**Learning Outcomes of the Assignment**

1. Specify, describe and justify the design and implementation decisions of an exemplar component of a security system.
2. Critically evaluate various techniques used in exemplar security systems.

**Instructions:**

No marks will be awarded for the entire assignment if any part of it is found to be copied directly from printed/published materials or from another student. All submissions should be made on or before the due date. Any late submissions after the deadline will not be entertained. **Zero (0)** mark will be awarded for late submission, unless extenuating circumstances are upheld.

**The Scenario**

Security is the ability of a system to protect information and system resources with respect to confidentiality and integrity. One of the best tools to help people safeguard their personal information is the use of security system. Secure system is frequently associated with three core areas, which can be conveniently summarized by the acronym "CIA":

* **Confidentiality** -- Ensuring that information is not accessed by unauthorized persons
* **Integrity** -- Ensuring that information is not altered by unauthorized persons in a way that is not detectable by authorized users
* **Availability –** Ensuring thatthe information must be available when it is needed

In your documentation you need to research and implement three security features for computer security system. In your research you will need to cover the following:

* The functionalities of the security features chosen, level of security and the usability of the system.
* The purpose(s) and the importance (advantages) of the chosen features
* Give three scenarios and explain the impact if the chosen security features are not being implemented
* Explain the chosen encryption/decryption algorithm.

Finally you are required to develop a security system using C, C++, Java, visual basic or any dot.net programming language. The basic requirements of the system are:

* Client/Server or Peer to Peer application
* All the password must be saved in hash value
* The system able to check the integrity of the file
* The system able to encrypt and decrypt the data

You can add any extra features to your system as extra marks will be given for any extra features. The extra features can be developed up to maximum of 3 extra features.

**Assessment**

This assignment will contribute 100% towards the incourse marks, as mentioned in the Student Assesment & Information sheet

This assignment will be evaluated based on the following criteria.

**Assessment Criteria (Marks Breakdown)**

|  |  |
| --- | --- |
| **Individual** | |
| **Criteria** | **Marks** |
| Codes and Algorithm explanation | 15 marks |
| Extra Features | 15 marks |
| Research | 20 marks |
| Q&A session during presentation | 10 marks |
| **Total** | **60** |
| **Group** | |
| **Criteria** | **Marks** |
| Program Demonstarion & Integration | 10 marks |
| Client Server implementation & configuration | 15 marks |
| Documentation | 10 marks |
| References | 5 marks |
| **Total** | **40** |

**Guidelines for the Report:**

Document the results of your work in a **professional and systematic** manner, in the form of a **computerized report**. **One (1**) softcopy and hardcopy of your documentation is to be submitted.

Your completed documentation should meet the following requirements:

1. Table of contents for every detailed chapter/section.
2. Abstract
3. Introduction
4. Chapters / sections
5. Conclusion
6. Appendices
7. References
8. Workload matrix.

**Submission requirements**

1. A CD containing an electronic version of the document.
2. Your report must be typed using Microsoft Word with Times New Roman font. You need use to include a word count at the end of the report (excluding title, source code of program & contents pages) Report should be in 1.5 spaces.
3. The report has to be well presented and should be *typed*. Submission of reports that are *unprofessional* in its outlook (dirty, disorganised, inconsistent look, varying coloured paper and size) will not fair well when marks are allocated.
4. Ensure that the report is printed on standard A4 (210 X 297 mm) sized paper. Paper weight of 80 grams and above is highly recommended.
5. The report should have a one (1”) margin all around the page as illustrated below:



1. Every report must have a *front cover*. A transparent plastic sheet can be placed in front of the report to protect the front cover. The front cover should have the following details:-
   1. Name
   2. Intake code.
   3. Subject.
   4. Project Title.
   5. Date Assigned (the date the report was handed out).
   6. Date Completed (the date the report is due to be handed in).
2. **All** information, figures and diagrams obtained from external sources **must** be referenced using the Harvard referencing system accordingly.