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Project 1 Draft Worksheet

MSDS 6372 Fall 2015

Please fill out the following worksheet and submit it to the course website by September 20 at 11:59 p.m. in your local time zone.

1. Type the title of your project in the space below. The title can change as you learn more about your data.
   1. How To Be Cool: There’s Always A Price To Pay
2. Type the research question below. The research question must be a hypothesis that is testable with data.
   1. What factors drive the cooling load in residential buildings? Is the overall height of the building important when controlling for other factors known to contribute to the cooling load of a building?
3. Who or what is the target population for the study?
   1. Residential buildings in Athens, Greece
4. Who or what are your subjects?
   1. Simulated buildings (using ecotect) in Athens, Greece
5. What is the response variable for your study? What are its units?
   1. The Cooling Load in tons
6. What explanatory variables have been measured/gathered to test the hypothesis? Please fill out the table below. The first two rows are given as examples. You can delete them when you type in your own variables. Add as many rows as you need.

|  |  |  |  |
| --- | --- | --- | --- |
| Variable Name | Type | Units | Definition |
| Relative Compactness | Quantitative | 0 to 1 | Compactness of living quarters (small to large) |
| Surface Area | Quantitative | Meters | Total surface area of building |
| Wall Area | Quantitative | Meters | Wall Area in meters, internal walls |
| Roof Area | Quantitative | Meters | Roof area in meters |
| Orientation | Qualitative | 2,3,4,5 | Orientation of the building (TBD direction not available in article) |
| Glazing Area | Quantitative | Meters | Total glazing area in meters (likely interaction b/w area and distribution, as well as orientation potentially) |
| Glazing Area Distribution | Qualitative | N/A | 1 (25% on each side),2 (55% on north, 15% all else) 3 (55% on east, 15% all else) 4 (55% on south, 15% all else) 5 (55% on west, 15% all else) |

1. Give the source for your data. It could be “work database” or the URL for a data set you found on the Internet or a reference to some other source. The point is that someone else should be able to locate the same data (well, except in the case of work data).
   1. <http://129.67.184.129/tsanas/Preprints/ENB2012.pdf>
   2. UCI Machine Learning
2. Post any code that you have used to enter or analyze the data here.

PROC IMPORT DATA = energy;

PROC SGSCATTER DATA = energy;

MATRIX cool compact orien surface wall roof glaze glazedist;

RUN;

proc univariate data=energy;

var cool;

histogram cool;

qqplot cool;

histogram compact;

histogram glaze;

histogram surface;

histogram wall;

run;

PROC CORR DATA = energy;

RUN;

1. If you have already run some preliminary models, please copy and paste the results, starting with a new page, to this document.