MAT 259, Winter 2015

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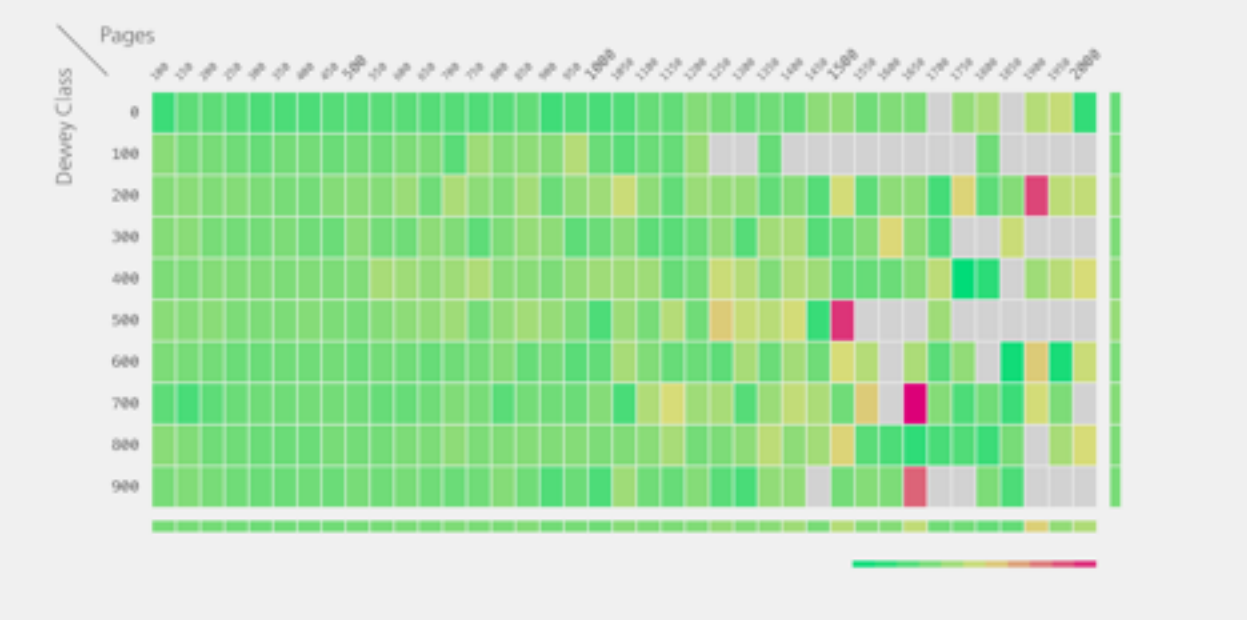
2D Spatial Map, Loan Period vs. Pages and Dewey Class

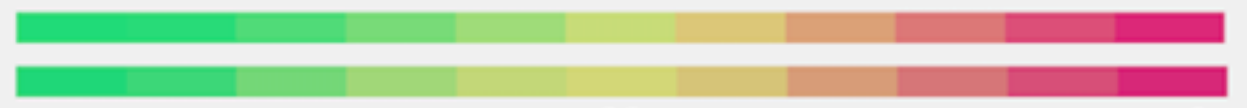
Does longer books get to checked out for longer time? Is there specific subject of books that would be checked out for longer time? This visualization investigates loan period of books with respect to page lengths and Dewey Classification Numbers(hereafter referred to as "Dewey number") in order to answer those questions above.

The MySQL query will get loan period of books of which the number of pages are longer than 100, and group those by length of pages (in scale of 50 pages) and Dewey number (in scale of 100).

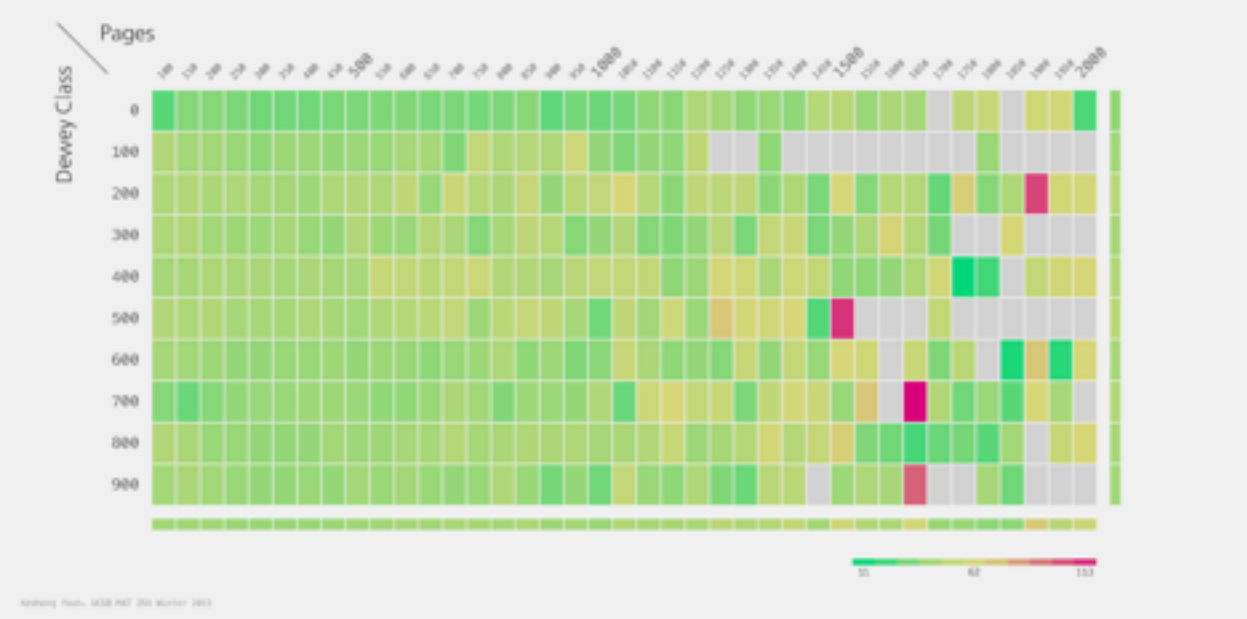
For the visualization, 2D spatial map with x axis representing pages and y axis representing Dewey number will be presented. Cells in the map will be colored with mapped value of their loan period. Traditional color palette of green-yellow-red was selected. Gray cells indicated no data.



Above is the first draft. The problem here was that one could not see the differences well in the lower value area (green). So the gradient generating function was modified to enlarge the influence of yellow to the lower value area.



These two gradient bars shows the original (linear) gradient and modified (with sine function) gradient. only region of green-yellow was modified and though it is not drastic in above image, it gave quite improvement in overall visualization.



This is the final output and it is seen that the green area is much more distinguished.

From the visualization, one can tell that there is very weak correlation between page length and loan period, and almost no correlation between Dewey number and load period. (Fin)

Codes (SQL, Processing) can be get at below link:
`https://github.com/younkhg/mat259/tree/master/hw2`