CIS 620 Assignment

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October 16, 2006

The idea was to see whether there is a correlation between the average price of a home in a city and the cost of ads for mortgage refinancing in that city. We wanted mostly large cities, but in also included North Palm Beach and Urbana to see if they would be outliers.

The cities we used were: Atlanta, Chicago, Cleveland, Dallas, Detroit, Kansas City, Memphis, Minneapolis, Nashville, New York City, North Palm Beach, Oakland, Philadelphia, Pittsburgh, Richmond, San Diego, San Francisco, Seattle, St Louis, Urbana.

Figure 1 shows the (lack of) correspondence between the average price of a house and the search terms "refinancing x" and "mortgage loan x", where x is the name of the city. There is a stark non-correlation. For example Philadelphia has the cheapest homes (on average 79k) but the third-highest ad-price for the term "refinancing x" (after Chicago and San Diego). The third most-expensive city (Oakland) is third-cheapest for the term "mortgage loan x"

We explain this by the number of ads that are placed (i.e. by the popularity of the acution). Figure 2 shows the number of bids vs the price of the top bidder for the term "refinancing x." The general trend is that the entries are bounded above (although not very cleanly) by a line. The anomalous entry (at 4 bids with top price $5) is "refinancing New York City". Our best guess is that this is because of the more popular auction "refinancing New York" which is full (at least 40 entries), and the few people bidding on "refinancing New York City" are bidding based on the prices for "refinancing New York."

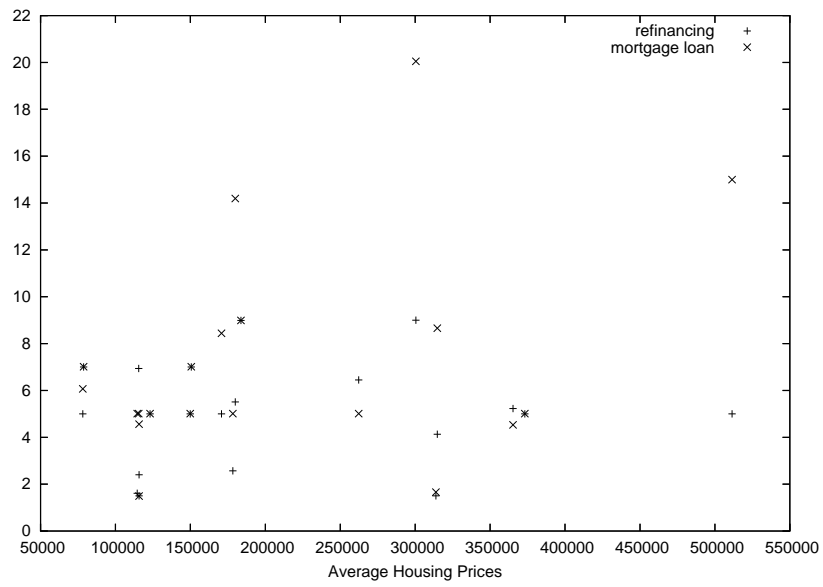Figure 3 shows a similar graph for the search "malpractice lawyer x." This shows the trend more cleanly.

Figure 1: Housing prices plotted against top price of the query terms "refinancing x" and "mortgage loan x."
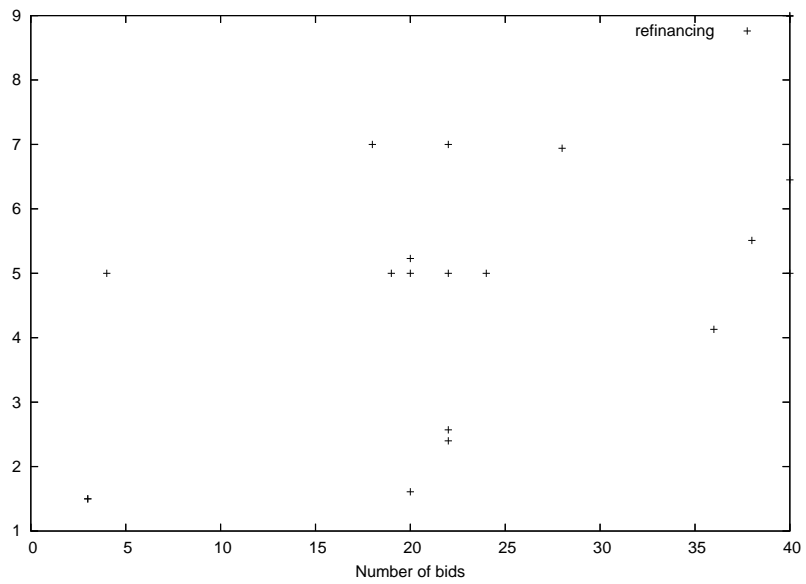
Figure 2: The number of bids for the term "refinancing x" vs the price for the top bid.
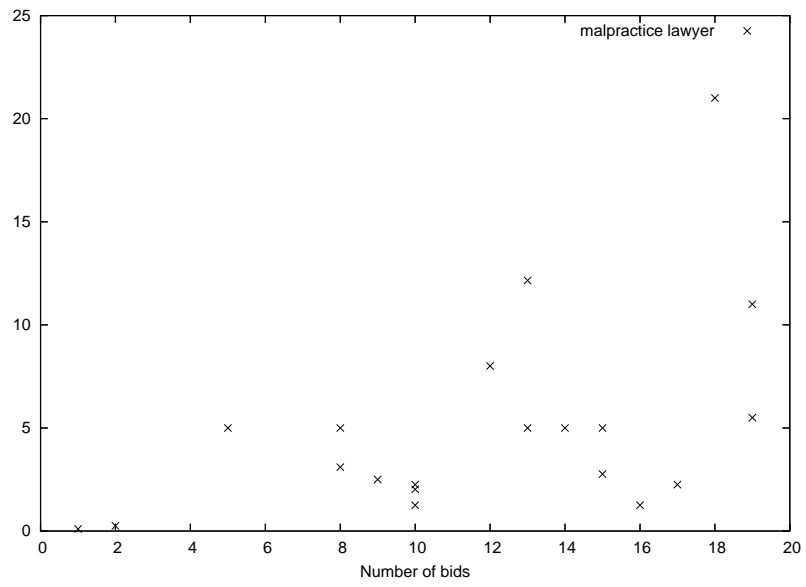
Figure 3: The number of bids for the term "malpractice lawyer x" vs the price for the top bid.