**Hong Kong Institute of Vocational Education**

**Discipline of Information Technology**

**Final Year Project (ITE4116M)**

**Final Report**

**The Final report must be submitted to Moodle by 15 May 2022 23:55.**

**Please refer to the following guidelines for writing the Final Report.**

**Guidelines for Final Report**

The final report consists of three major components: project summary, final report and an oral presentation including prototype demonstration. Please organize your submission in the following folder structure, zipped and submit to moodle (if the file is too large, please divided in to two to three parts and submit by different group members). Before your presentation, please submit 2 copies of DVD containing the files below as well:

- **[Project Summary]**

- ChineseDescription.docx

- EnglishDescription.docx

- **[HighResScreenCap]**

- screen1.jpg

- screen2.jpg

- … etc

- Video.mkv - a short video to demonstrate your project

- **[FinalReport]**

- Report.docx

- UserGuide.docx

- InstallationGuide.docx

- **[Supplementary]** - if any

- file1 - for example: referenced material, like e-books

- file2… etc

- **[Program]**

- **[project]**  - your project folder(s)

- **[libraries]** - if any

- **[models]**  - if any

- **[Presentation]**

- FinalPresentation.ppt

- **[Supplementary]** - if any

- file1 - for example: demo video

- file2… etc

- **[PreviousReport]**

- IntialReport.docx

- InterimReport.docx

**Project Summary**

You are required to submit a brief description in 100 – 200 words introducing your game in **both** Chinese and English. A separate folder should be used to store at least 5 High Resolution Screen Capture that can represent your game. And a short video to demonstrate your project (5 – 10 minutes).

**Final Report**

The written submission for the Final Report is a much more formal document than previous reports. At this stage of the programme, the level of presentation and organisation of your reports should be comparable to those in the academic and professional community. Therefore, the guidance on format should be followed exactly, and the details are to be found in Appendix. As far as the organisation of the material is concerned, this will depend on a certain extent of the nature of your project. Nevertheless, you should follow the sequence suggested in the next section, and if you want to make any major changes, you should discuss them with your supervisor.

Because the written submission of the Final Report is a main component to understand and assess your project, a poor submission could easily mean that you would fail the component. For this reason, you are asked to submit a draft report to your supervisor about two weeks before the final version is due**.** Your supervisor will not grade the report nor give you detailed criticism, but he/she will point out whether the report is acceptable, and if not, where you should make improvements.

You should pay attention to the following components in you report:

**Structure / documentation / research / literature review / background** -for following, and appropriately adapting to, the specifications provided in Appendix and for evidence that you have made some attempt to read around the specific topic of the project.

**Problem analysis** - for evidence that you have investigated commercially available solutions, analysed the problem, etc. to set your own work in context. You are expected to carry out and document a thorough analysis of the problem and utilise the conclusions of this in your final design/solution.

**Design of the solution** - for indicating how the solution was developed and also how problems encountered were overcome. This heading covers such aspects like your approach to problem solving, the quality of design, choice of methods, tools and techniques. You are expected to take a 'top-down' approach to the problem and to generate and evaluate different solution options, based on your analysis of the problem, to justify their final choice. The report should not contain full details of the alternatives, but sufficient to show that you are aware that there are usually several different ways to achieve any particular goal and that each of these may have advantages and disadvantages. The chosen method of solution should be fully documented and presented in a clear and well-structured manner. The solution should be complete, even though any implementation may only be partial, for reasons of time or other resource issues.

**Quality of implementation** - for the quality of the implementation of the chosen solution. The implementation must match with the user requirements and the design of solution. If the project involves software development, this focuses on programming style, techniques used etc. For other types of problems, the criteria may vary.

**Testing** - for the quality of the test plan, data and results - the detailed content will clearly depend on the type of project carried out.

**Critical evaluation of the work** - for a critical discussion of all aspects of the project, from whether the original problem formulation was correct, to how well the solution meets the specification.

It is important to realise that marks are given for quality, not quantity; the length of each section should be appropriate to the nature of the problem, and the amount of work which you have done in that area. This is also true for the whole report. Because of this, it is difficult to provide a guideline for the length of a report. For a typical project group of three members, the length of the final report should be 8,000 - 10,000 words (excluding tables, figures, listing etc.).

The following is the suggested structure of the final report:

**Title page**

**Abstract**: the objectives of the project and the final report.

**Acknowledgement**

**Table of Contents**

**List of Tables and Figures**

**Introduction**: a general description of document structure, the project and its background.

**The requirements**: architecture of the proposed system, scope of the proposed system, description of functions provided and data processed by the system, other non-functional requirements, such as interface with existing system(s).

**Documentation for problem analysis:** data model (e.g. ERD or class diagram), functional model (e.g. DFD + process description or use cases + use case descriptions), dynamic model (e.g. control flow diagram + state transition diagram, sequence diagram + object collaboration diagram), data dictionary.

**Documentation for detailed design**: data design, software/hardware architectural design (system design), procedural design (module), user interface design.

**Implementation**:record of the implementation work, e.g. test plan, test results, changes to design and justification of changes. The implementation documentation should include the user guide and installation guide which are submitted in a separated volume.

**Results and conclusions**: a summary and a critical discussion of the results, conclusions, any problems/difficulties encountered, any delays/changes in project schedule, limitations of the proposed system, and in some cases a subsection suggesting further developments to be undertaken.

**References**

**Appendices**: there must be at least TWO appendices:

1. The first must contain the original project plan with segmentation of activities and estimated times for their completion, which you submitted in your Initial Report, together with a revised plan which records how you actually spent the time.
2. The second must be copy of your project log book.

