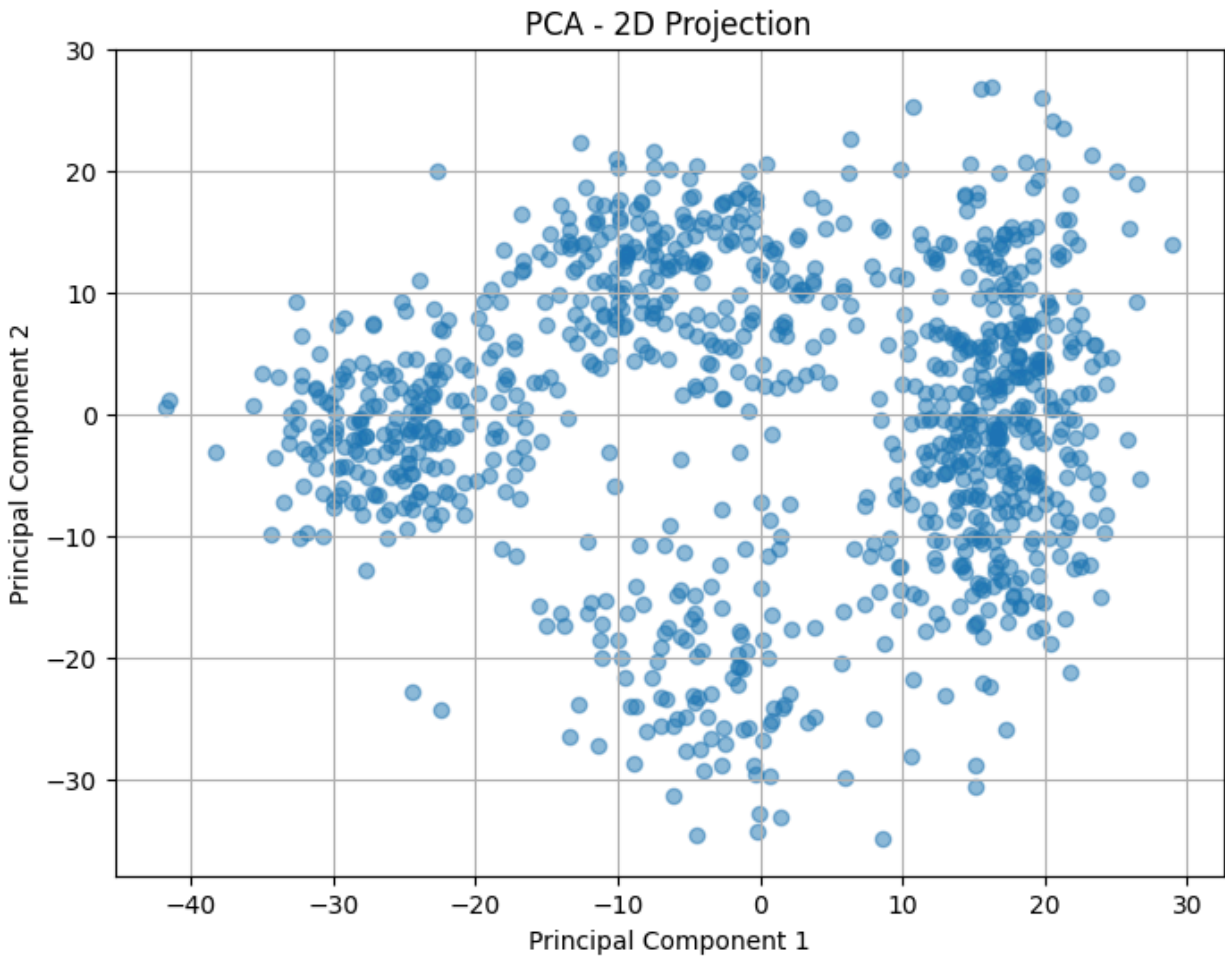
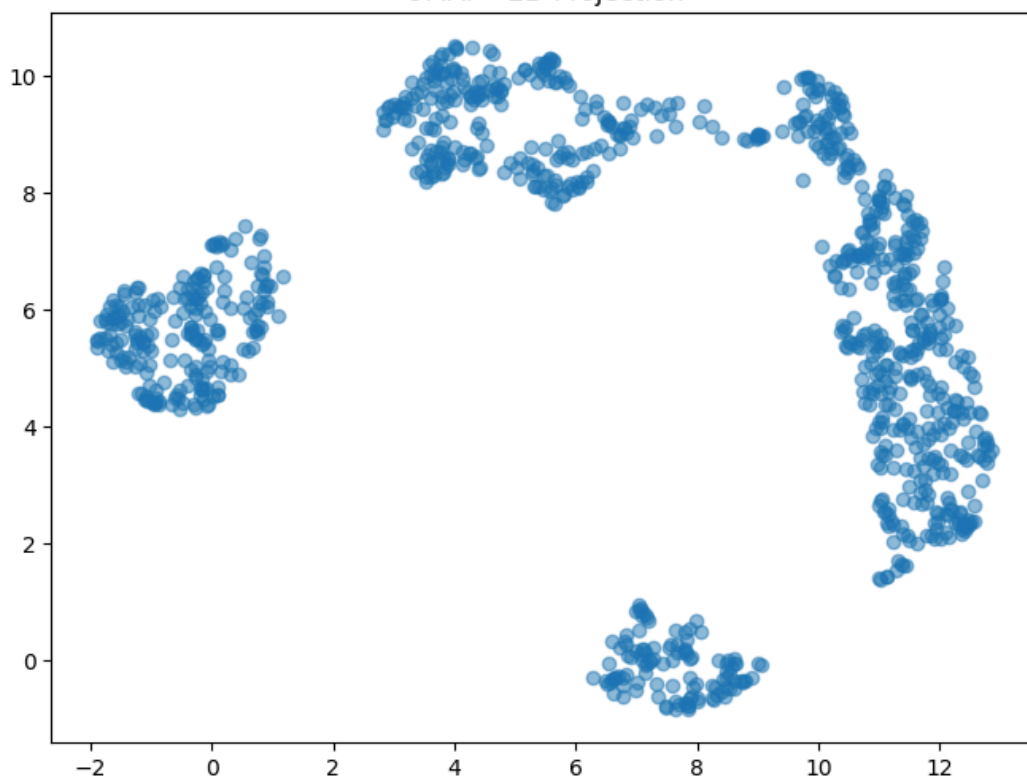


