**Porposal of Group Project 1\_v2**

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**Scope of our research (highlighted in RED items I added for group discussion/comments)**

* The objective of our study is to explore relationships between Patient Experience rating, Mortality rate, and Total Hospitals (per capita) by County (total hospitals per 10,000 population)
* Summary will be presented by County and by Year (2016).
* Summary will include Glossary

**Create a short 1 page proposal listing out each of the following:**

* Project Title : Relationship between Patient Experience rating, Mortality rate, and Total Hospitals (per capita) by County (total hospitals per 10,000 population)
* Team Members

Rabia Otry, Vilma Santos, Rohan Mohindroo, Angang Li

* Project Description/Outline
  1. Aggregate data from multiple sources to create one Data Frame (DF).
     + Save raw data as CSV files for Patient Experience by Hospital (PE), Mortality Rate (MR), and Population Size (PS)
  2. Add Patient Experience summary rating by Hospital from HCAPHS survey into DF
* Loop through HCAPHS survey, collect fields for data frame: Hospital name, State, City, Address, # of collected surveys, and Summary Star Rating
  1. Add County information from Google Maps into DF
* Use API to collect County information from Google for all Address in DF
  1. Add mortality rate from CSV file into DF
     + If County data in DF equals County data in MR\_csv file, collect Mortality Rate
  2. Add population size into DF
     + If State data in DF equals State data in PS\_csv file, then
     + If City data in DF equals first word on City data in PS\_csv file, then
     + Collect Population Size
  3. Print Data Frame
  4. Create visuals in Matplotlib / Seaborn / Tableu
     + Hospitals in Counties (heat map)
     + Total Hospitals (per capita) by County
     + Patient Experience vs Total Hospitals (per capita) by County
     + Mortality vs Total Hospitals (per capita) by County
* Research Questions to Answer

Is there compelling relationship between Total Hospitals and Hospital Patient Experience? Total Hospitals and Mortality Rate?

Specifically,

* 1. Does # of Hospitals serving the population affect Hospital Patient Experience?
     + Does Population Size alone affect Hospital Patient Experience?
     + Does # of Survey Responders alone affect Hospital Patient Experience?
  2. Does # of Hospitals serving the population affect Mortality Rate?
     + Does Population Size alone affect Mortality Rate?
     + Does # of Hospitals alone affect Mortality Rate?
  3. Is there a direct relationship between # of Hospitals and Population Size?

Note : Evolvement over time not possible since we only have 2016 data

* Data Sets to be Used
  1. HCAPHS data, queried by hospital name from data.gov
  2. Google maps
  3. Mortality data
  4. Census data
* Rough Breakdown of Tasks (TBD)