Diploma in Infocomm Security Management (DISM)

ST2601 Infosec Project Development and Management (ITSP)

Student's Project Handbook

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1. Module Overview

1.1 Introduction

Infosec Project Development and Management (ITSP) is a third year module over ONE semester for the Diploma in Infocomm Security Management (DISM) course.

1.2 Module Aims

This module intends to provide students an opportunity to integrate knowledge and technical skills they have acquired from the course and experience problem solving, communication and working as a team to work on an Infosec Security Project. In the project, the students are expected to perform problem analysis, investigation, solution design and implementation of security related project.

1.3 Project Assessment

It is important to understand how the project will be assessed. A good Infosec Security Project involves a combination of sound background research, a solid implementation, or a piece of theoretical work, and a thorough evaluation of the project's output in both absolute and relative terms. A good tip is to try to think of the project as an "**investigation**", rather than an effort to deliver a fully-functioning "**product**". Proper evaluation of the project is thus crucial to achieving better marks.

Invariably a good project must cover some new ground, e.g. by developing a complex application which does not already exist, or by enhancing some existing application or method to improve its functionality, performance etc.

A straight-forward implementation project is acceptable, but you must appreciate that it is unlikely to gain good marks, regardless of how well it is done. Likewise, projects which are predominantly survey reports, unless they are backed up with experimentation, implementation, or theoretical analysis, e.g. for performing an objective comparison of RFID intrusive signal methods or techniques etc. Pure survey reports alone, with no supporting implementation or theory, may not be able to gain good marks.

1.3.1 Assessment

At the end of week 4, students will need to present the project analysis and investigation to the project evaluators.

At the end of week 15, students will need to submit a group project report. At week 16, students will present the design and implementation to the project supervisor and evaluators.

1.3.2 Components of Assessment

Evaluation will be based on both individual performance and group performance. The components of the assessment are as follows:

The following table shows the marking scheme for group and individual efforts (in marks).

ITSP	Group	Individual	Total
Presentation (week 4)	10%	-	**10%**
Report (week 15)	20%	10%	**30%**
Project management	10%	10%	**20%**
Presentation + deliverables (week 16) ITSP Showcase Day (week 16)	20%	20%	**40%**
Total	**60%**	**40%**	**100%**

Note:

- The computation of both the group and individual marks will take into consideration the student's % of contribution or work done.

- The peer evaluation will be included as one of the assessment components. Students are awarded marks for this.

1.3.3 Assessment Criteria

The following (non-exhaustive) list of major criteria is used in the assessment:

Analysis and Investigation

The analysis and investigation refers to the way the group arrived at the initial project specification, work programme and list of objectives. It particularly addresses the background research undertaken and the manner in which the approach and programme of work fits in with the current technology. Students will be assessed based on:

- Background preparation
- Completeness of the requirements analysis
- Correctness of requirements
- Consistency of requirements
- Clear distribution of work among team members

Design and Implementation/Proof-of-Concept and Experiments

The assessment will be based on the list of objectives previously specified in the report.

If the objective is to develop a new or enhanced security software system, the criteria used in the assessment could include the following but not limited to:

- The extent of meeting user requirements by individual functions and by the implemented system
- Thoroughness of tests (sufficient test cases)
- User-friendliness
- Usability
- Correctness
- Reliability

If the objective is to conduct surveys or experimentation, implementation, or theoretical analysis, the criteria used in the assessment could include the following but not limited to:

- The extent of the surveys to support the theories
- Thoroughness of experimentation
- New or enhanced hypothesis
- Correctness
- Reliability
- Technical achievement

Soft skills - Written and Oral communication

- Proper organisation and layout of report
- Clarity of presentation of ideas, grammar
- Use of diagrams/charts, methodologies
- Oral communication/Presentation
- Gesture and attire
- Proficiency of spoken language

Product-based digital media, product web site and project poster

Teamwork (by peer evaluation)

Contribution by individual towards the project

1.3.4 Grading for ITSP Module

a) To pass the module, each student must achieve at least 50% of the overall grade.
b) Students who score less that 50% are considered as fail.
c) Students who fail the ITSP module in the 1st sitting will be allowed to repeat the module. The normal period of repeat project is one Phase.
d) Students who fail while repeating the ITSP module will be removed from the course.
e) The process of appeal for ITSP module is as follows:
   i) First level of appeal in writing to:
      The Chairman, Course Management Team for DISM, School of Digital Media and Infocomm Technology, through the Project Supervisor.
   ii) Second level of appeal in writing to:
      The Chairman, Board of Examinations, School of Digital Media and Infocomm Technology, through the Project Coordinator.

