***short documentation***

**Mandatory Assignments:**

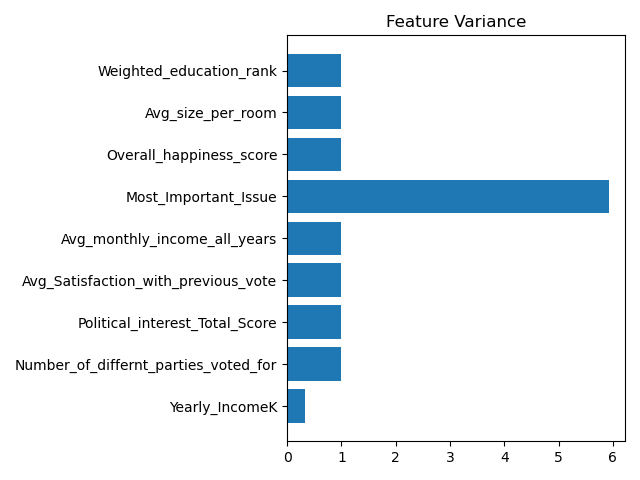
**Stable Coalition:**

**for built stable coalition, we look on the problem from 2 different side:**

1. **Clustering – split all examples to two different groups using a distance function using continuous values, when in each group has similar examples. the big group is the coalition and the smaller group is the opposition.**
2. **generative modeling – we will use the probability function properties to compare the different parties to find their similarities and differences. for example, for gaussian naïve base, we can get from the model the expectation and variance and use them to compare between the different parties and build two different groups, the big group is the coalition and the smaller group is the opposition.**

**Stable Coalition using clustering:**

**We use 2 models that we learn in the class for clustering model K-means and Gaussian mixture. first, we found the hyper parameters using k fold cross validation, we define evaluate function to evaluate the best hyper parameters. The evaluate function is to find a group that contains as many voters from a specific party and does not split voters into several different groups. we set a certain threshold value from which we decide that a group belongs to a specific group, for example 70%.**

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**K-means:**

**Gaussian mixture:**