How to Run the Code

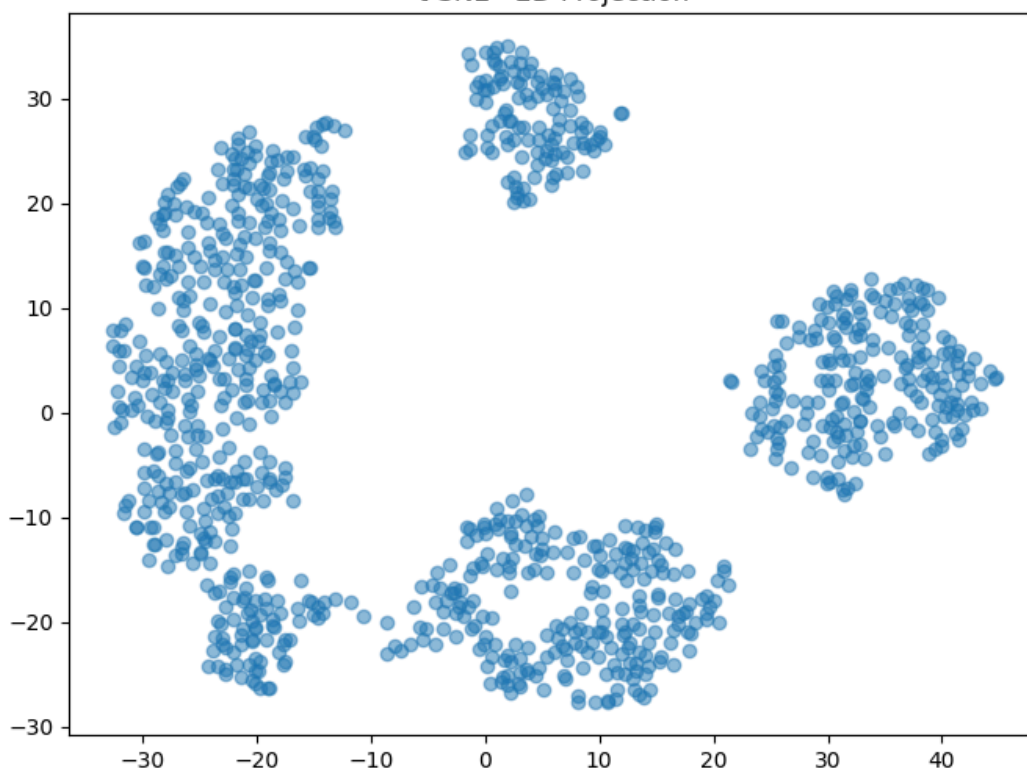
Keep the `pca_data.txt` file in the same directory as `1905103_pca.ipynb` and run the file. Same goes for the `em_data.txt` and `1905103_em.ipynb` files.

Plots of PCA

UMAP - 2D Projection



t-SNE - 2D Projection



Expectation-Maximization (EM) Model:

Number of iterations: 100

Tolerance limit: 10^{-6}

No. of children in families with family planning: 1.7845414004285118

No. of children in families without family planning:

4.912528426580311

Proportion of families with family planning: 0.3566282140091506

Proportion of families without family planning: 0.6433717859908494