

**What is the uniqueness/novelty added by you to the defined problem statement?**

Rather than just being a one-off application that a user uses to find the friends affinity and then forget, we have built the application in a way that the user will show a recurrent usage. The application persists the personality insights of each user and builds a profile around them. This stored data is refreshed from time to time, which will be prompted by the client application based on the user's social media usage frequency. So, the user can potentially see how of a character growth he has had in the years. Also, when we perform an analysis for friend affinity of a user, we don't have to be analysing their friend's digital presence again and again, but rather just receive the insight directly from the persisted data in the database. This avoids unnecessary overhead. The application also provides some fun facts about the user's friends such as what type of movies they like, or what music they would love to hear. Such things make the user revisit the application from time to time and build an engaging business model.

**How is the proposed solution impacting the business? How are the business processes simplified or bringing value over the existing process?**

The proposed solution is a computerised model that would extract the digital footprint of the friends of the user and use a Machine Learning Model to analyse the person's personality. This personality insight is compared with the insights of the user to generate a Friend Affinity Ranklist, among others. While the proposed solution looks like an informal application, that can be used to know about one's friends, it has better business implications. Such a system can be used to find potential candidates for a job position, by comparing the candidate's insights with an ideal personality required for that position. It can also be used in the marketplace to find which customers are more likely to buy/consume a product and further find possible friends of an active consumer who will be interested in the product. This simplifies a lot of business logistics and market analysis. It will help speed up processes and make better decisions.

**Architectural flow of the proposed solution, with the mention of technologies to be used in developing the solution.**

The proposed solution uses Python Flask for the server, Android application as the User Interface and a MongoDB Cluster to save the user data. The user logs in to the application using his Facebook account. The solution mainly leverages on social media APIs (such as Facebook API, Twitter API) for collection of a user's digital footprint. It then uses IBM Watson's Personality Insights API to get a detailed personality insight of each user. This is stored in the database for each user of the application. The users can refresh their stored insights by reanalysing themselves from time to time, which will be prompted by the client Android application based on the user's social media usage frequency. A user can then find the affinity he has with his friends, driven by their needs and values, which is computed efficiently by the Flask server. A rank list is generated based on the affinity. The friends are also classified and ranked based on their Big 5 attributes. These rank lists are sent to the Android application, along with

various likely interests each friend may possess (like reading, musical and movie interests). The Android application acts as the client and the user interface. It beautifully displays the analysed data using colourful visualizations. Flask was decided to act as the server because Python is the best language as of now to do data collection and analysis. As the data to be stored is in the form of JSON/document, MongoDB was chosen to store the data. Smartphones are the major reason for such a wide reach of social media. Hence a native Android application will be the best choice for the user interface. Hence, this architecture was specifically decided to be used.

### **Define the scope of work to be implemented in the project with modules etc.**

The goal of the project is to develop an application that lets a user find the affinity they have with their friends based on their comparative needs and values, which are derived from their respective digital presence. The application should also classify the user's friends based on their Big 5 personality characteristics.