Project 4 Bonus report

**Zipf distribution of followers:** In this project we have simulated a Zipf distribution of followers. The simulation has been done based on the number of followers/subscribers for all active users. We take the maximum subscribers a user can have as an input parameter and the user with most number of followers are simulated to have those many number of subscribers, and the user with the second most number of followers had maximum subscribers/2 and the user which is third in rank having maximum subscribers/3 and so on. This has been implemented using a reduce algorithm and accumulators.

We have implemented a functionality to compute the follower count of each user in our simulation and store it in a csv file using Elixir. The csv file can be generated for various combinations of Maximum Subscribers and Total users. In order to generate a new csv, these parameters can be altered in the ExUnit test for Zipf distribution. Once the csv is generated, the data needs to sorted and a bar chart as shown below can be prepared using the 2-D charts in Excel.

Here are some graphs depicting the Zipf distribution of followers in our simulation with various Maximum Subscribers and Total users:

Zipf distribution with Max Subscribers set to 20 and number of Users as 100

Zipf distribution with Max Subscribers set to 150 and number of Users as 200

Zipf distribution with Max Subscribers set to 600 and number of Users as 1000