In20-S5-CS3053 - Computer Security

Continuous assessment - Protection of information based on sensitivity and privilege levels

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Write a program using C, C++, Java or Python to carry out medical data processing as follows:

1. The program writes into and reads from a configuration file the following parameters: user names, hashes of passwords (MD5), user type (patient or hospital staff category), privilege level of each user name (you need to assume appropriate privilege levels) (Note: you may use a comma separated records, XML, or similar. What is necessary is to somehow write into the file, and not necessary to focus on interfaces and how you do it in a fancy way)
2. The program writes into and reads from a data file the following data records: personal details, sickness details, drug prescriptions, and lab test prescriptions. Each data record is associated with a sensitivity level depending on its nature.
3. Each data record is due to an encounter with a patient
4. Hospital staff can read or write data based on account privilege level and sensitivity level of data

Actual source code need to be submitted, in its original form, as a zip file. As the objective is to test the ability to use the security concepts learned in this subject, use of ready-made libraries are not acceptable (however, you may use libraries or functions to compute MD5 hashes and no coding of your own is expected).

Further, submit a report with following sections:

1. The program code to carry out the above steps
2. A description of how you decided the access to data records based on sensitivity of data
3. Annexes: configuration file and data records file, important screen captures of program execution

Provide the above report of your work as a PDF file with a formal cover page. Report format is A4 Page, 1-inch margin, Times-New-Roman 12 pt font (for the descriptive sections), and single line spacing. Code can be in a suitable font.

Submission status

Submission status	No attempt
Grading status	Not graded
Due date	Friday, 20 October 2023, 12:00 AM
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