**01.11.2021**

**Term Project Task**

**CMPE-552 “Database and File Security”**

**Fall-2021**

1. The project concerns development of a distributed (at least on two computers) secure database keeping transactions using blockchain technology [1].
2. Select a **problem** from the List of problems (see Appendix at the bottom of that document) and decide on your group mates (Term Project shall be made in groups of 2-5 people). Deadline is **08.11.2021** – up to this date you shall send me e-mail with your topic and team members. Each topic can be selected at most twice. Your choices will be posted on web. Although tasks may be repeated, task definition details and implementation shall not be exactly the same. Copying is not allowed, and will deserve 0 points for the project**. Later** specification of the topic and group will be penalized **by 2 points** subtraction from the possible maximum grade of 20 for the project.
3. Define details of the distributed database selected by you.
4. Implement solution of your problem allowing accessing the database for reading and writing as a software application
5. Conduct tests with your application to validate its correctness
6. Prepare (in Word) and printout a **paper report** on your assignment having:

* outline,
* task formulation,
* description of the distributed database
* description of algorithm for solving your task,
* description of tools you used for implementation of your task and the way of their installation and preparation for usage
* description of developed program (parts of the program, ways of interaction, synchronization, etc.)
* user guide (how to use your program – what and where should be installed, launched, how it should be interpreted)
* description of conducted tests and their results with screenshots of the runs
* conclusion
* references on used sources (books, articles, web-sites, etc.)

1. Supply the report with a CD having all the Term Project-related materials: doc-file with your report, sources and executables of your application, database structure and content, results of your tests, and an instruction how to use your program
2. Submit the report to the lecturer and be ready to show your application working and to give necessary explanations about it. Reports shall be handed to the lecturer (in CMPE-219) latest by 10**.01.2022, Monday, 16.00. Later submission will be penalized (2 points/day).**
3. Presentation of your working applications will be held in the period 11-13.01.2022. Presentation time will be specified on the report submission. The report will be assessed out of 8 points, and 12 points – for presentation of the working application and its explanation
4. **Appendix** contains a list of problems.

**References**

* 1. S. Nakamoto,Bitcoin: A Peer-to-Peer Electronic Cash System, <https://bitcoin.org/bitcoin.pdf>

**Appendix. List of problems**

1. Military database with transactions being orders
2. Hospital database with transactions being patients’ clinical records
3. Database of medicine products with transactions being records of drugs produced
4. Database on the government expenditures made with transactions being payment records
5. Database of student registration with transactions being courses selected
6. Database of stock exchange records with transactions being records of selling-buying securities