IDENTIFYING KEY PLAYERS IN CRIMINAL NETWORK

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AGENDA

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- MOTIVATION
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INTRODUCTION

- In a world where criminal networks operate covertly, evading traditional investigative methods, the identification and targeting of key individuals who play pivotal roles within these networks present a significant challenge for law enforcement agencies.

- This project aims to address this challenge by employing social network analysis techniques to uncover the hidden structure of criminal networks, reveal behaviour patterns, and identify the most influential nodes within the network.

- By doing so, it seeks to provide law enforcement with valuable insights to disrupt and dismantle these networks effectively, ultimately enhancing public safety and security.

MOTIVATION

- The project aims to aid law enforcement by identifying and targeting critical nodes in criminal networks to disrupt their activities and dismantle the network.
- By analyzing social connections, SNA techniques reveal behaviour patterns and identify key players in central positions. These players facilitate communication, coordinate activities, and control resources within the network.
- Focusing on them disrupts information flow and coordination, leading to network dismantlement. SNA complements traditional methods to understand and effectively disrupt the network.

PROBLEM STATEMENT

- The challenge at hand is the difficulty faced by law enforcement agencies in identifying and targeting key individuals who hold critical roles within complex and covert criminal networks.

- This project is to apply social network analysis techniques to uncover the underlying structure of the criminal network and identify the most influential nodes within it.

- The analysis can provide valuable insights into the network's operations, aid in identifying individuals involved in criminal activities, and assist in developing effective strategies to disrupt and dismantle the network.

EXISTING SYSTEM

- **ORA:** The Organizational Risk Analyzer is a software tool developed by the U.S. Department of Defense to identify key players and their roles in criminal networks. ORA uses a combination of social network analysis and machine learning algorithms to analyze data on individuals and organizations and produce network visualizations that highlight the key nodes in the network.

- **SocioGraph**: SocioGraph is an open-source software tool developed by the Los Alamos National Laboratory for analyzing social networks. It provides a range of network analysis features, including centrality measures, clustering algorithms, and visualization tools, that can be used to identify key players and their roles in criminal networks.

- **NetMiner**: NetMiner is a commercial software tool developed by Cyram Inc. for social network analysis. It provides a range of network analysis features, including centrality measures, clustering algorithms, and visualization tools, that can be used to identify key players and their roles in criminal networks.

PROPOSED SYSTEM

- Employing social network analysis techniques to tackle this challenge.
- Uncovering the hidden structure of criminal networks.
- Revealing behavior patterns within the network.

