# AAI-510 – Team Project Status Update Form

Fill out this form and submit it by the end of Module 4 in Canvas.

Team Number: aai-510-group2

Team Leader/Representative: Swathi Subramanyam Pabbathi

Full Names of Team Members:

1. Alejandro Marchini

2. Carlos Alberto Ortiz Montes De Oca

3. Swathi Subramanyam Pabbathi

Title of Your Project: ClusterQuest – Mapping Social Cohorts in Facebook Networks

Short Description of Your Project and Objectives:

In this project, we aim to develop and implement a graph-based unsupervised learning system that analyzes social media networks to discover community structures and cluster users based on their local network properties. By examining the Facebook ego network, we intend to extract meaningful node-level features and apply clustering techniques to identify socially cohesive groups. These insights can drive user segmentation, influencer identification, and community engagement strategies for digital marketing and social research. This project operates at the intersection of graph theory, unsupervised learning, and social network analysis, supporting marketing, platform design, and social behavior understanding. Through clustering, businesses and researchers can gain a deeper understanding of user connectivity and influence dynamics within social media platforms.

Name of Your Selected Dataset: Facebook\_Combined.txt

Description of Your Selected Dataset (data source, number of variables, size of dataset, etc.):

The dataset is sourced from the Stanford Network Analysis Project (SNAP) and consists of the Facebook Ego Network. It includes:

4039 nodes (users), 88,234 undirected edges, representing mutual friendships, No additional node attributes; all relationships are structure-based

Each line in the dataset (facebook\_combined.txt) represents an undirected edge between two users. This simple format supports building an unweighted, undirected graph, which can be directly imported into graph libraries like NetworkX or igraph for further analysis.

Features will focus on **local structure only**, up to 2–3 hops, in line with the problem constraints.

We will convert the categorical features into embedding space so that we can work on numerical continuos features for clustering.

Please provide GitHub the link here: <https://github.com/PSswathi/aai-510-group2-final-project>

How many times have your members met in the last two weeks? 4 times

List the specific contributions that each team member is providing for the Final Team Project in the table below.

* **NOTE:** ALL students on the team should contribute equally to the Final Team Project.

| Alejandro Marchini | Carlos Alberto Ortiz Montes De Oca | Swathi Subramanyam Pabbathi |
| --- | --- | --- |
| EDA and Feature Engg,  DBSCAN,  Slides presentation | EDA and Feature Engg,  Agglomerative Hierarchical,  Slides presentation | EDA and Feature Engg,  K-Means,  Documentation on how to deploy and serve the model |

Comments/ Roadblocks: No roadblocks currently. We need your suggestion and OK whether we can go ahead with this project approach as mentioned in project proposal attached along with the status form.