17.03.2025

**CMSE-456/CMPE-455 Term Project “WhatsApp-Like Application” (20 points)**

**Task**

Develop an **on-line** WhatsApp-like application (WALA) on at **least two separate computers** providing chatting of the clients. WALA has two actors: Sysadmin, and Client. Sysadmin is responsible for monitoring WALA server. Clients communicate using DES-encrypted and digitally signed messages which are stored DES-encrypted. Session secret key is exchanged using RSA encryption. RSA keys are periodically updated.

**It is a team work (3-4 people a team). Any programming languages and tools can be used. Reports on the Term Project shall be submitted 29.05.2025, 10 am, via Teams (Term Project assignment will be posted later by Lab Coordinator** ALI FARROKHNEJAD**). Later submission will be penalized 3 points a day. Defense of the projects will be organized by Lab Coordinator in the period 29.05.2025-04.06.2025.**

Report shall have

* 1. Cover page (University, Department, Course, Semester, Year, City, Country, Term Project subject, Team members, Lecturer, Lab assistants)
	2. Outline
	3. Problem definition (see **Task** above)
	4. WALA detailed description
	5. Description of the tools and security methods used for the WALA implementation (e.g. programming tools, encryption algorithms, hash functions, distributed system organization tools, communication tools, security tools, synchronization tools, database management system tools, web-server tools, etc.)
	6. Description of WALA implementation in your programming language/operating system
	7. Description of the system architecture including at least two separate computers
	8. Description of the database structure used for WALA
	9. Description of the implementation of actors: Sysadmin and Client
	10. Description of the data structures used for secure implementation of Sysadmin and Client
	11. Description of the algorithms used for secure implementation of Sysadmin and Client
	12. Description of the codes developed
	13. Description of the tests conducted and their results, **screenshots** of them
	14. Conclusion
	15. References
	16. Appendices with the code developed (shall be referred when giving explanations required in item 6.6 above. Appendices shall be structured, e.g., Appendix 1. Source code of the Sysadmin process)

**Archived files submitted via Teams shall contain all related to the project information (report, design materials, sources, executables, etc.).**