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## Public Health 691f: Practical Data Management and Statistical Computing

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### Assignment 5: Group Project Designing and Piloting Data Collection, Database Design and Data Entry

The project described below is to be completed by a group of 4-5 students working collaboratively. You will be given class time every class session in the next few weeks to meet with your group, but you may also need to arrange some meeting time outside of class along with communicating electronically. While it is expected that individuals take on different roles in producing the final project, ***it is important that the effort be collaborative***. Everyone in the group should contribute some significant piece to the final project and everyone should be able to contribute, *at least in group discussion*, to all of the parts.

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### Testing Vision under Varying Conditions

Your study will be conducted to investigate the impact of varying light, distance or other factors (*your choice*) on [measuring visual acuity](#).

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#### ***“Suggested”*** Study Protocol Outline

1. Invite subject to participate; explain study protocol (and pilot nature of study).
  2. Ask subject to complete a brief background questionnaire including
    - a) basic demographics
    - b) history of corrective eyewear
    - c) current corrective eyewear
    - d) other factors you deem relevant or of interest.
  3. Test subject’s vision under multiple conditions; record information.
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## Part I: Operations Manual and Database (2 weeks)

### 1. Design two separate Data collection forms:

- a. Subject questionnaire
- b. Visual acuity record

### 2. Create instructions for the data collectors. Consider:

- How are subjects recruited? What should a potential participant be told?
- What information/instructions should be given to participants?
- How should the forms be completed?  
As a group, decide if the questionnaire will be subject- or interviewer- administered
- How is vision test to be completed? What setting? What conditions? Any equipment needed?

Your goal is to make data collection as consistent as possible – each one of you will be collecting data independently.

### 3. Create code sheets (1 for each data collection instrument) and a coding manual (data dictionary) for your project.

### 4. Collect Data.

Each member of the group must collect data from ~10 different subjects. You may ask friends, family – whoever you can find to cooperate. You may even start with each other (include yourselves as subjects).

***This project is a pilot test of your data collection and data management system – we aren't concerned with sampling issues, or generalizability of the results.***

### 5. Create instructions for reviewing and coding the forms in preparation for data entry. Devise

- a. Forms for keeping track of data collection and coding of forms and data entry.
- b. Instructions for use of the data management forms – for example, how many forms per batch, what to record on the form.
- c. Instructions for review and coding of forms prior to data entry.

### 6. Organize and code the forms in preparation for data entry.

- a. Use the instructions and forms you devised to divide your forms into batches for processing.
- b. **Code the forms in preparation for data entry.**  
***NOTE: DO NOT ENTER THE DATA*** – your data entry staff will consist of another group of students from the class.

7. **Create an Operations Manual for your Study.**

Organize copies of all of your forms and instructions into an Operations Manual for the study. The Operations Manual should include:

1. A brief outline of study design and protocol.
2. Copies of data collection forms.
3. Instructions for data collection.
4. Coding manual and code sheets.
5. Instructions for managing forms in preparation for data entry, including grouping forms into batches for reviewing and coding in prep for data entry.
6. Instructions for data entry and verification – including where to locate database file on U: drive; how to download file; open it; how to save...

8. **Design a database (data tables and forms) using MS Access for entering the data you collect.**

a. ***You are designing the data entry system for data entry staff, not for your own use.***

- Use validation rules to limit valid values, as appropriate.
- Make use of skip patterns where applicable.
- It is up to you to decide how much, if any, on screen instructions are included in your form design.

b. ***Write instructions for data entry personnel*** (include in operations manual).

These will be given to the data entry staff, along with reviewed and coded batches of forms prepared for data entry.

The instructions should include:

- i. Where to locate the database (.accdb) file; how to download it from the U: drive and open it.  
(**Note:** *we will be using course U:drive area for storing and sharing files*).
- ii. Any special instructions needed for data entry – e.g., how to find the relevant form within the database.
- iii. **How to verify data entry.**
- iv. How to save file and upload file to the U:drive when a session of data entry is finished.
- v. Documentation of work done (e.g., any notes to write on monitoring forms).

Assume that your data entry staff have little or no experience with data entry and data management and need explicit, step-by-step instructions. Data entry instructions should include a method for keeping track of which forms have been entered, and which forms have been verified – when and by whom.

**Part I is due at the start of class on Tuesday, October 25, 2011.**

Each group should have ready to hand in:

- A. **2 copies** of your study Operations Manual (*1 for me, one for data entry staff*).
- B. A set of coded forms in 4-5 batches ready for data entry.

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## Part II: Data Entry and Verification (1 week)

1. Each group will receive a copy of the Operations Manual of another group, along with the batches of forms prepared for data entry.

***Each member of the group*** is expected to enter some forms and verify some forms according to the instructions provided.

2. **Critique the system devised by the other group.** Remember that critique is not a synonym for criticize. (*What worked well; what was confusing; what didn't work; ...*) Focus on the overall design of the system as well as how it functioned for data entry. The critique should be a collaborative effort – ***I expect one coherent report from each group.***

3. **Write a brief (1-2 page) reaction paper to the group project.**

- What did you learn from the project?
- Did your group function well? If not, why not?
- Did you feel able to contribute to the project?
- Did you learn from others in the group?
- What would help the process work more smoothly?

***I expect one reaction paper from each student.***

**Your critiques and reaction papers are due at the start of class on Tuesday, November 1, 2011.**