CIS 620 Overture Data Analysis
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My initial plan was to investigate the relationship between the price of auto insurance in a city X and the price of a search for "X auto insurance." Unfortunately, auto insurance companies apparently don't like to publish lists of average prices by city, so I decided instead to look into the relationship between the average rent in city X and the price of a search for "X apartments."

The cities I chose to examine were the 58 most expensive U.S. cities for renters in the fourth quarter of 2005 (source: http://realestate.msn.com/Rentals/Article.aspx?cp-documentid=262175). I first tried looking up the price of "X apartments" for each city X. (Here whenever I say price, I'm talking about the second place search bid.) My hypothesis was that cities with higher average rent would have higher prices for search bids. In reality, this does not seem to be the case. In fact, I found that there was a *negative* correlation (about -0.187) between the average rent of a city X and the price for "X apartments."

Interestingly, the cities with the highest rent tend to be on the coasts, while the cities with the highest costs for "X apartments" are almost entirely in the Midwest and South. In fact, five of these ten most expensive searches are located in Texas. Initially I thought this might be due to a single set of advertisers placing similar bids across cities, but it turns out that these ads are placed by a variety of different groups. While the first place bidder is www.apartmentfinder.com in three of five the Texan cities, their second place bidders are all unique. Apparently the phrase "Everything is bigger in Texas" applies to marketing as well.

Top ten most expensive cities for renters:

1. New York City ($2400)
2. San Francisco ($1573)
3. Los Angeles ($1421)
4. Orange County ($1384)
5. San Jose ($1330)
6. Boston ($1216)
7. San Diego ($1213)
8. Oakland ($1210)
9. Washington, DC ($1160)
10. Fort Lauderdale ($1104)

Top ten most expensive cities for the search phrase "X apartments" (second place bid):

1. Dallas, Houston ($3.49)
3. Memphis ($3.00)
4. Atlanta ($2.24)
5. Austin ($2.13)
6. Oklahoma City ($1.61)
7. Jacksonville ($1.50)
8. San Antonio ($1.39)
9. Fort Worth ($1.36)
10. Philadelphia ($1.25)

Since my first hypothesis was debunked, I decided to check if there might be a correlation between the average price of rent in city X and the price for a search on "X mortgage" since companies offering mortgages can make a lot more money per click, especially in cities where the

cost of rent (and thus perhaps the cost to buy) is high. I found that there was indeed a positive correlation here, though not as strong as I might have thought (approximately 0.263).

Once again, cities in Texas are pulling in the top prices, but this time the tie between Houston, Austin, and San Antonio is no coincidence. The top bidder for all three is www.texasloans.com with a bid of $8.50, with www.texaslending.com in second place one cent behind.   San Francisco, Los Angeles, and Riverside also share their top bidder (www.ourmortgageagent.com at $20.02), though their second place bids and bidders do differ fairly dramatically.

Top ten most expensive cities for the search phrase "X mortgage" (second place bid):

1. San Francisco ($19.00)
2. Orlando ($8.99)
3. Houston, Austin, San Antonio ($8.49)
6. Sacramento ($8.39)
7. Los Angeles ($8.26)
8. Riverside ($7.73)
9. Denver ($7.57)
10. Fort Lauderdale ($7.37)

The only conclusion I can draw from this experiment is that bidders do not yet have enough information to optimize their bids (not really a surprise).