

# PCS 2

## Course Project



**1. Networked Chat, File Transfer, and Quiz Application**

**2. Packet Analysis Dashboard**

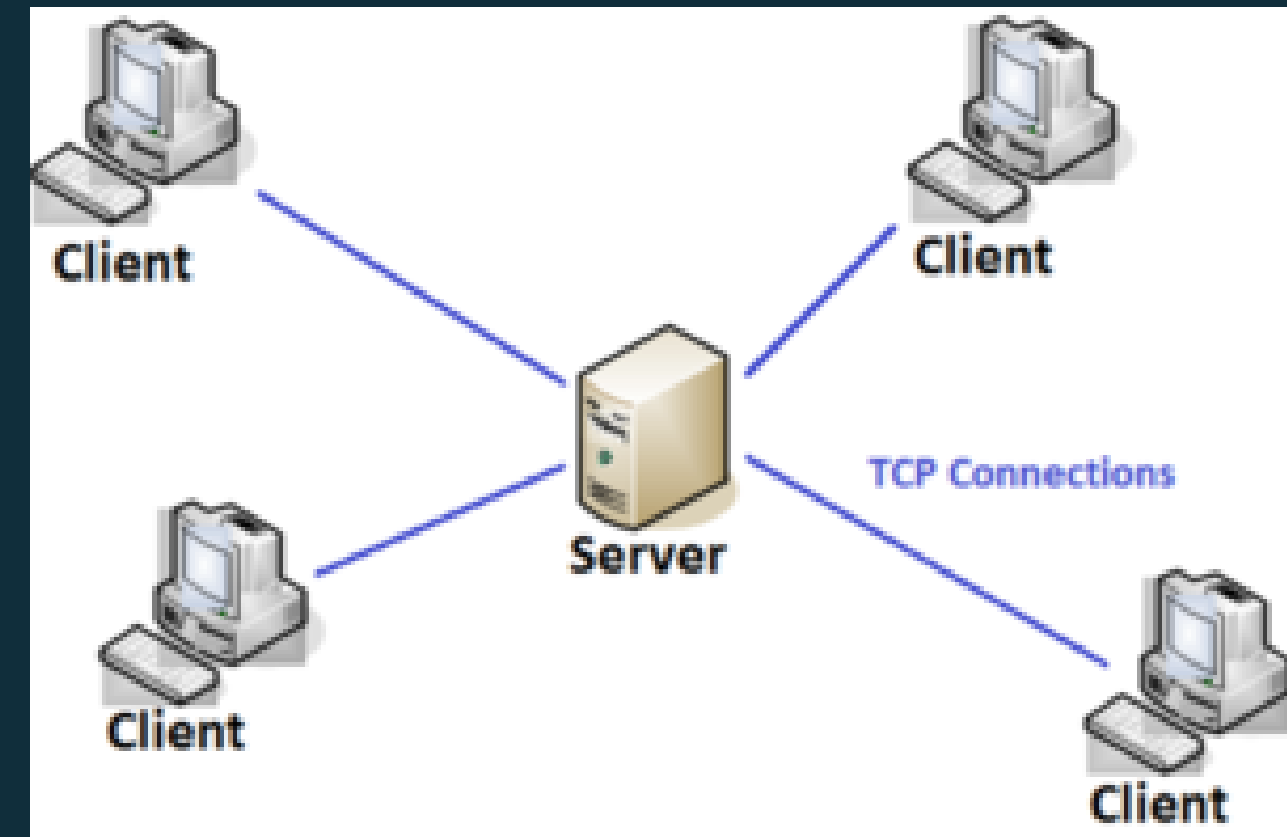
**Group Members:**

**Vivek Sapkal ( B22Al066 )**

**Prem Kumar ( B22Al031 )**

# Networked Chat, File Transfer, and Quiz Application

- Developed a Python application for networked communication on a command line interface.
- Implemented using socket programming in python. Well defined messaging protocols and packet encoding protocol.
- Features group chat, file transfer, and quiz conducting functionalities.
- Enables multiple clients to connect to a central server.
- Uses a sql database to keep usernames and passwords of users, which is used for user authentication.



