

# Encrypted Peer To Peer File Sharing System

## CMSC 626 Principle of Computer Security

### A Team Evaluation Report

*Submitted by*

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*Under the Guidance of*

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# UMBC

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## **ACKNOWLEDGEMENT**

We would like to express our deepest gratitude to our professor, Greal Tompkins for his guidance, everyday encouragement, intricate caring, timely help and providing us with a humble and helpful atmosphere throughout the project. We are also thankful to our teaching assistant Ran Liu and our grader Anirudh Balaiah Mahesh. In the process of completion of the project, we have had the opportunity to learn many new technologies from them which has helped us a lot in understanding the depth of the project.

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## **Team Members Performance Evaluation**

The following report is an in depth analysis of the contribution of every team member in the semester long group project. We evaluate our team member's performance on the following four innate qualities used for the success of any project.

The four qualities we are assessing our team members and their contribution on are -

- 1) Work Ethic
- 2) Contribution and Teamwork
- 3) Problem Solving
- 4) Time Management and Leadership

As we have reached the completion of the course and our semester long project for CMSC 626 Principles of Computer Security we have faced several challenges but everything was managed with effective teamwork and time management amicably.

We all learned several things and we're glad to have met each other for the group project. Since it's a group project we all contributed effectively toward the projects and having met the deadlines. Apart from learning professionally we all grew as teammates as well, we learned about each other on a personal level as well. We are happy to end the course and the group project on a positive note.

**SreeVikas Edukulla ([sedukul1@umbc.edu](mailto:sedukul1@umbc.edu)) - PY32577**  
**“The Code Monk”**

[SreeVikas Edukulla](#) is our team's “The Code Monk”, having a sound coding background he contributed to the project immensely. He is a proficient programmer and an amazing person. He writes on Tech forums for Java, algorithms & data-structures, Hibernate, RESTful API, Spring framework, Microservices architecture, Machine learning, DevOps.

- ❖ **Work Ethic** - Vikas has a very strong work ethic, he will leave no stone unturned to ensure quality and productivity meet the deadlines. He has shown a strong work ethic by consistently staying until all weekly tasks are completed. He ensured we use the AES Encryption.
- ❖ **Contribution and Teamwork** - Vikas has developed the Central Index Server and Peer entirely from scratch in Java by himself. He created a Central Index Server Database by himself in Oracle SQL database server. He single handedly ensured all the peers communicate effectively with each other and the Central Index Server as well.
- ❖ **Problem Solving** - Along with our original architecture that we use in our project currently, Vikas worked through several other architectures and made all the team members aware of its pitfalls and shortcomings. This helped us understand the already existing industry benchmark standards and how we could implement them in our project. Vikas has an innate ability to solve problems efficiently, he understands the requirements and delivers accordingly.
- ❖ **Time Management and Leadership** - Vikas is a brilliant leader, he has worked with the team members amicably all along the semester. He is a results oriented individual which has led to managing all the deadlines effectively.

**Aayush Jannumahanti ([aayushj1@umbc.edu](mailto:aayushj1@umbc.edu)) - FK32171**  
**“The Crazy Documenter”**

[Aayush Jannumahanti](#) is our team's “The Crazy Documenter”, he has contributed to the project in numerous ways from ensuring the weekly updates to project report, his work is of great value to the team. Aayush has a very unique personality to achieve desired results. He writes technical blogs for a few companies and himself too, can be viewed on his web portfolio.

- ❖ **Work Ethic** - Aayush has demonstrated a strong work ethic by consistently staying until all daily tasks are completed. This trait of his has ensured the team remains focused and meets the deliverables.
- ❖ **Contribution and Teamwork** - Aayush ensured the AES Encryption architecture has worked efficiently in communicating with all the peer channels. He single handedly ensured all the peers are able to search for files, file delete service, file update service, file revert service, file update service, and coherence among. He has shown a practical approach to solving the encryption problem by breaking down large concepts into smaller, more manageable tasks.
- ❖ **Problem Solving** - Aayush always gathers all of the adequate information and facts to make decisions, which benefits the entire team. He worked upon the Oracle Database to store the file names and the ip addresses of the peers. He advised the entire team to shift the production code from using the DES Encryption architecture to AES Encryption architecture as it is vulnerable to security attacks.
- ❖ **Time Management and Leadership** - During facing implementation challenges, Aayush helped the team to grow and do better. He is the push factor in our team and this has helped us develop the project effectively. We are more than happy to have him onboard with us.

**Varshitha Palakurthi ([vpalaku1@umbc.edu](mailto:vpalaku1@umbc.edu)) - FA17137**  
**“The Project Manager”**

[Varshitha Palakurthi](#) is our team's “The Project Manager ”, having a sound technical knowledge and entrepreneurial personality she has contributed to the project in several ways. She is well versed in project management and agile software development. This trait of her's is easily visible in our code base and documentation as well.

- ❖ **Work Ethic** - Varshitha has a very strong work ethic, she challenges everyone on board to bring out the best version of themselves. She has a knack for getting things done. She brought the idea of licensing our project with MIT License to the table. Which will ensure our unique architecture and design remains in safe hands.
- ❖ **Contribution and Teamwork** - Varshitha has constantly contributed to the group project with unique ideas and approaches. Time and again she ensured our production code is working fine and saw to it that there is coherence in our code base with our proposed architecture.
- ❖ **Problem Solving** - As we moved into development of the Central Index Server, Varshita developed a robust socket based communication channel with our peers. She created the Registry (peer id, file name) in Central Index Server, Obtain/Download (Peer ID, filename) in the Peers module. This innate problem solving ability of her's is an asset to our project and any organization she joins.
- ❖ **Time Management and Leadership** - Varshitha is a born leader, acts as the go-to member for coding doubts by offering feedback, guidance and sharing ideas and techniques for improvement of the code base.

**Hanumantha Rao Somaraju ([da16976@umbc.edu](mailto:da16976@umbc.edu)) - DA16976**  
**“The Encryption Aficionado”**

[Hanumantha Somaraju](#) is our team's “The Encryption Aficionado”, Hanuma is the go-getter of our team. He always believes in quality over quantity, this can be seen in our code base and encryption techniques also.

- ❖ **Work Ethic** - One of Hanuma’s greatest strengths is his ability to manage multiple responsibilities, which develops a strong work ethic. He provides clear directions, expectations and feedback to our team.
- ❖ **Contribution and Teamwork** - Hanuma used his expertise in Encryption by tweaking with the inputs, When input from the user is first read, files and filenames are first encrypted using AES algorithm. The encrypted format is then saved in the local file system, used for communication with the server and peers as well as database storage. Even database searches are conducted using encrypted filenames. These modules were developed by Hanuma single handedly.
- ❖ **Problem Solving** - Concurrency of the files was exhibited by Hanuma's proposed approach. Problems during the implementation were addressed and resolved by him. He worked on the file registration, file download, file delete, file search, file revert, file restoration and encryption modules code base with other team members. In the data
- ❖ **Time Management and Leadership** - Hanuma is a force for good, with his unique hands on experience he has developed the encryption module in our project with ease. He has the makings of a strong leader.