COMP710: S2, 2018 – Assignment: Team Game Project

ISSUED: 17 SEPTEMBER 2018, WEIGHTING: 50%

ASSIGNMENT DEADLINES:
Team's due date and time, deliverables submitted via Email:
- Team Formation: **8:00pm, Monday, 24th September 2018**

Team's due date and time, deliverables submitted via Blackboard:
- Design Phase: **5:00pm, Friday 5th October 2018**
- Gold Milestone Build: **12:00noon, Wednesday 31st October 2018**

Team's due date and time, demonstration in-class:
- Alpha Milestone Demo: **4:10pm, Monday 15th October 2018**

Individual's due date and time, deliverables submitted via Blackboard:
- Post Mortem: **5:00pm, Wednesday, 31st October 2018**

TEAM GAME PROJECT:
In a team of two, three or four members collaborate to design, plan, schedule, and develop a video game.

Individuals must share accountability for the overall game production and delivery, while also taking responsibility for programming various aspects of the overall game. Team work is undertaken during the On-Campus Studio Sessions during weeks 9 to 12, as well as during student-directed learning hours. Aim to create a complete game experience. Utilise best project management practices during the design and development of the game.

The team must research and develop a game with core features which expand upon knowledge presented in class. The design should be limited in scope and complexity based upon the design and development time available; however the team must research and implement unique features for the game.

This project must be a new game idea, do not utilise any existing game designs from previous assignments.

The development is to utilise the following game production stages:
- Pre-production – Team Formation and Design Phase
- Production – Development Phase
- Post-production – Personal Reflection Phase

STUDIO PRACTICE:

Attend each of the scheduled COMP710 Game Programming On-Campus Studio Sessions and actively contribute to the development of your team's game; the entire duration of each class session from weeks 9 to 12 will be dedicated to studio-based practice on the project. The lecturer will be on-hand to supervise each project's progress, offer formative critique and project development advice. Teaching staff will monitor attendance of the On-Campus Studio Sessions, students must sign and date the VoA upon request for each session.

TEAM GAME PROJECT TIMELINE:

Each team member must schedule at least 10 hours' worth of tasks for development during weeks 9 to 12, with 4 hours of these tasks will be undertaken during the On-Campus Studio Sessions each week.

2018 Semester 2	Key Team Event	Key Individual Event
Week 9	Team Proposal	Team Confirmation
Week 10	Design Phase Due	
Week 11		
Week 12	Alpha Milestone Demonstration	
Week 13		
Week 14	Gold Milestone Deliverable	Post Mortem Due

DEVELOPMENT ENVIRONMENT:

The project must build on the AUT Lab Workstations as setup in WZ601.

SVN REPOSITORY:

The team is to utilise the AUT SVN repository throughout the duration of the project. This repository is accessible internally and externally to the AUT network. Each team will be provided with an area to commit and share project files. Each commit must be accompanied by a useful commit message. The repository can be accessed at: `https://dctwsvn.aut.ac.nz/svn/COMP710-2018-S2/`

INDIVIDUAL DEVELOPMENT JOURNAL:

Throughout the design and development each individual must keep an individual development journal detailing all activities undertaken on the project. This journal should detail team meetings, all research activity and findings, an overview of the individual's work undertaken. Additional technical design not detailed in the Technical Design Document should also be included in this document. Any notes, important decisions and action points from team meetings should also be detailed in this journal.

PRE-PRODUCTION – TEAM FORMATION PHASE:

Individuals must form teams. Teams must be sized between two and four members, inclusive. Each student must belong to a team. The team must email the lecturer (`steffan.hooper@aut.ac.nz` with the following subject line: `GP: Proposed Team`) before 8:00pm on Monday the 24th of September 2018 stating the team member's names. If an individual is not allocated to a team, the lecturer will then decide which team to allocate the

individual to – beware, this may result in entire team membership being adjusted to accommodate individuals.

PRE-PRODUCTION – DESIGN PHASE:

During the pre-production phase, design a game to be implemented by the team. The result of the pre-production phase must be a:

- **Game Design Document**: Detailed description of the game to be implemented. The focus of this document should be for all members of a game development team (art, design, production, or programming), ensure it is non-technical in nature. The document should address the following areas, but not be limited to this list, remember each game design document will be different:
    - Game Title/Name, Genre, Target Audience;
    - Core Game Play, Game Mechanics, Key/Core Features;
    - Player Goals, Player Activities, Game Flow, Game World, Game Objects;
    - Algorithms that govern game play;
    - Main View, HUD, User Interface Design, Menu System, Control Scheme;
    - Level/Mission designs;
    - Required assets: 2D Art, 3D Art, Animation, Sound, Music, etc.;
    - Bibliography: APA 6th Edition Format.

- **Technical Design Document**: Detailed description of key technical features required for the game to be implemented. The focus of this document is for a programmer to utilise as the documentation covering the analysis and design phase of development. Use technical descriptions and diagrams to detail the following areas as appropriate:
    - Target Platform(s), Development Environment and Tools, Required Technology;
    - Key Technical Challenges and Possible Solutions;
    - Architecture Overview: Design, Data Structures, Patterns;
    - Key Algorithms: What technical algorithms will be used, how do they function?
    - Development Methodology, Risks, Scoping and Feature Importance;
    - Third-party APIs and Middleware;
    - Bibliography: APA 6th Edition Format.