RESULT

From the analysis done with SNA techniques, we could say that

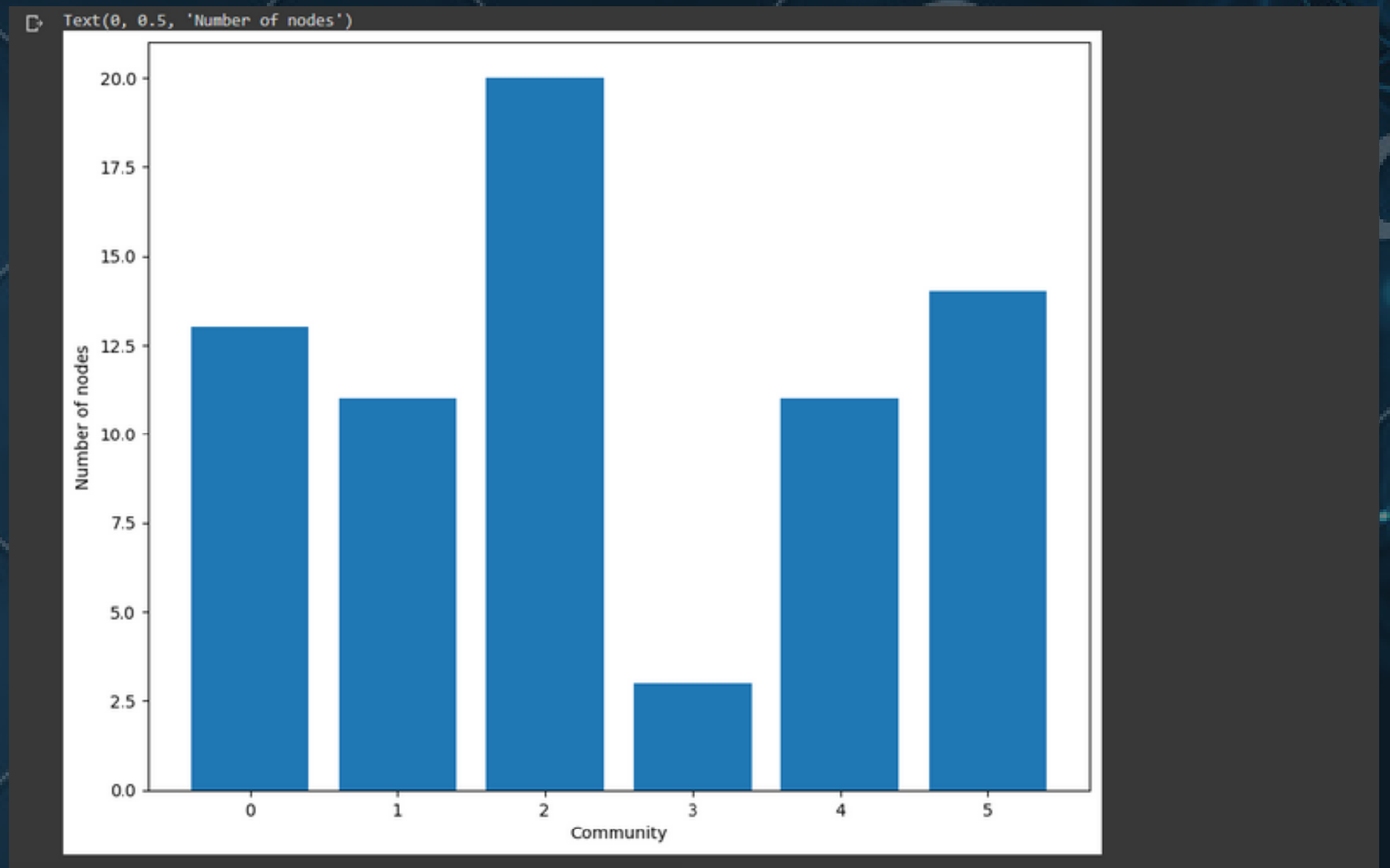
- The node with the smallest Centrality that is the least influenced node is Rajasthan
- The node with the highest Centrality that is the most influenced node is Jharkhand

```
[23] node_with_smallest_centrality = min(closeness_centrality, key=closeness_centrality.get)
     print("Node with the smallest closeness_centrality:", node_with_smallest_centrality,closeness_centrality[node_with_smallest_centrality])

     Node with the smallest closeness_centrality: Rajasthan 0.5546875

[24] node_with_smallest_centrality = max(closeness_centrality, key=closeness_centrality.get)
     print("Node with the smallest closeness_centrality:", node_with_smallest_centrality,closeness_centrality[node_with_smallest_centrality])

     Node with the smallest closeness_centrality: Jharkhand 0.6635514018691588
```

```
[20] node_with_smallest_centrality = min(Degree_centrality, key=Degree_centrality.get)
     print("Node with the smallest Degree_centrality:", node_with_smallest_centrality,Degree_centrality[node_with_smallest_centrality])

     Node with the smallest Degree_centrality: Rajasthan 0.2112676056338028

     node_with_smallest_centrality = max(Degree_centrality, key=Degree_centrality.get)
     print("Node with the highest Degree_centrality:", node_with_smallest_centrality,Degree_centrality[node_with_smallest_centrality])

     Node with the highest Degree_centrality: Jharkhand 0.4929577464788732
```

RESULT

By analysing the community we could say that the third community that is 2 has the maximum number of nodes and the 4th community 3 has the minimum number od nodes



CONCLUSION

- The identification of key players in criminal networks is an important task for law enforcement agencies. They can gain a comprehensive understanding of the network and identify key players who may be driving illegal activities.
- This information can be used to disrupt the network and prevent further criminal activity and ensure public safety.
- Therefore, there is a need to employ social network analysis techniques to overcome these challenges and gain valuable insights that can aid in the identification of key players and the implementation of targeted interventions.

Thank You!