- **Part One: TVT Demand**
  - Part one "Monthly Demand" finds the monthly demand of all TvT stations of a specific line for all months
  - "Station" file visualizes the demand of a station over a year
  - "Demand by Day" finds demand by station every single day
  - "Hourly demand" finds demand based on time of day
  - "Weekday demand" finds demand based on day of the week
- **Part Two and Three: Introduction to LODES Data**
  - "Polygon" reduces all of the LODES data in a state to just a specific polygon
  - "Block Group" finds the aggregated demand of each block group in the polygon (not used)
  - "Correlate" correlated aggregate block group LODES data with TvT data for that block group
- **Part Four: Failed Algorithm**
  - An algorithm was attempted which correlated every lodes data point to the closest station based on coordinates. This failed because coordinates of lodes apparently are not exact. There seems to be one set of coordinates per block group
- **SPRING TERM**
  - **Part One: Osmnx and Networkx**
    - "OsmnxNetwork" uses both libraries to create an algorithm that determines the closest stop to each lodes data point
    - It finds which points are not within the threshold of any station (either 300 or 500 meters)
    - It then maps these points (once again the LODES coordinate issue is encountered)
  - **Part Two: Optional Stops**
    - At the end of OsmnxNetwork, the optional stops supplied by company are added to the network and demand is allocated once again, improving the coverage only marginally
    - "Optional Stops" opens up the possibility of allocating all demand not into the whole network, but line by line
    - It later creates an algorithm that finds location of x new optional stops. It does so by ranking all nodes that are not within a threshold of mandatory stations in terms of how much more new demand they allocate. The user chooses the x value and these stops are mapped into the network
    - This algorithm is later refined to make sure that optional stops are also not within a threshold of each other
    - At the end, a plot is made which analyzes the marginal demand covered by every new optional stop
  - **Part Three: Demand as a Pair**

- "Allocating Pairs" redefines the whole allocation process by considering each demand point not as a single point but as the origin-destination pair
- It allocates all demand whose home and work both fall within a threshold of stations that are on the same line
- Finally, small parameters such as making sure that the order of the routes of the company is respected are included into the allocation process