**A Social-Network Based Recommendation System for last.fm** *Graphs*

In this assignment, you are asked to design and implement a social network-based recommender system for last.fm.

You are given the following dataset (Reference: http://www.lastfm.com):

**Dataset:** data.zip file containssocial networking, tagging, and music artist listening information from a set of 2K users from Last.fm online music system. http://www.last.fm

* There are 1892 users and 17632 artists
* There are 12717 user-friend relations
* There are 92834 user-listened artist relations [user, artist, listeningCount]

**Files:**

* artists.dat: This file contains information about music artists listened and tagged by the users. url and pictureURL will not be used in the assignment.

File format: id \t name \t url \t pictureURL

* user\_artists.dat: This file contains the artists listened by each user. It also provides a listening count for each [user, artist] pair.

File format: userID \t artistID \t weight

* user\_friends.dat: These files contain the friend relations between users in the database.

File format: userID \t friendID

**Functional Requirements:**

* Create a class, called LastFMRecommender.java. The class processes the data sets and provides the following public functionalities:
  + listFriends(int user): prints the list of friends of the given user
  + commonFriends(int user1, int user2): prints the user1’s friends in common with user2
  + listArtists(int user1, int user2): prints the list of artists listened by both users
  + listTop10(): prints the list of top 10 most popular artists listened by all users
  + recommend10(int user): recommends 10 most popular artists listened by the given user and his/her friends.

**What to submit:**

* LastFMRecommender.java [please submit other source files if you have any]
* LastFMRecommenderTest.java: Junit test class with sample test cases.