

MAT259: PROJECT 2

Grant McKenzie

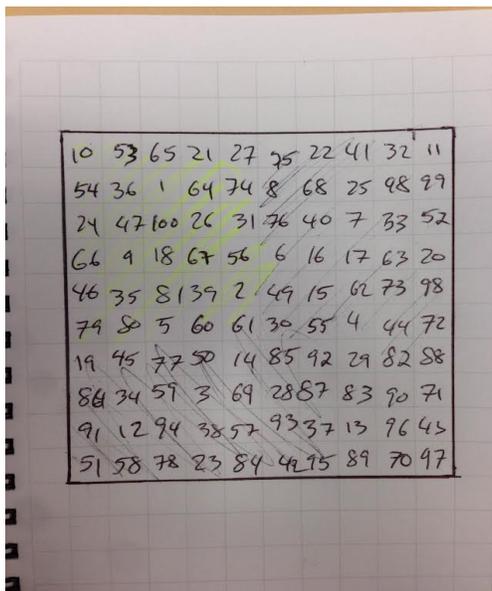
CONCEPT

A "signature" does not only apply to the human autograph, but also applies to data and human behavior. For example the "check-out" history of a specific book could be used to describe the book. Rather than individual books, I plan to explore the "check-out signatures" of specific classes of material in the Seattle Public Library. I believe that certain classes of material have more similar check-out signatures than others and a visualization of this data would be quite informative. For example patrons of the library may checkout books related to Fishing and Cooking at similar times which show signatures very different than books related to Ice Hockey.

DATA

The top (based on total check-out) Dewey Classes (before the decimal point) will be extracted as the foundation for this project. A vector of check-out times will be extracted aggregated to time of the day. Normalizing this data will produce a vector with 10 entities (10 opening hours of library) that sums to 1 for each of the 100 Dewey Classes.

DOODLE



DESIGN DECISIONS

A self-organizing-map design will be used to organize the Dewey Classes based on the signatures. Those with more similar check-out signatures would be grouped together in the grid while those with dissimilar check-out signatures would be farther apart. The grids will be labeled with the Dewey Class. The saturation of the color of the grid will be based on variance or entropy of the check-out signature.