2. Student's Notes

2.1 Introduction

The following information serves as a guide for you to begin your Infosec Security Project. You will form groups of four members. Members of the project group will play the role of the project leader, librarian, project members etc. Make sure that everyone knows his role and responsibility and does it well throughout the project duration. The project is to be completed within the stipulated time frame. Therefore, proper project control and teamwork is very important in order for your group to deliver a successful software product, good project presentation and demonstration.

Read through the project specification carefully and clarify any doubts with your project supervisor. Work out a project plan.

You are expected to incorporate the different phases of the system development, from analysis through implementation. You are also required to present technical information effectively through a written technical report and presentation.

2.2 Weekly Progress

Once the project group embarks on the project, a project control chart (usually Gantt chart) is to be prepared. In the chart, the tasks allocated to each member and the estimated duration for completing the task must be clearly indicated. The progress of the project will be monitored based on the control chart.

Each group is expected to complete the weekly monitoring form (refer to Appendix A on page 12) and weekly attendance for group form (refer to Appendix B on page 13).

For weekly progress reporting, you must do the following:

(a) Complete all the sections in the weekly monitoring report.
(b) Obtain the supervisor's signature at each weekly meeting.
(c) To encourage self-directed learning & problem solving skills, students are strongly encouraged to brainstorm the solutions to the problems as a group prior to bringing up the issue to the supervisor. Marks will be deducted if the students are overly reliant on their supervisor to solve their problems.
(d) Compute the number of hours present in the weekly monitoring report by referring to the weekly attendance for group form.
(e) If the student's attendance is below 80%, a verbal warning will be given by the supervisor.
(f) If the student's attendance is below 75%, a warning letter will be issued to the student by the supervisor. A sample letter can be found in Appendix C on page 14.
(f) If the student's attendance is below 50%, the student will fail the ITSP module.

2.3 Role of Supervisor

A project supervisor will be assigned to each group to monitor the group's progress and students' participation. The supervisor will:

(a) Ensure that the allocation of workload among the group members is fair and agreed upon.
(b) Meet regularly (***1 hour per week*** - as per allocated time in timetable with your group to provide consultation pertaining to your project).
(c) Act as a System User to your group and provide clarifications pertaining to the project specification.
(d) Ensure that the group adhere to deadline and work according to schedule.
(e) Monitor the attendance of the` group.

(f) Liaise with the module coordinator to finalise the date/time and venue of the Project Presentation and the Demonstration. Keep the project group informed of the arrangement.
(g) Provide the group with detailed project specifications and explain clearly what is required.
(h) Advise the project group so that they are heading in the right direction and within the project scope.
(i) Arrange for accounts to be created if students require access to the various laboratories.
(j) Collect hard copies of the Peer Evaluation Forms from the students.

Note:
Technical work should be the students' responsibility. **Supervisor is not expected to provide any technical support.**

2.4 Roles and Responsibilities of the Group

Each group will have to choose a group leader and work closely as a group. The success of the project is highly dependent on how well you work with one another in the group.

The leader's responsibilities are as follows:
(a) Plan and track progress of the group.
(b) Discuss problems encountered with the supervisor when necessary.
(c) Ensure all members attend scheduled meetings and provide explanations if members are unable to attend.
(d) Ensure the participation and fair contribution of all group members and where necessary, notify the supervisor if members do not co-operate.
(e) Act as the contact point for the supervisor.
(f) Update all project documentation.
(g) Help resolve problems between members, particularly if some members are not cooperative. Deal with members without prejudice.

Members' responsibilities are:
(a) Perform the tasks allocated according to the project plan.
(b) Participate in all activities organized for the group.
(c) Cooperate with each other in the group, and resolve any differences amicably.
(d) Carry out programming tasks – module coding, testing and integration of modules.

