'war' ~/Documents/Books/war-and-peace
.txt
1255
esantos@cis106desktop: ~$ grep -w 'war' ~/Documents/Books/war-and-peace
.txt
Buonapartes. But I warn you, if you don't tell me that this means war,
things, but Austria never has wished, and does not wish, for war. She
to get himself killed. Tell me what this wretched war is for?" she
"You are off to the war, Prince?" said Anna Pavlovna.
to tell you. There is a war now against Napoleon. If it were a war for
"Well, why are you going to the war?" asked Pierre.
wants to go to the war," replied Pierre, addressing the princess
so to me? What have I done to you? You are going to the war and have no
the enchanted circle I cannot escape from. I am now going to the war,
the greatest war there ever was, and I know nothing and an fit for
"But they say that war has been declared," replied the visitor.
of the war that had been announced in a manifesto, and about the
sir, for shame! It would be better if you went to the war.
The colonel told them that the declaration of war had already appeared
heard that the war was being discussed had turned from his partner with
"It's all about the war," the count shouted down the table. "You
All Moscow talks of nothing but war. One of my two brothers is already
intends to expose his precious person to the chances of war. God grant
war has deprived me of one of the associations nearest my heart. I mean
however, for he will leave us again to take part in this unhappy war
war, even here amid fieldwork and the calm of nature--which townsfolk
consider characteristic of the country--rumors of war are heard
"So you are really going to the war, Andrew?" she said sighing.
of her neutrality and draw her into the war; how part of that army was
And the conversation again turned on the war, on Bonaparte, and the
A B C of war or of politics, and that Bonaparte was an insignificant
that there were no political difficulties in Europe and no real war,
and thoughtfully shaking his head. Did he fear going to the war, or was
friendly words to officers he had known in the Turkish war, sometimes
putting them down. When they've been put down, the war with Buonaparte
lay in the general progress of the war. When he saw Mack and heard the
"If I were Tsar I would never go to war," said Nesvitski, turning
and compelled to act under conditions of war unlike anything that had
joins the Allies, Austria's hand will be forced and there will be war.
war or politics but related to high society, to certain women, and to
he would give an opinion at the war council which would be the only one
the war is over, that the Emperor Francis is arranging a meeting with
a former war. "The Emperor will teach your Suvarra as he has taught the
The little princess, like an old war horse that hears the trumpet,
At dinner Anna Mikhaïlovna talked the whole time about the war news
That same day a council of war had been held in which all the members o
The council of war was just over when Prince Andrew accompanied
riding away, say to Czartoryski: "What a terrible thing war is: what
"But they heard him at the council of war and will hear him when he
so contrary to his method of conducting war? Believe me, he is afraid,
me in war the energy of young men often shows the way better than all
"There will be a council of war at Kutúzov's tonight, though; you
plans to Kutúzov's quarters where the council of war was to be
president of the council of war. Weyrother evidently felt himself to be
members of the council of war. They were drinking tea, and only awaited
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