Homework 2

Survey Methodology:

A survey was conducted at UC Berkley for students enrolled in statistics courses there were a total of 3000-4000 students. Students from Statistics 2, Section 1, in Fall 1994 were chosen to participate. Students were selected **based on their participation in the second exam** of the semester, which took place one week prior to the survey. There were **314 eligible students**. From this group, **95 students were randomly selected** to complete the survey. Ultimately, 91 out of the 95 selected students submitted complete responses. Each of the 314 students was assigned a unique number. A pseudo-random number generator was used to select 95 students for the survey, ensuring anonymity to promote honest responses.

The survey included questions on how often students play video games and their likes and dislikes regarding video games. Responses that were left unanswered or improperly answered were coded as 99. Students who had never played video games or expressed a strong dislike for them were instructed to skip many questions.

Variables measured in survey part 1:

1. Time: # of hours played in the week prior to survey
2. Like to play: 1=never played, 2=very much, 3=somewhat, 4=not really, 5=not at all
3. Where play: 1=arcade, 2=home system, 3=home computer, 4=arcade and either home computer or system, 5= home computer and system, 6=all three
4. How often: 1=daily, 2=weekly, 3=monthly, 4=semesterly
5. Play if busy: 1=yes, 0=no
6. Playing educational: 1=yes, 0=no
7. Sex: 1=male, 0=female
8. Age: Student's age in years
9. Computer at home: 1=yes, 0=no
10. Hate math: 1=yes, 0=no
11. Work: # of hours worked the week prior to the survey
12. Own PC: 1=yes, 0=no
13. PS has CD-Rom: 1=yes, 0=no
14. Have email: 1=yes, 0=no
15. Grade expected: 4=A, 3=B, 2=C, 1=D, 0=F

Attitude Questions asked in second part of survey:

The was from a second part of the survey that covers whether the student likes or dislikes playing games and why. These questions are different from the others in the more than one response may be given.

1. What types of games do you play? Select at most three answers. (those who said that they have never played a video game or **did not like to play video games were instructed to skip this question**.)
    a. Action
    b. Adventure
    c. Simulation

d. Sports
e. Strategy

2. Why do you play the games you checked above? Select at most three answers

   a. Graphics/Realism
   b. Relaxation
   c. Eye/hand coordination
   d. Mental Challenge
   e. Feeling of mastery
   f. Bored

3. What don't you like about video game playing? Select at most three answers. (All students were asked to answer this question)

   a. Too much time
   b. Frustrating
   c. Lonely
   d. Too many rules
   e. Costs too much
   f. Boring
   g. Friend's don't play
   h. It is pointless

Dataset

1. videodata.txt - survey part 1
2. videoMultiple.txt - survey part 2

Questions to be aswered for Analysis Section of the Report

1. Provide an estimate for the fraction of students who played a video game in the week prior to the survey. Provide both a point estimate and an interval estimate for this proportion. Explain the distinction between the reasoning behind the two estimates. (save final result of point estimate as *point_estimate_fraction*, interval estimate as *lower_interval_estimate_fraction*, *upper_interval_estimate_fraction*)

2. Check to see how the amount of time spent playing video games in the week prior to the survey compares to the reported frequency of play (daily, weekly, etc). How might the fact that there was an exam in the week prior to the survey affect your previous estimates and this comparison?

3. Provide a point estimate and an interval estimate for the average amount of time spent playing video games in the week prior to the survey. Keep in mind the overall shape of the sample distribution. A simulation study may help determine the appropriateness of an interval estimate. (save the result of point estimate as *point_estimate_average*, interval estimate as - *lower_interval_estimate_average*, *upper_interval_estimate_average*)

4. Consider the **attitude** questions. In general, do you think the students enjoy playing video games? If you had to make a short list of the most important reasons why students like/dislike video games, what would you put on the list? Don't forget that those students who say that they have never played video games or do not at all like video games are asked to skip over some of these questions. So, there may be many nonrespondents to the questions as to whether they think video games are educational, where they play video games, etc. (save the list as *reasons_for_likeliness*)

5. Look for the differences between those who like to play video games and those who don't. To do this, use the questions in the last part of the survey, and make comparisons between male and female students, those who work for pay and those who don't, those who own a computer and those who don't. Graphical display and cross-tabulations are particularly helpful in making these kinds of comparisons. Also, you may want to collapse the range of responses to a question down to two or three possibilities before making these comparisons.

6. **(Extra credit)** Further investigate the grade that students expect in the course. How does it match the target distribution used in grade assignment of 20% A's, 30% B's, 40% C's and 10% D's or lower? If the nonrespondents were failing students who no longer bothered to come to the discussion section, would this change the picture?