2.5 Time-Tabled Meetings

The project group should hold regular meetings to report the progress of the project, to exchange ideas, to discuss various issues and problems and resolve differences. Not all meetings require the presence of the supervisor. However, the group should meet the supervisor at least once a week. **It is important that the group keeps a record of the discussion and meeting**. Important issues should be highlighted to the supervisor. This record is to be submitted to the supervisor towards the end of the project for awarding of marks.

2.6 Project Management (PM)

These instructor-led sessions will be conducted for 2 hours a week. The main purpose is to introduce the concept of project management to students.

Students will be equipped with the necessary knowledge to produce a project plan for their ITSP. Assessment will be based on the submitted group assignment and personal blogs.

2.7 Project Guidelines

2.7.1 Project Deliverables

The group is expected to submit a formal report towards the end of the project cycle. For both the reports, please refer to the possible contents in appendices G, H, and I. These are samples and are non-exhaustive.

You must complete the following:

Deadline	Deliverables
Week 4	Group Presentation
Week 10	Project Management
Week 15	Report
Week 16	Presentation/Demonstration

Note:
At week 4, your team is required to give a presentation of the analysis and investigation; and at the end of week 16, you are required to give a presentation of your deliverables.

2.8 Project Presentation and Demonstration

2.8.1 Project Presentation (week 4)

Your group has to present the following:

(a) Requirement Analysis & Requirement Specification of:
- the existing system; or
- the proposed application; or
- the research requirements and plan .

Use the graphic notation of the adopted methodology and/or software tool to document the requirements where appropriate.

(b) Proposed deliverables – Describe how your proposed deliverables can meet the requirements. For example, what hardware and software configuration will be used for the development and deployment of the application; what software functions will be implemented to support the business functions and how they are organised, etc.

(c) A marketing-based material of the project using digital media. The main aim is to use suitable media to present the problem statement and the proposed possible solutions/ideas. The media can be a video clip, flash movie, or powerpoint slides with audio, etc.

2.8.2 Project Management (week 10)

Your group has to submit the following:

(a) Project Management group assignment

(b) Bi-weekly blogs (5 submissions on blackboard)

2.8.3 Project Presentation & Demonstration (week 16)

Each member of the group is required to demonstrate his/her eventual deliverables during the designated Demonstration Session. The demonstration covers but not restricted to:

(a) A brief description of objectives and the major processes/functions of the deliverables, assumptions made regarding the project.

(b) The security features of the system.

(c) If applicable, the programs/prototypes that implement the requirements.

(d) A product-based material of the project using digital media. The main aim is to use suitable media to present the problem statement and the proposed solutions/results/findings. The media can be a video clip, flash movie, or powerpoint slides with audio, etc.

(e) A poster of the project. The original artwork should be done using Adobe Photoshop based on A1size (23 x 33 inches). The output will be a JPEG (1024 by 768 pixels) format in A4 size.
(f) A web site for the project. The web site should contain essential information to introduce the project as well as showcasing the proposed solutions/results/findings.

To prepare for the project demonstration during ITSP Showcase,
(a) You should state and prepare a list of assumptions made for the project evaluators before the demonstration.
(b) Print a set of all output report listings before the demonstration and present to the project evaluators during the demonstration.
(c) Make sure all team members are informed and present during the demonstration.

2.8.4 Some Useful Tips for the Presentation

Presentation (and demonstration as well) is an important component of the assessment of project. As such, besides doing your best to develop your product, you should come well prepared for the presentation. The following pointers may be useful.

2.8.5 Rehearsal

You should run through the entire sequence of the presentation at least once before the actual presentation preferably at the same location where the presentation will be conducted. Ensure that you test your product on the actual machine that will be used at least some days before and the night before. If you need to use specific rooms or machines not assigned to your group, book them through your supervisor. Run through the various topics that you want to present. Check the equipment to make sure that they are in working condition.

2.8.6 Material

Ensure that you have presentation slides printed ready for the supervisor and project evaluators 2 days before your presentation. Enhance your presentation by using charts, PowerPoint slides and other visual forms.