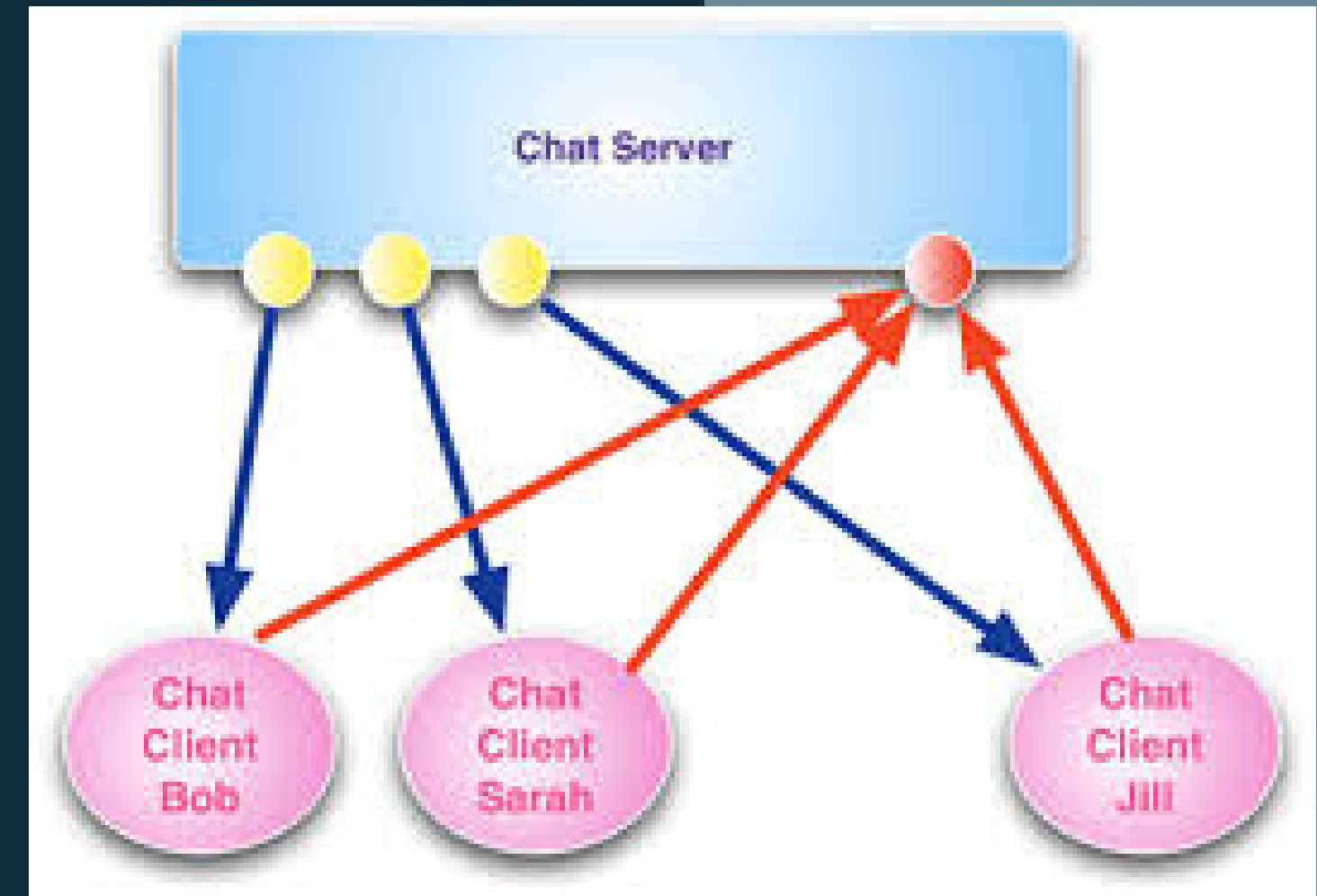
# Key Features

- **Group Chat:**

- Real-time communication between multiple users.
- Facilitates team discussions and social interactions on a command line interface.
- Seamless text messaging both public and private using predefined protocols.

