DM 2199 Computer Graphics Project

(13th February – 3th March 2017)

GUIDELINE / HANDBOOK

Objectives

- Conceptualize and code in a 3D environment
- To apply C++ and project management skills to conceptualise, design, code, present, and document a text-based game within a deadline.
- To foster good work ethics
- To take initiative and independence in setting and delivering project scope, goals and features
- To experience working in a team

Project theme: Futuristic

- Use your imagination how the world will be and what can be happen around us after 100+ years later!

Location

- **M.314 / M.322**

Supervisors

Name	Email	Office	Phone
Chris Hong	chris_hong@nyp.edu.sg	M.609	6550-1775
Weng Junxuan	weng_junxuan@nyp.edu.sg	M.532	6550-1743
Eric Sng	eric_sng@nyp.edu.sg	M.507	6550-1812
Alex Toh	alex_toh@nyp.edu.sg	M.404	6550-1814
Tang Wen Sheng	tang_wen_sheng@nyp.edu.sg	M.507	6550-1770
Quah Poh Yong	quah_poh_yong@nyp.edu.sg	M.608	6550-1786

Knowledge Application

- Apply Computer Graphics, Data Structures and Algorithms, Visual Art Techniques C++ programming, and any other knowledge learned during this semester to create the game.

Requirements

- Team leader must submit a list of members' contact numbers to the supervisor.
- Game uses the computer keyboard and mouse.
- Final product runs on Windows operating system console environment.
- Progress to be documented in a report that is updated during various stages of the project. This report will culminate in a final report.
- Task allocation for each team member.
- Determine the dimension of the scene. (e.g. 1000 x 1000 x 1000)
- Plan and design the futuristic scene layout.
- Decide on the activities in the scene (at least 1 difficult and 2 easy per person), examples:
    - Shooting vehicles or robots
    - Mining minerals or resources
    - Talking with AIs
    - Planting flag
    - Building houses or buildings
    - Your own idea!
- Design up to 10 NPC characters or objects. (who do some random activities)
- Design 3 stories or scenarios to "play", examples:
    - Racing
    - Conquer and plant flag on moon
    - Build and launch a rocket, vehicles, futuristic machineries, etc. (a.k.a. KSP)
    - Explore the city
- Decide what character to play as: human, alien, robot, rover
- All Computer Graphics elements should be in (Light, camera, texture, skybox, controls, models, animations, text, etc.)
- Implement the project based on the plan

Deliverables

(to be completed by the end of the project, except for the initial game proposal)

1. Initial proposal

- A Initial proposal of a game with project schedule. Due 1st meet-up with Supervisors
    - The game idea and influences
    - A write-up on how the game should be played
    - Unique selling point
    - Features list
    - Task breakdown and estimation for each feature
    - Task allocation for each team member
    - Project schedule

2. Final submission

- Game Report containing:
    - The game idea/concept. Describe the game.
    - Project schedule and timeline of task breakdown
    - Screenshots
    - Description of features (> 50 words for each feature)
    - Knowledge applied
    - Problems encountered/ problems solved / Lessons learnt
    - Future enhancements/improvements

- Work points documentation
    - Workload points / Effort points for all the meet ups (1-5 + Final Presentation)
    - In the format listed out in the Appendix
    - Leave under the ‘reports’ folder.

- User guide
    - How to play the game, game manual targeted for players.
    - Leave under the ‘reports’ folder

- Source code, final compiled executable
    - Final game should be bug-free, stable and according to specifications laid out in the report
    - Click to run, with instructions on how to play.

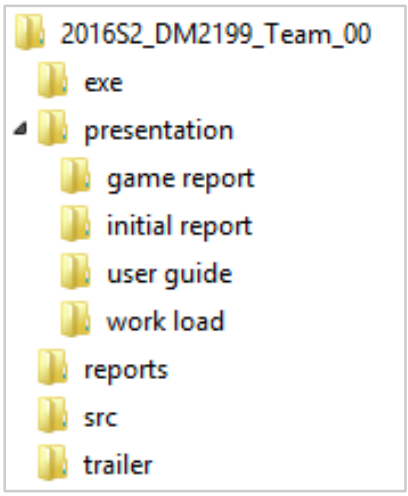
- Video Trailer of the game (no more than 30secs), as a marketing promotion of the game.

Submission format

The submission shall be in a zipped file with just the folders listed below.

1. Executable (Compiled in “Release” mode) in the folder “exe”
2. Powerpoint presentation in the folder “presentation”
3. Initial reports in the folder “reports\initial report”
4. Final reports in the folder “reports\game report”
5. User guide document in the folder “reports\user guide”
6. Work load excel sheets in the folder “reports\work load”
7. Source codes in the folder “src”
8. Trailer Video in the folder “trailer”

The zipped file shall be named in this format 2016S2_DM2199_Team_XX.zip
Where XX is the team number in 2 digits. e.g. 2016S2_DM2199_Team_04.zip



(Directory structure of submission in zip file)

Professionalism

- Students need to have correct attitude to project work.
- Attendance, punctuality, initiative, motivation and effort put in will be awarded with grades
- Students are expected to be at the lab every day. Attendance is compulsory.
- Each team is to take the initiative to fix up meetings with their supervisor (2 meetings required per week)

Marking Scheme

- The game must be playable
- How much effort placed in work
- Degree of difficulty of the programming task
- Application of knowledge acquired during the semester
- Attitude towards work

Guidelines

- Week 0: Proposal and design of activities, scenarios, layout
- Week 1: Scene layout with texture, skybox, OBJ and characters
- Week 2: Activities, scenarios and UI
- Week 3: Testing and polishing
- Planning on following week tasks to be done every Friday

Supervisor Meeting

- Teams will arrange to meet with their supervisors twice a week to show their progress.
- Marks will be given during each meeting. No meeting, no marks.