2.8.7 Attire

Dress properly and formally to give the supervisor and project evaluators a good impression. This is important in any formal presentation. The group should discuss and coordinate the dress code.

2.8.8 Behaviour

Show professionalism by being polite and by showing respect to the supervisor and project evaluators. Be tactful in handling difficult questions that may be posed by the project evaluators. Be punctual for all meetings, especially the presentation or demonstration sessions.

2.8.9 Questions & Answers

Project evaluators will ask some questions during the presentation or demonstration to test your understanding and the extent of your involvement in the project. Try your best to answer. You should answer questions to the point during the presentation or demonstration.

3. Project Reports by Students

3.1 General Information

These are the general information for the students:

- All project reports will be submitted to the Project Supervisor(s) on or before the specified submission date.

- Reports should not be more than 100 pages and a draft copy is to be submitted to the Project Supervisor for comments and vetting before the final binding.

- For industrial projects and projects with two supervisors, an **additional copy** of the report shall be submitted when required.

- An additional copy of the report shall be required for central keeping for the purpose of auditing.

- The project group will bear the responsibility of compiling the reports. The School will not be responsible for the supply of papers, typing, binding, printing, and etc.

- The final report should be properly bound with ring binding with 1st page using a clear plastic sheet as cover.

- During the oral presentation, the project students need to bring along the Project Report for reference to the Project Interviewers.

3.2 Project Reports

The two project reports are an extremely important aspect of the information security related project. They serve to show what the group has achieved and should demonstrate that:

- The group understand the wider context of information security related issues by relating the choice of Infosec Security Project, and the approach the group takes, to existing products or research.

- The group can apply the theoretical and practical techniques taught in the course to the problem the group are addressing and that the group understand their relevance to the security aspects of the wider world of computing.

- The group is capable of objectively criticising the group's own work and making constructive suggestions for improvements or further work based on the group experiences so far.

- The group is capable of explaining the thoughts and working processes clearly and concisely to third parties who may not be the experts in the security-related field in which the group is working.

Most of the project evaluators will not have followed the project throughout and will only have a short time to listen to a presentation and/or see a demonstration. For this reason they will rely heavily on the report to judge the project.

Students **should not underestimate the importance of the reports** and make the mistake of thinking that top marks can be achieved simply by producing a good product. This is fundamentally not the case and Infosec Security Projects could have been graded well below their potential because of an indifferent or poor write-up of reports. In order to get the balance right you should consider that the aim of the project is to produce a good report and that software, hardware, theory etc. that the group has developed during the project are also **equally important**.

Don't make the mistake of leaving the write-up to the last minute. Ideally the group should produce the bulk of the report as the group progresses through the ITSP to bring it together into a coherent document.

3.3 Report Writing Format

This note is intended to give guidance with regard to the typographical arrangement of the project reports. The intention is to standardise the report presentation.

3.3.1 Cover Page

A cover page with project number and title (refer to Appendix D on page 15).

3.3.2 Title page

A formal report always has a title page to identify title, writers, date of submission and to whom the report is submitted to (refer to Appendix E on page 16).

3.3.3 Acknowledgements

The writer may wish to express his gratitude to persons, industries or companies who may have provided assistance or guidance in one way or another.

3.3.4 Abstract

Abstract is a short summary of the report. It follows the title page and allows the reader to find out if he/she needs to read the report in its entirety and if he/she needs to read it immediately or at a later date. It should contain the purpose of the project, a brief description and conclusion or recommendations to (refer to Appendix F on page 17).

3.3.5 Table of Contents

If the report has many divisions, the table of contents may speed up the reading. It follows the abstract.

3.3.6 Notations

All notations used should be listed separately. This avoids explanations of abbreviations and symbols elsewhere in the report.

3.3.7 Introduction

This is one of the most important components of the report. It should begin with a clear statement of what the project is about so that the nature and scope of the project can be understood by a lay reader. It should summarise everything the project group set out to achieve, provide a clear summary of the project's background, relevance and main contributions.

The introduction should set the scene for the project and should provide the reader with a summary of the key things to look out for in the remainder of the report. The introduction itself should be largely non-technical. It is sometimes useful to state the main objectives of the project as part of the introduction.

