
LICENSE PLATE DATA POSTER PROJECT INFORMATION

Due Date: Wednesday, July 22nd, 2009 at the beginning of class (early submissions encouraged)

Summary: You are to construct a graphic display, highlighting the majority of the topics discussed in this course during this semester, using a data set compiled of 3-digit license plate numbers. This project will count as a double-weighted homework grade, which contributes towards 20% of your final grade for the course.

A few details about the “look” of your project: Your final project should be *no smaller than 16 inches by 20 inches* and can be constructed of the material of your choice, but a piece of foam board will be provided for you by your instructor. This is not intended to be a project that will be on display at the Nelson-Atkins Museum, but should be an exhibit that shows you are aware of what types of graphic displays we learned about in class and how to construct them. A good rule of thumb in constructing your displays (graphs or charts) is that they should be *recognizable*, if not readable, from about 4 feet away. This is not intended for you to create one *huge* bar graph visible from Nebraska, but a basic convention to keep in mind for the sake of the viewer(s).

Required Elements: Your poster is intended to highlight the topics covered in class, so there are some necessary elements that you should be certain are included somewhere on your poster. Your poster should identify:

- The variable under observation (where did our data come from)
 - Classify it as a Numerical or Categorical Variable, as well as whether it is Discrete or Continuous, if necessary.
- The target population
- The sampling frame
- The sampling method
- The N -value, n -value in our case
- The measures of location for the data set (mean, median, and quartiles, as well as the mode, if it exists)
- The measures of spread for the data set (including the range, interquartile range, and standard deviation)
- A 5-Number Summary of the data set (this does not have to be included all in one place, but as long as all five values are identified somewhere on the project, that is acceptable)
- Identify the *deciles* of the data set (10th, 20th, 30th, 40th, ... 90th percentiles).
- A short description as to whether the variable is *normally distributed* and what indicator(s) led you to your conclusion. Most importantly, a reference to whether a bar graph for our data is mound-shaped (bell-shaped) would be an acceptable argument as to whether the data is normally distributed overall.

Along with the information included above, your poster must include **TWO** of the following display options to give a graphic representation of our data set

- **HISTOGRAM HYSTERIA:** A frequency histogram **AND** relative frequency histogram for the data set

- These displays must be separate graphs (not just a matter of re-labeling the vertical axis), but include an appropriate title and labels for each axis
- The displays must have different values for the class intervals (i.e. one histogram done with class intervals of 50, the other with class intervals of 100, or a similar way of distinguishing the data). Keep in mind that class intervals typically categorize our data into somewhere between 5 and 20 classes.
- **PASSING PIE FANCY:** TWO circle graphs/pie charts, similar to the histograms above, with different class intervals and different values for each class.
 - One graph could show the *percent* of the sample that made up each category, the other could show the *frequencies* for each category.
 - The graphs must have different class intervals.
- **BOXPLOT BREAKDOWN:** Choose either of the below options and construct an appropriate display using boxplots (or box-and-whisker plots), making sure to use appropriate *labeled* scales on your display.
 - *The State of Kansas v. MATH 225, et al:* Construct a boxplot for our data set on the same set of axes as a boxplot for the “theoretical distribution” for our target population.
 - *Comparative Boxplots:* On the same set of axes, sketch a boxplot for our data set as a whole, as well as an individual boxplot for each individual’s data in the class (and thank your lucky stars that the class size was manageable for this task, instead of a class of 30 people). For anonymity, it would be best to label individual’s as “Student 1, Student 2, Student 3” instead of using individual’s names.

The following page includes the grading rubric that will be used in the scoring of your projects.

For any additional questions or clarification, please contact your instructor at skeltne1@jccc.edu.

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The rubric below will be used in determining your grades for this project.

CATEGORY	4 out of 4	3 out of 4	2 out of 4	1 out of 4	SCORING
GRAPHICS - CLARITY	Graphics are all in focus and the content easily viewed and identified from 6 ft. away.	Most graphics are in focus and the content easily viewed and identified from 6 ft. away.	Most graphics are in focus and the content is easily viewed and identified from 4 ft. away.	Many graphics are not clear or are too small.	_____/4
GRAPHICS - RELEVANCE	All graphics are related to the topic and make it easier to understand. Any borrowed graphics have a source citation.	All graphics are related to the topic and most make it easier to understand. Any borrowed graphics have a source citation.	All graphics relate to the topic. Most borrowed graphics have a source citation.	Graphics do not relate to the topic OR several borrowed graphics do not have a source citation.	_____/4
LABELS	All items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Almost all items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Several items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away.	Labels are too small to view OR no important items were labeled.	_____/4 × 2 = _____/8
TITLE	Title can be read from 6 ft. away and is quite creative.	Title can be read from 6 ft. away and describes content well.	Title can be read from 4 ft. away and describes the content well.	The title is too small and/or does not describe the content of the poster well.	_____/4
REQUIRED ELEMENTS	The poster includes all required elements as well as additional information.	All required elements are included on the poster.	All but 1 of the required elements is included on the poster.	Several required elements were missing.	_____/4 × 6 = _____/24
ATTRACTIVENESS	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.	_____/4 × 4 = _____/16

TOTAL _____/60

= _____%