The R code that built this can be found in **https://github.com/jrfarrer/oidd898_hw2**.

1) 5 cities to open your first stores

In order to create a set of 5 cities to open the first stores in I started with the 298 largest cities in the US and filtered down to the those in the 19 Midwest states specified by the FiveThirtyEight. I attempted to use these in Facebook Ads; however, I did not find the filters useful enough to evaluate individual cities. Instead, I decided to look at the popularity of the words "weed", "cannabis", "marijuana", and "pot" on election day (Nov 8, 2017) across the US[1]. The choice of election day was to identify people curious if the legalization of marijuana was on the ballot. In addition, this allowed each state to get a score. City-level data was not possible. Then, I combined the two datasets ranked the cities based on being in a state with a high-level of popularity for the marijuana-related terms and the largest population. Notably, this forces Colorado cities to the top, though marijuana was not a ballot question, though it was in #1 Billings, Montana (and #13 Fargo, North Dakota).

Table 1: Top 5 Cities to Open Stores

Rank	City	State	Population	Google Trends State Value
1	Billings	Montana	108,869	91
2	Denver	Colorado	663,862	84
3	Colorado Springs	Colorado	445,830	84
4	Aurora	Colorado	353,108	84
5	Fort Collins	Colorado	156,480	84

Figure 1: Attempt to use Facebook Ads
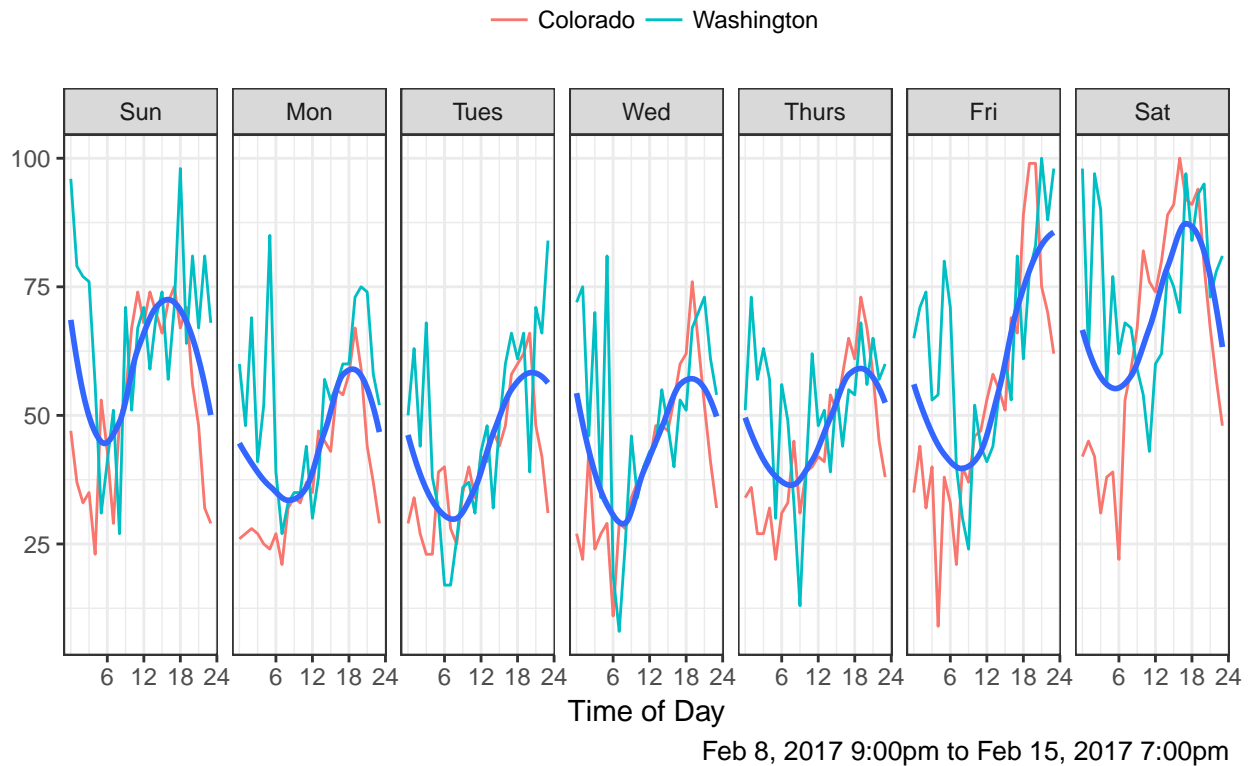
2) Hours your store will be opened

Google Trends only has hourly data if you look at data for the past 7 days. I did this for Washington state and Colorado (separately because it cannot be done combined). As these are two states have legal recreational marijuana people may search for "dispensaries near me". I wanted to find when this was most common. I used terms "dispensary" or "dispensaries" for WA[2] and CO[3] and plotted the two time series below. From this chart, I would have the stores open from noon to 3am each day except Sunday (early close at midnight).

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[1]https://www.google.com/trends/explore?date=2016-11-08%202016-11-08&geo=US&q=weed%2Bpot%2Bcannabis%2Bmarijuana
[2]https://www.google.com/trends/explore?date=now%207-d&geo=US-WA&q=dispensary,dispensaries,dispensary%20%2B%20dispensaries
[3]https://www.google.com/trends/explore?date=now%207-d&geo=US-CO&q=dispensary,dispensaries,dispensary%20%2B%20dispensaries

Google Trends Popularity of 'dispensary' or 'dispensaries'

Feb 8, 2017 9:00pm to Feb 15, 2017 7:00pm

3) 2 foods to sell in your store in addition to the marijuana

Oftentimes our perception of food is more than just the taste. It is also the culmination of advertising messages that shape our feelings toward a food. Like most Americans I dream of hamburgers; however, each time I eat one I am let down by the taste. The years of seeing juicy hamburgers in advertising have made me crave the concept of a hamburger rather than the actual taste. In choosing two foods to sell in addition to marijuana, we need to remember that what is more important is what marketing has best positioned to be complements of marijuana rather than which foods *actually* make sense with the plant. I attempted to create Facebook Ads audiences with different combinations of terms that demonstrated interest in marijuana and affinity to a particular food. I also attempted to find search terms related to "munchies" on Google Trends or find terms correlated with marijuana-related terms using Google Correlate.
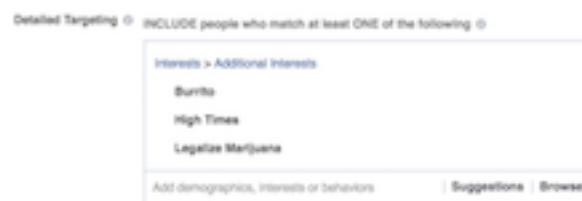

Figure 2: Attempt find correlations with Facebook Ads

Unfortunately, I was unable to find anything that made reasonable sense. In the case of food, it might make sense to go do the Malcolm Gladwell approach to "go with your gut". Moreover, product choice is more likely to be something that can be tested and adjusted. As such I would recommend:

Food	Justification
Doritos	Item marketed as one to crave
Burritos	Heavier, also associated with cravings