3.3.8 Background

The background section of the report should set the project into context by relating it to existing published work or situation at the start of the project when the group’s approaches and methods were being considered. There are usually many ways of solving a given problem, and the group shouldn't just pick one at random. Describe and evaluate as many alternative approaches as possible. The background section can be included as part of the introduction but is usually better as a separate section, especially if the project involved significant amount of prior research.

The published work may be in the form of research papers, articles, text books, technical manuals, or even existing software or hardware of which the group has had hands-on experience. The group must acknowledge the sources of your inspiration. The group is expected to have seen and thought about other people's ideas; the group’s contribution will be putting them into practice in some other context.

3.3.9 Main Text:
This list, chronologically, the team's work of the project. The philosophies used and actions taken should be argued and presented to convince the reader that a logical solution was found in overcoming or solving the problems encountered. Only important aspect of the work should be dealt with.

The main text will describe the technical work in details undertaken during the project. The structure of the contents is highly project dependent. They can reflect the chronological development of the project, e.g. design, implementation, experimentation, optimisation, evaluation etc. although this is not always the best approach.

However when you choose to structure this part of the report, you should make it clear how you arrived at your chosen approach in preference to the other alternatives documented in the background. If you have built a new piece of software you should describe and justify the design of your program at some high level, possibly using an approved graphical formalism such as UML. It should also document any interesting problems with, or features of, your implementation. Integration and testing are also important to discuss in some cases. You need to discuss the content of these sections thoroughly with your supervisor.

3.3.10 Discussion:
This part should present a discussion of the work carried out. Usually, there are special features of the project worthy of further mention.

Negative results or discrepancies of your project work should not be concealed; try instead to explain them.

Point out any results that suggest new lines of study.

3.3.11 Conclusion:
This will, obviously, follow the above section 3.3.10 and directly as a result of the comments therein. The points should be brief and expressed in concise sentences or paragraphs. Some reports may have the discussion and conclusions written in one section.

3.3.12 References:
This is a list of works used by the team in order to carry out the project and to supplement the work.

3.3.13 Appendix:
The appendix provides a place for material that is not absolutely necessary to be in the main text. In it may be placed tables too detailed for text presentation, technical notes on method, and schedules and forms used in collecting materials, copies of documents not generally available to the reader, illustrative materials like photographs, drawings, etc.

3.3.14 User Guide:
For projects which result in a new piece of software you should provide a proper user guide providing easily understood instructions on how to use it. A particularly useful approach is to treat the user guide as a walk-through of a typical session, or set of sessions, which collectively display all the features of your system. The user guide is sometimes included as a chapter in the main body of the report, but is often better in an appendix.

3.3.15 Program Listing:
Complete program listings should NOT be part of the report except in specific cases at the request of your supervisor.

General Comments:

- All writing should be presented in "third person" and in past tense.

- Use adequate headings and sub-headings and divide the report into sections or chapters as appropriate.

3.4 Typing:

The typing (divisions into chapters, sections and sub-sections, etc.) should be discussed and determined by the students and supervisors.

All symbols, equations and formulae should be typewritten.

The typing should be on one side of the paper only, and in single spacing, but leave more space above and below headings, equations and formulae.

To allow for binding, it is imperative that there be 36 mm margin on the left and 25 mm (or more) margin all round.

Use white paper, A4 size (210 mm x 297 mm) of good quality, with 70 gsm minimum.

Appendix A: Weekly Monitoring Report

Group No.: _____ Date: From ___/___/ ___ to ___/___/___

Name of Project: _____

Supervisor Name: _____

1. Student weekly performance summary

Adm. No.	Name	No. of hours present	Progress[1]	Remarks
1.				
2.				
3.				
4.				

[1] State whether: A=On Schedule B=Ahead Schedule for no. of days C=Behind Schedule for no. of days

2. Problems encountered (if any) and supervisor's actions

Problems		Supervisors' actions[3]	Supervisors' signature[3]
Type[2]	Description		

[2] U=User requirements problem S=System problem (e.g. PC) A=Administrative problem O=others
[3] To be filled up by supervisors

Appendix B: Weekly Attendance for Group Form

Group No.: _____ Date: From ___/___/ ___ to ___/___/___

Name of Project: _____

Supervisor Name: _____

Name	Adm. No.	Date	Time-In	Time-out	Reasons for absence/lateness

Note:
1. Weekly attendance for group form is to be submitted to your supervisor every Monday morning.
2. Attendance shall be marked according to the time-table.
3. Lateness or absenteeism without acceptable valid reasons or M/C shall be marked as absent.

