Problem 3 (25 points): Answer the following short coding questions. You are given a main problem split into several parts. <u>Do not write a function!</u>

You are given a file called `StudentSurvey.txt` that gives information about a student's experience at Georgia Tech. Each line of the file consists of a list of a student's survey responses in the following format:

```
<Name>: <Favorite class>, <Hardest class>, <Year in School>
```

Find the number of times that `'CS 1371'` (case-insensitive) was listed as the favorite class. In addition, store the year in school of the students surveyed in a double vector called `years`. When you have finished reading the file, find the percent of students that listed CS 1371 as their favorite class and the youngest person who took the survey. Create a new file called `StudentSurveyResults.txt`. Write the following message in the file:

```
Favorite percent: <percent>%
   Youngest year: <Year>
```

Round the percent to two decimal places. There should be no new line at the end of your file. Note: You are guaranteed to only have one space after every punctuation before starting the next word.

Example:

`StudentSurvey.txt`

```
Buzz: GT 1000, APPH 1050, 10
George P. Burdell: cs 1371, PHYS 2212, 91
Unknown: CS 1371, N/A, 1
```

`StudentSurveyResults.txt`

```
Favorite percent: 66.67%
Youngest Year: 1
```

a. Open `StudentSurvey.txt`. (1 point)

b. Initialize any variables that will be needed inside your loop. Read in the first line of the file. (3 points)

c. Write the while loop that you will use to read through the file. Make sure you find the number of times `'CS 1371'` (case insensitive) is someone's favorite class, and you store each person's year in school in a double vector called `years`. (14 points)

d. Find the percent of students who thought `'CS 1371'` was their favorite class. Find the minimum year in school of the survey respondents. (3 points)

e. Open the file into which you will write the results. Write the results into the new file. Make sure your percentage is rounded to two decimal places (hint: use %.2f), and there is no new line at the end of the file. (3 points)

f. Close your files. (1 point)

SOLUTION for Problem 3. Answer the following short coding questions. You are given a main problem split into several parts. Do not write a function!

You are given a file called `StudentSurvey.txt` that gives input about a student's experience at Georgia Tech. Each line of the file consists of a list of a student's survey responses in the following format:

```
<Name>: <Favorite class>, <Hardest class>, <Year in School>
```

Find the number of times that CS 1371 (case-insensitive) was listed as the favorite class. In addition, store the year in school of the students surveyed in a double vector called `years`. When you have finished reading the file, find the percent of students that listed CS 1371 as their favorite class and the youngest person who took the survey. Create a new file called `StudentSurveyResults.txt`. Write the following message in the file:

```
Favorite percent: <percent>%
Youngest year: <Year>
```

Round the percent to two decimal places. There should be no new line at the end of your file. Note: You are guaranteed to only have one space after every punctuation before starting the next word.

Example:

`StudentSurvey.txt`

```
Buzz: GT 1000, APPH 1050, 10
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Unknown: CS 1371, N/A, 1
```

`StudentSurveyResults.txt`

```
Favorite percent: 66.67%
Youngest Year: 1
```

a. Open `StudentSurvey.txt`. (1 point)

```
fh = fopen('StudentSurvey.txt');
```

b. Initialize any variables that will be needed inside your loop. Read in the first line of the file. (3 points)

```
line = fgetl(fh);
years = [];
numFav = 0;
```

c. Write the while loop that you will use to read through the file. Make sure you find the number of times CS 1371 (case insensitive) is someone's favorite class, and you store each person's year in school in a double vector called `years`. (14 points)

```
while ischar(line)
colonIndex = strfind(line, ':');
commaIndex = strfind(line, ',');
if strcmpi(line(colonIndex + 2:commaIndex(1)-1),'CS 1371')
   numFav = numFav + 1;
end
num = line(commaIndex(end) + 2:end);
years = [years str2num(num)];
line = fgetl(fh);
end
```

d. Find the percent of students who thought CS 1371 was their favorite class. Find the minimum year in school of the survey respondents. (3 points)

```
percent = numFav ./ length(years) .* 100;
minYear = min(years);
```

e. Open the file into which you will write the results. Write the results into the new file. Make sure your percentage is rounded to two decimal places, and there is no new line at the end of the file. (3 points)

```
fh1 = fopen('StudentSurveyResults.txt', 'w');
fprintf(fh1,'Favorite Percent: %.2f\n',percent);
fprintf(fh1,'Youngest Year: %d',minYear);
```

f. Close any open files. (1 point)

```
fclose(fh);
fclose(fh1);
```