

FACEBOOK GRAPH ANALYSIS

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DATASET

Feature	Value
Nodes	4039
Edges	88234
Nodes in largest WCC	4039 (1.000)
Edges in largest WCC	88234 (1.000)
Nodes in largest SCC	4039 (1.000)
Edges in largest SCC	88234 (1.000)
Average clustering coefficient	0.6055
Number of triangles	1612010
Fraction of closed triangles	0.2647
Diameter (longest shortest path)	8
90-percentile effective diameter	4.7

TABLE I
DATASET STATISTICS

ALGORITHMS USED

- PAGE RANK
- CONNECTED COMPONENTS
- TRIANGLE COUNT

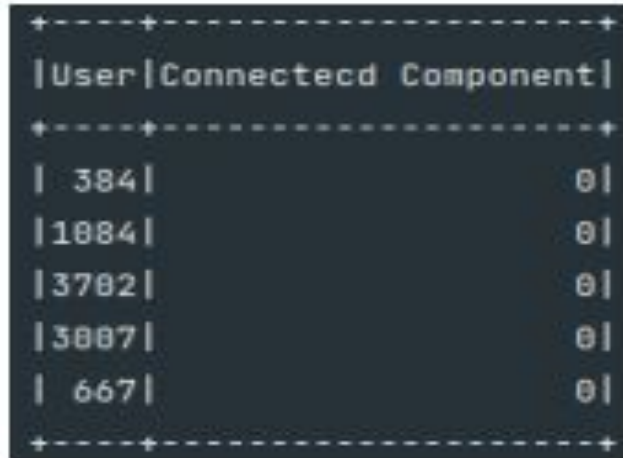
PAGE RANK

We can see the top 5 user profiles on facebook who have highest likelihood of being visited by any user on facebook

+-----+	
User	PageRank
+-----+	
1911	38.040493846458194
3434	37.88984727977698
2655	36.59554816229327
1982	36.27487468611971
1888	27.816991285356885
+-----+	

CONNECTED COMPONENTS

After calculating connected component it can be seen that there is no user in the network that is isolated

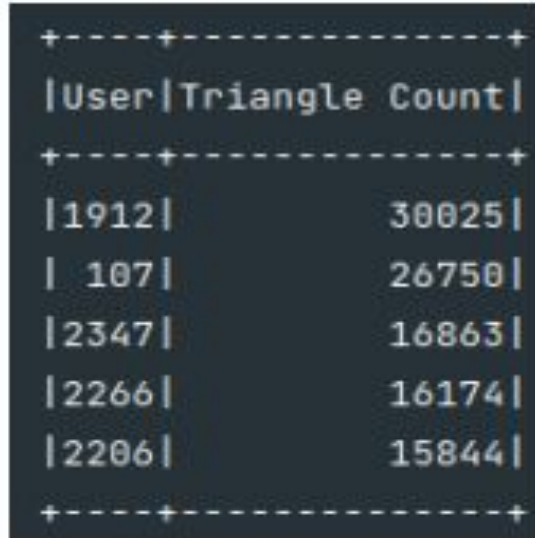


```
+---+-----+
|User|Connected Component|
+---+-----+
| 384|                      0|
|1884|                      0|
|3782|                      0|
|3887|                      0|
| 667|                      0|
+---+-----+
```

User	Connected Component
384	0
1884	0
3782	0
3887	0
667	0

TRIANGLE COUNT

Triangle count result showed that every node has a very connected and cohesive neighbour

A screenshot of a terminal window displaying a table of triangle counts for various users. The table has two columns: 'User' and 'Triangle Count'. The data is as follows:

User	Triangle Count
1912	30025
107	26750
2347	16863
2266	16174
2206	15844

REFERENCES

[1] @articleleskovec2012learning, title=Learning to discover social circles in ego networks, author=Leskovec, Jure and Mcauley, Julian, journal=Advances in neural information processing systems, volume=25, year=2012

[2] [https://spark.apache.org/docs/3.0.2/api/scala/org/apache/spark/graphx/lib/PageRank\\$.html](https://spark.apache.org/docs/3.0.2/api/scala/org/apache/spark/graphx/lib/PageRank$.html)

[3] [https://spark.apache.org/docs/latest/api/scala/org/apache/spark/graphx/lib/ConnectedComponents\\$.html](https://spark.apache.org/docs/latest/api/scala/org/apache/spark/graphx/lib/ConnectedComponents$.html) [4]
<https://spark.apache.org/docs/3.1.3/api/java/org/apache/spark/graphx/lib/TriangleCount.html>