**Program listing**: listing up to 20 pages of source code (code which is written by yourself) can be included in the appendix of the final report and in this case should be produced on A4 paper. If you have substantial program listings these should be submitted in a CD/DVD.

**User guide** **and installation guide**: a user guide and installation guide for the system submitted in a separate volume.

Please also include the soft copy of the source code and executable code of your program stored in a CD/DVD. Please also include the soft copy of your reports, user guide and installation guide.

Some of the above items may not be relevant to your project. You should adjust the above report structure to suit for your own need, especially your development methodology. You should consult your supervisor and co-marker when you set your own report structure.

**Final Report Oral Presentation and Demonstration**

Each project group is assigned a 1-hour time slot for presentation and system demonstration. The presentation should take 20 minutes or less and cover no more than 20 slides which can include the project objective, problem background, functions provided, some high-level analysis and design diagrams (max 1 diagram for one kind, e.g. system architecture diagram, use case diagram, class diagram, ....), planned and actual project schedules, testing strategy, final outcome and critical evaluation, etc.

You need to consider the following points for the presentation:

1. Selection of material.
2. Preparation.
3. Presentation/handling questions.

When presenting your work, you will be expected to make use of the handouts, computer files prepared by any presentation software, overhead projector slides etc. as appropriate.

After the presentation each student will have 10 minutes to demonstrate his/her prototype implementation. You should set up and configure your system properly before the presentation. Due to the time constraint, students should think carefully the choice of system functions to be shown and plan the test cases ahead. We suggest each student demonstrate the most important functions and main program routes and record the demonstration of all other secondary functions and alternative program flows on a CD/DVD.

**Appendix**

**Format of the Report**

**Size and typing**: single line or 1.5 lines spacing throughout; A4 white paper; a font size of 12 point for the body text.

**Margins**: all margins are at least 1 inch, except the left margin, which is 1.5 inches. This is to allow for binding. Spiral binding has to be used.

**Page numbering**: the pages are numbered consecutively except for the title page. Appendices are numbered separately on each page as A1, A2, B1, B2 etc.

**Style of writing**: it has become conventional for report writings to refer to oneself in the text as 'the author' rather than 'I' or 'me'. Mis-spelling is irritating - use the spell checker inside the word processor.

**Source Materials**: extracts and interpretations of other people's work should be identified in the text by either the authors’ name(s) and/or a numeric index; the source of the extract or interpretation should be listed under the section headed *References*. This section should list all references in alphabetic order of author's surname. The detail must be given to enable the reader to trace the source; hence it must contain the following elements in sequence:

(a) the author's surname followed by his initials (e.g. SMITH, A B).

(b) the date of publication (e.g. 1985)

(c) the title of the work (in italic)

(d) the place of publication (e.g. London)

(e) the name of publishers (e.g. Wiley)

Examples:

1. LANGEFORS, B. (1973). *Theoretical Analysis of Information System*, Philadelphia: Anerbach.
2. SALTON, G., YANG, C. S. AND YU, C. T. (1975). *A theory of term importance in automatic text analysis*, Journal of the American Society for Information Science **26**, 33-44.

**Organisation**: The report must be divided into major sections, each with its own heading, beginning on a fresh page. The appendix has its own main heading, and each appendix is appropriately labelled: 'APPENDIX A', 'APPENDIX B'

**Tables and diagrams**: should be numbered 'Table 1', 'Figure 1' throughout the text.

**Annex**

**Suggested structure of the GSD Final Report**

**Cover Page** (see the sample given)

**Abstract:** brief description of the objectives of the project (about half page)

**Acknowledgement** (a separate page)

**Table of Content** (state page number clearly)

**Table of Figures (optional)**

**Introduction:**

***State the goals of the game***

Brief game description, game genre, scope of the game… etc

Target Players

Compare your proposed game with other existing games

Pros and cons of your design

***Document Structure***

**Game Design**

***List of the basic constraints and requirements***

For example: To be finished in 8 months, 3-tiers architecture (client-server-database) is needed, currently available technologies (e.g. AR, VR) and resources… etc.

***Design Thinking – Empathy***

Describe the user experience on similar games in the market (both pros and cons)

***Design Thinking – Define***

What elements could make your game more enjoyable?

**List the reframe the needs and insight**

***Design Thinking – Ideate***

Concentrate on idea generation (divergent thinking)

List all the ideas

Evaluate different proposals (convergent thinking)

How the best proposal is chosen

**Game Overview**

***Story background***

***Play modes***

***System Architecture (Clients, Server and Database connections in your system)***

**Game World**

***Game Environment***

***Level Design (if any)***

***Maps Design (if any)***

***Characters (if any)***

included Player character(s), Non-player characters – NPC

Character attributes, abilities… etc.

Skills

***Objects***

Interactive world elements

Key Items

Inventory Items

**Gameplay Description**

***How players interact with the game and other players in the game***

***User Interface Design***

***Control***

**Software Design**

***Use Case Diagram, Class Diagrams, Sequence Diagrams***

***Database Design…etc***

**Hardware and Software Requirements**

**Such as software libraries, game engine… etc.**

**Technical Considerations**

***Performance requirements…etc.***

**Test Plan**

***Test Plan and Test Results***

***Conclusions***

***Summary***

***Critical discussion of the game, problems/difficulties encountered***

***Limitations of the proposed systems…***

**References**

**Such as documents, websites, software libraries, models, audio…etc**

**Appendices**

***Workload Distribution***

***Budget Estimation***

***Log Sheets (see the sample given)… etc.***

***(Some abandoned designs that you wanted to show may put here too)***