Appendix C: Sample of Warning Letter

	School of Digital Media and Infocomm Technology SINGAPORE POLYTECHNIC 500 DOVER ROAD, SINGAPORE 139651.	Date of Issue
Subject:	**Warning Letter for Poor Performance in ITSP Module**	

Adm. No:	
Name:	
Module Class:	
Module No.:	

Dates	**Remarks**

Reported By

To:

The School of Digital Media and Infocomm Technology has noted that you have been absent from meetings with your Supervisor and team members. Hence, your contribution towards the progress of your **Infosec Project Development and Manmagement** module is deemed to be unsatisfactory.

Please be reminded that students without sufficient contribution towards the project work may not be allowed to pass the ITSP module. You are required to see your Supervisor within 7 days, from the date stated above, so that corrective measures can be taken. Your attendance and performance in the project will be closely monitored for the rest of the session.

THIS MATTER IS TO BE TAKEN SERIOUSLY.

_____
Name of Supervisor
Signature and Date

Appendix D: Sample of Report Cover

(SAMPLE OF THE REPORT COVER)

SINGAPORE POLYTECHNIC
SCHOOL OF DIGITAL MEDIA AND INFOCOMM TECHNOLOGY

(SP LOGO)

PROJECT NO. DISM/1011/XX

VULNERABILITY SCANNING AND PENETRATION TESTING
FOR BIOMETRIC DEVICES

(MONTH & YEAR)

Appendix E: Sample of Title Page

(SAMPLE OF TITLE PAGE)

PROJECT NO. DISM/0809/XX

VULNERABILITY SCANNING AND PENETRATION TESTING
FOR BIOMETRIC DEVICES

SUBMITTED BY:

6123416	Alice Ang
6123426	Bob Boey
6123436	Malory Mah

A REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE
SUBJECT PROJECT – ST260 (DISM)

Project Supervisor: Mr. ABC

SCHOOL OF DIGITAL MEDIA AND INFOCOMM TECHNOLOGY
SINGAPORE POLYTECHNIC
500 DOVER ROAD
SINGAPORE 139651

Appendix F: Sample of Abstract

(SAMPLE OF ABSTRACT)

ABSTRACT

Purpose	:	The purpose of the project is to evaluate the susceptibility of biometric devices to attacks.
Brief Description Of Project	:	It aims to study the impacts and vulnerabilities of the biometric devices, and to document the recommendation to reduce the risks. The testing may be done with or without the knowledge of the algorithm used in the devices. It also hopes to produce and document a testing methodology to effectively test the biometric devices.
Conclusion/ Recommendations	:	Through our investigation we found that most biometric devices were reasonably secure, coupled with other security measures. The level of security level could be further improved by incorporating One-Time Password (OTP)via mobile phone to add to its existing level of security.

Appendix G: Sample of Report Content for Security Software Development Project

S/N	*Topics*
1.	**Cover Page**
1.1	Title Page
	• Name of proposed system • Diploma name, Stage, group number, supervisors' name • Admission numbers (in ascending order) and members' names • Date of report
1.2	Acknowledgements
1.3	Abstract Page
	• Summary of problems/needs • Summary of objectives • Summary of security functions • Summary of recommendations • Summary of implementation plan
2.	**Table of Contents**
	• Chapters, Contents & Page Numbers
3.	**Introduction/Background**
3.1	Introduction
3.2	Background
4.	**Requirement Analysis**
	• Description of existing system or proposed application • Analysis of problem areas, user requirements
5.	**Requirement Specification**
	Detailed description of requirements: ▪ Physical environment in which the system will be used ▪ Functionality (what/when will the system do, modes of operation etc) ▪ Data (what data are retained and for what period, input and output data and their formats, volume of data etc) ▪ Interfaces (input coming from other systems, output going to other systems, what medium the data must use) ▪ Users and human factors (Who uses the system, skill level, training, ease of use of system) ▪ Resources (hardware, software, manpower for development, use etc) ▪ Security (how to control access to system, system back up, fire/theft precaution etc) ▪ Documentation and quality assurance
6.	**System Design**
	Detail how your application design will meet the requirements: ▪ System architecture (System hardware/software configuration, function hierarchy etc) ▪ Description of major functions ▪ Database design (details of tables and fields) ▪ Input and output Form/Screen/Web page specifications ▪ Report layout specification ▪ Security etc.
	Total (max 100 marks)