Ground rules

- 9am to 6pm, 13 Feb to 3 Mar 2017.
- No food and drinks in lab.
- Presentation on Fri, 3 Mar 2017.
- Arrange to meet your supervisor twice per week.
- Version control must be used.
- Hold daily SCRUM meetings of 10-15 minutes.

Notes

- Students should scope their features and tasks such that they can finish developing on time.
- At the same time, ensure that reasonable amount of work is done.
- 3 weeks is short. Students should start working as soon as possible.
- Students must program and be able to explain their code.
- Students who miss the scheduled meetings will lose the marks allocated for that meeting.
- Students should approach supervisor/technical advisers for advice.
- Teamwork is very important in a multi-member project. Communicate with your team members, everyone in the team must know what everyone else is doing at all times.
- All students must have a task that involves writing C++ code.

Schedule and Assessments

Pre-week

- Initial proposal

Week 1

- Meet #1 : Discuss proposal
- Meet #2 : Progress check

Week 2

- Meet #3 : Progress check
- Meet #4 : Mid-presentation with team supervisor

Week 3

- Meet #5 : Progress check
- Meet #6 : Final presentation + Report and submission

Final presentation

- 3.March 2017 (Friday) 9.30am-
- 15 minutes, including set-up, presentation, demo and Q&A.

Workload points

Workload is the quantified effort of the task. There is two value for this task management. The one is “Estimated Volume” for the task and the other is “Actual Workload Point”.

In every meet with your supervisors, you are to provide a “Task List : Preview” for next iteration (until next supervisor meeting) with accredited estimation volume and member assigned. You are also need to provide a “Task List : Review” with the actual workload points that are agreed on by all team members.

These lists are for a team and the team leader or person in charge is to use the format and produce a copy for the supervisor is listed in the appendix at every meet.

- All the task must be accredited by all team members.
- The task must prepared for “Task List : Preview” before supervisor meeting.
- Try to keep the volume size under 10.
- If more than 2 members are working on same task, divide the task for each member.
- Make a note/comment as much detail as you can. It should be very intuitive and easy to understand even who doesn’t have any information with your project.

Appendix 1 :
Final Report Cover Page Sample

DM2199 Computer Graphics Project

Academic Year 2016/2017 Semester 2

Final Report

Team Number / Name	02 - Team Guardians
Project Title	Save Xandar
Members	160000A Star-Lord (Leader) 160000B Gamora 160000C Rocket 160000D Groot

Appendix 2 :

Task List Report - Preview / Review (Excel form provided in separated file)

Task List Report - Preview / Review

Team No.	1		Est.	Act.
Team Member	Member Name 1	M1	5	7
	Member Name 2	M2	3	0
	Member Name 3	M3	4	2
	Member Name 4	M4	0	2

Supervisor	(Name)
From	15.Aug.2016
To	18.Aug.2016
Preview	15.Aug.2016
Review	19.Aug.2016

Preview					Descriptoin of Task	Review		
No.	Title	Assign	Est.	Note / Comment		Done By	Act.	Note / Comment / Issue
1	Title of task 2	M1	5			M1	7	Why extended?
2	Title of task 2	M2	3			M2	0	Why not done? Pending? Deleted?
3	Title of task 3	M3	4			M3	2	Why volume reduced?
4	Title of task 4	M2	0			M2	2	New task. Why haven't expected early?
Total			12				11	

Comments for preview
(Any comment for this sprint?)

Comments for review
(Any comment for this sprint?)

Member Name 1 Member Name 2

Member Name 3 Member Name 4

Member Name 1 Member Name 2

Member Name 3 Member Name 4

Appendix 3 :

Teams

Team					Supervisor
1	Lin Xin	Rui Jing	Jasper	Joanne	Alex Toh
2	Lucas	Jean	Shishanth	D'Cotta Gabriel	Alex Toh
3	Eugene	Yoong Soon	Ming Xiu	Beckham	Alex Toh
4	Faryss	Pei Sheng	Nicholas	Darryl	Chris Hong
5	Zi Sheng	Benjamin	Xin Yi	Aaron	Chris Hong
6	Boon Ping	Ryan Lua	Siang Lin	Wilfred	Chris Hong
7	Stanley	Hui Sheng	Haziq	Yong Han	Chris Hong
8	Chee Mun	Giggs	Daniel	Lin Hong	Eric Sng
9	Nathaniel	Shih Wei	Siong Yu	Ai Long	Eric Sng
10	Jing Jie	Zhi Hao	Isaac	Jan Raphael	Eric Sng
11	Devin	Samuel	Javier	Ryan Chan	Quah Poh Yong
12	Desmond	Meng Wei	Edword Foo	Alan	Quah Poh Yong
13	Kitson	Yu Ming	Adrian	Sheng Yang	Quah Poh Yong
14	Calvert	Yi Chun	Chuan Xu	Wilson	Tang Wen Sheng
15	Edward Chan	Marcus Tan	Esther	Wafieqa	Tang Wen Sheng
16	Hong Yu	Man Cong	Esmond	Liang Li	Tang Wen Sheng
17	Jolyn	Marcus Lim	Hong Sheng	Hizaruddin	Weng Junxuan / (Tan Siew Lan, for last week)
18	Wayne	Kevin	Steven	Rick	Weng Junxuan / (Tan Siew Lan, for last week)