- **File Transfer:**

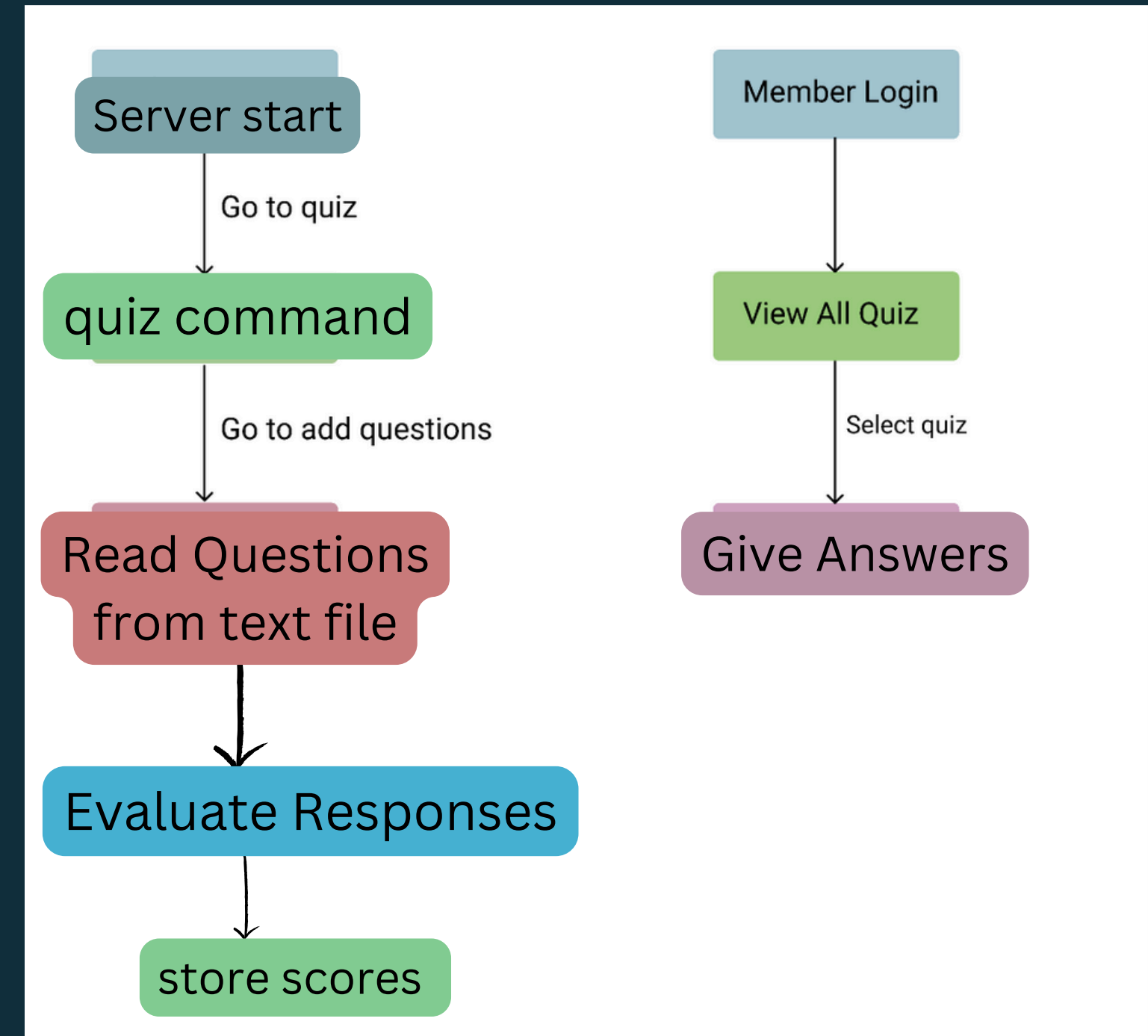
- Secure and efficient sharing of files between clients and server.
- Allows users to send and receive files of various types and sizes using predefined protocols.
- Files can be uploaded to server or sent to particular client. Server can send files to all connected clients or to a particular clients. client. Server can send files to all connected clients or to a particular clients.