Appendix H: Program Listing and User Guide for Security Software Development Project

(a) Sample of Program Listing

1. Cover Page
   - Type of project report (Program Listing)
   - Group Number
   - Group Members' admission numbers and names
   - Project Duration

2. Table of Contents and Authors
   E.g. Program Name Author
   BookNewRoom.jsp XXX

3. Programs
   - Listed in the order of the Table of Contents
   - Every program should document the author's number and name.

(b) Sample of User Guide Contents

1. Cover Page
   - Type of project report (i.e. User Guide)
   - Group Number
   - Group Members' admission and names
   - Name of Application system (XXXX system)

2. Table of Content with page numbers

3. An Introduction

4. About the Application
   - Business Activities
   - Function hierarchy diagram
   - Summary of all functions of the system: function names, description, authors, status (outstanding, completed, tested)

5. Operating Environment
   - Hardware, Software, files etc.
   - Procedure for setting up and configuring the servers and application programs.

6. General Procedures and information
   - Sign-on and sign-off procedures
   - Operating instructions

7. Function documentation (repeat for each major function)
   - Function overview
   - Detailed function description
   - Detailed narrative/diagrams work flow
   - Screen format /web page and detailed explanation of input fields
   - Description of source documents and instructions for data entry, including all codes and use of codes.
   - Output descriptions – output forms/reports with explanation

8. Complete list of test data
   - Expected and actual results

9. Appendices
   - Glossary of terms
   - Explanation of standard error messages

Appendix I: Sample of Report Content for Security Research Project

S/N	*Topics*
1.	**Cover Page**
1.1	Title Page
	• Name of proposed project • Diploma name, Stage, group number, supervisors' name • Admission numbers (in ascending order) and members' names • Date of report
1.2	Acknowledgements
1.3	Abstract Page
	• Summary of problems/needs • Summary of objectives • Summary of security functions • Summary of recommendations • Summary of implementation plan
2.	**Table of Contents**
	• Chapters, Contents & Page Numbers
3.	**Introduction/Background**
3.2	Introduction
3.3	Background
4.	**Requirement Analysis**

	• Description of existing problems or situations
	• Identifying and listing the questions/areas the group wants to explore
	• Examples of important questions to ask:
	  ○ Why do we have problems with that particular problem areas or situations?
	  ○ What is the best way to do certain thing?
	  ○ For example, what is the best way to automate the analysis of programming codes to determine the level of code vulnerability?
	  ○ How can we change things for the better?
	  ○ Which is best? Given the choices before us, which is most likely to do the most good?
	  ○ Which plan is best?
	  ○ Which solution will work best?
	  ○ Is there a better way to doing this task more efficiently or effectively?

5.	**Investigation Stage**
	Developing a strategy to find pertinent information rapidly: ▪ Harvesting information which casts light on the key questions ▪ Decide what sources of information you can use (make a list) ▪ Locate your sources ▪ Start reading, printing, taking notes ▪ Synthesize your theory or finding ▪ Evaluate what is missing, and what else is needed to complete the surveys or research Most challenging questions require several passages through the stages above before acquiring enough insight and evidence to move to the next and final stage.

6.	**Experimentation/Surveys/Findings**
	Conduct the experimentation: ▪ Develop a quick prototype, if necessary, to support the experiment/ surveys/ findings ▪ Obtain the necessary information and data ▪ Organize all the data you have ▪ Synthesize the theory ▪ Write the report or complete the experiment/surveys/findings ▪ Evaluate how well the group did.
	Total (max 100 marks)

-- the end --