Capstone Lightning Talk

1. BTC/Asset Price
   * Problem statement: Predict future BTC price movements
     + Predict price of bitcoin
     + Predict whether the price will be higher or lower than what it started from in a given day/timeframe
     + Predict when to go long/short, and give the next signal for when to flip positions
     + Perpetual short
   * Audience: Anybody looking to allow a ML model to make trades for them
   * Success metric: Accumulated portfolio gain over a given year compared to baseline which would be holding that asset over that same period (baseline may change)
   * Data source: Historic prices of BTC
   * Potential challenges: Homoskedasticity, model decay, black swans
2. NBA Stats
   * Problem statement: Predict stats of players
     + Fantasy
       - Make projections on players stats and which players to pick
       - Rankings of players based on projected stats
       - Build out a model which helps a person pick their players given the categories used in the league, as well as what players they have already picked
     + Sports betting
       - Make predictions on whether a player/team will go over or under
       - Predict a given stat line for the night for a given player/team
   * Audience: Anybody who plays in fantasy leagues or partakes in sports betting
   * Success metric:
     + For fantasy, to be determined since the season is yet to play out. Perhaps build a model which projects stats for the last season, then compare projections to those stats from last season
     + For betting, whether a user finishes net positive or negative given their bets
   * Data source: Player stats
   * Potential challenges: Stats against a player vs a team, injuries, outside influences within a person’s life not accounted for leading up to a game
   * Side note: Would be interesting to do research on how Vegas comes up with their sports lines
3. Electric vehicles
   * Problem statement: Predict future use of electric vehicles within USA
     + Charging stations
     + Interactive map of the USA
     + Cars
   * Audience: Car manufacturers, car dealerships
   * Success metric: To be determined
   * Data source: <https://catalog.data.gov/dataset/electric-vehicle-population-data>
   * Potential challenges:
     + Previously, electric vehicles were all bought up and dumped by competitors (various documentaries on this). Scenario like this would most likely not be accounted for in future projections, and to use EV car sales from this time may be a negative to the model
     + Various factors such as charging stations, number of vehicles on market, will have to be taken into account and their growth will most likely be beneficial to predict as well
   * Distance to urban zone, looking at specs of cars for use