# Quiz Feature

- **Conduct Quizzes:**

- Host quizzes with predefined multiple choice questions and answers.
- Participants can submit their answers to the server for evaluation.
- Useful to conduct quizzes in a small classroom over command line interface.
- The scores of quizzes are stored in a csv file in predefined directories on the server.



# Packet Analysis Dashboard

## Real-time Network Traffic Analysis and Anomaly Detection

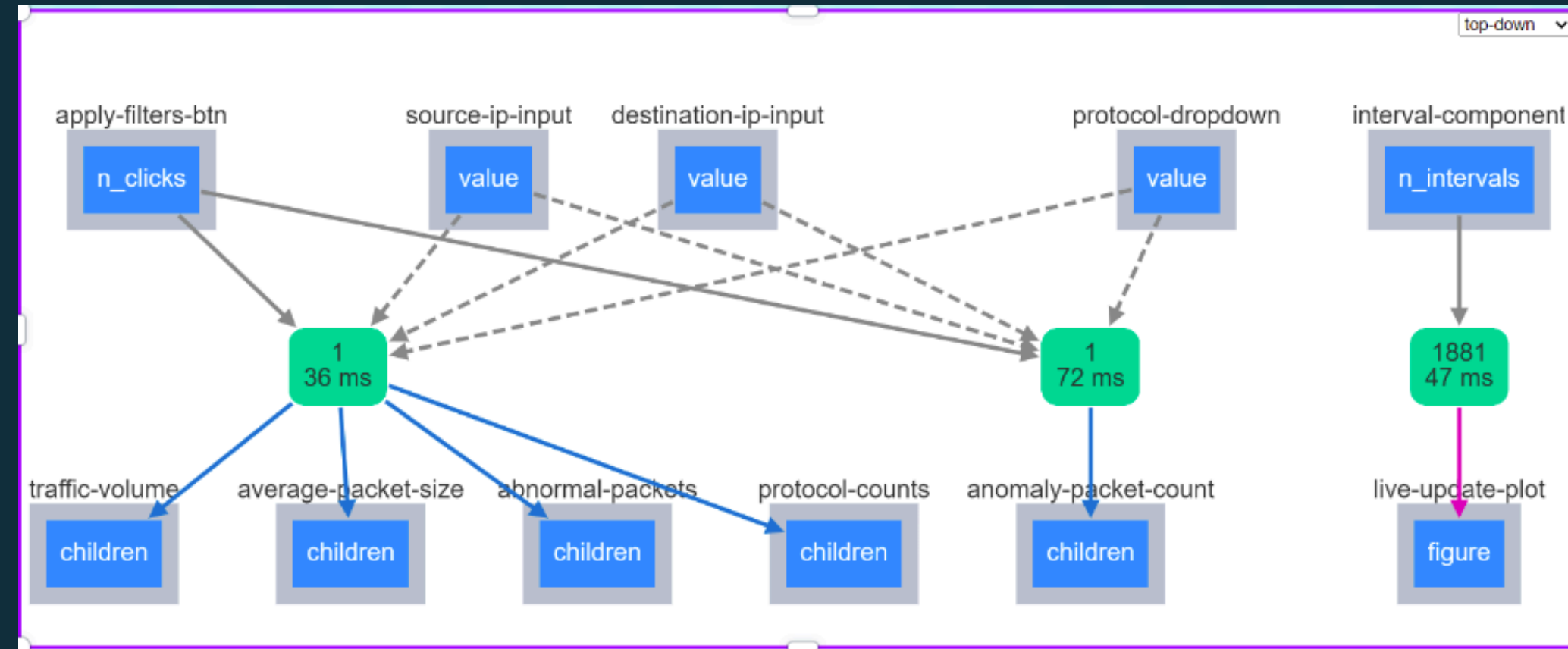
- Developed a comprehensive solution for real-time packet analysis.
- Addresses the critical need for network security and monitoring in today's digital landscape.
- Leverages various python libraries to detect anomalies and ensure network integrity.



# Key Features

- **Real-Time Packet Analysis:**

- Enables immediate threat detection by analysing packets as they flow through the network.
- Provides proactive network management insights to optimise efficiency and address performance issues.

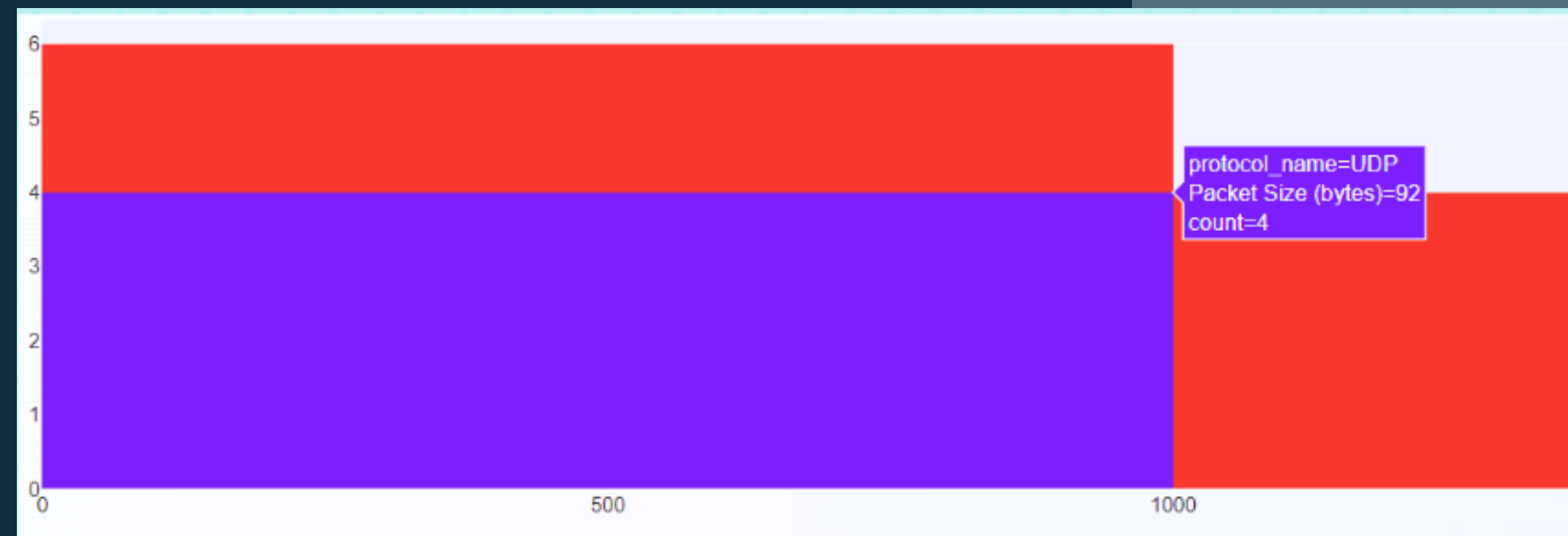


- **Anomaly Detection:**

- Identifies abnormal packet patterns to detect and respond to potential security threats and attacks.
- Protects sensitive data and ensures the network's integrity.

- **Packet Analysis Dashboard:**

- Offers features such as packet analysis, network traffic monitoring, and data visualisation.
- Displays comprehensive information about network traffic, facilitating effective monitoring and analysis.
- Enhances network security and efficiency by providing real-time insights into network behaviour and performance.





# Conclusion

- Integration Opportunities:
  - Both applications can be seamlessly integrated to enhance network management capabilities.
  - Real-time packet analysis from the Packet Analysis Dashboard can bolster the security features of the Networked Chat, File Transfer, and Quiz Application.
  - Collaboration among network administrators can be streamlined, enabling swift responses to security incidents.
- Future Directions:
  - Explore further integration possibilities to optimise network security and communication.
  - Continuously enhance features based on user feedback and emerging technologies.



# Contributions

1. Networked Chat, File Transfer, and Quiz Application: Vivek Sapkal ( B22AI066 )

2. Packet Analysis Dashboard: Prem Kumar ( B22AI031 )

Presentation, Report, Readme File and Demo Video : Both

# Thank you