- **Schedule** detailing:
    - Team Milestones: Predefined features that will exist at each Milestone.
        - Milestone 1 – First Walk and Talk: Key/Core feature(s) demonstrable.
        - Milestone 2 – Alpha: Playable game demonstrable, bugs may be present.
        - Milestone 3 – Beta: Feature complete game demonstrable, minor bugs may be present.
        - Milestone 4 – Gold: Feature complete game.
    - Individual Task Allocations:
        - Detailed production schedule suitable for the team's development methodology.
        - Activities to accomplish within a given time frame.

Create a team sign-off section in each design document and the schedule. Each team member will sign their agreement to the direction of the team's game design, technical design and production schedule responsibilities. Create a bibliography as necessary in the construction of each document.

PRODUCTION – DEVELOPMENT PHASE:

The team must implement the game based upon the design.

Development progress for the game will be reviewed by the lecturer in-class at the Alpha Milestone Demonstration.

Upon completion of the Gold Build, create a detailed Gold Milestone Report summarising feature completion and responsibilities undertaken by each team member.

The final deliverable, the Gold Milestone, is to include a release build executable, and associated source code and assets. Also include a readme.txt, Known Issues document, Environment Setup and Building Instructions document and Gold Milestone Report with the Gold Build.

POST-PRODUCTION – REFLECTION PHASE:

Once development is complete individually report on the game development process by writing a post-mortem. The post-mortem must reflect upon the design and development processes undertaken. It should describe areas of difficulty, and the problem-solving methodologies applied to resolve issues in design and development. The document must be at least 1500 words in length, and clearly include the following five sections: Overview, What Went Right, What Went Wrong, Lessons Learnt, and a Conclusion.

MIDDLEWARE AND THIRD-PARTY RESOURCES:

The following middleware and libraries are approved for use in the assignment:
- COMP710 GP 2D C++ Framework;
- C++ Standard Template Library;
- Simple DirectMedia Layer;
- FMOD Low-Level API;
- Lua;
- Box2D.

Permission to utilise any other third-party, externally created assets must be sought from the content's author and the lecturer. This includes art assets, sound assets, and source code. If students wish to use any third-party code or middleware this must be discussed with, and approved by, the lecturer prior to the development phase. All requests and approvals must formally occur via AUT Blackboard's Discussion Forum.

Any third-party assets must be clearly attributed in the game's credits and accompanying Gold Build documentation.

INTERFACE FEATURES:

The game executable is required to provide an intuitive interface with the following features:
- Clear instructions;
- Input controls;
- At the end of the game, a new game can be started without exiting the executable.

BUILD QUALITY:

Write clear and efficient game source code. The source code must compile at Warning Level 3, with no errors or warnings present.

RUNTIME QUALITY:

The Gold Build executable must be free of:

- Memory leaks;
- Bugs;
- Crashes.

GOLD MILESTONE RELEASE BUILD FOLDER:

A release build executable folder must be included with the Gold submission. All assets required to run the game must be included inside the Gold Release Build folder. This is to be the final build of the game that would be "Gold Mastered" for release. Ensure the Visual Studio's project settings are set to Release when creating this build.

DESIGN PHASE – TEAM FORMATION SUBMISSION:

Deliverable Due: **8:00pm, Monday, 24th September 2018**

Submit via email to the lecturer.

DESIGN PHASE SUBMISSION:

Deliverable Due: **5:00pm, Friday, 5th October 2018**

Submit the documents as separate PDF files in a zip named as follows:

`Design – `<u>`Team Name`</u>`.zip`	Submission zip.
`Coversheet – `<u>`Team Name`</u>`.pdf`	AUT Team Coversheet.
`GDD – `<u>`Team Name`</u>`.pdf`	Game Design Document.
`TDD – `<u>`Team Name`</u>`.pdf`	Technical Design Document.
`Schedule – `<u>`Team Name`</u>`.pdf`	PDF Schedule Document

ALPHA MILESTONE DEMONSTRATION:

Deliverable Due: **4:10pm, Monday 15th October 2018**

As a team, demonstrate the game's features in-class.

GOLD SUBMISSION:

Deliverable Due: **12:00noon, Wednesday 31ˢᵗ October 2018**

Submit the game files in a zip named as follows:

    ▤ **Gold – <u>Team Name</u>.zip**   Zip containing all game files
        ↳▤ **Coversheet – <u>Team Name</u>.pdf**   AUT Team Coversheet.
        ↳🗁 **Gold Build**   Folder containing release build files
            ↳▤ ***.***   Files required to run the game…
            ↳▤ **readme.txt**   Details author and game controls
        ↳🗁 **Source**   Folder containing project and source files
            ↳▤ ***.***   All files required to build the game…
            ↳▤ **KnownIssues.pdf**   Details the known issues with the build
            ↳▤ **BuildSetup.pdf**   Environment setup and build instructions
        ↳▤ **Milestone Report.pdf**   Details feature completion.
        ↳▤ **Dev Log – <u>Student Name</u>.pdf**   Individual Development Journal.
        ↳▤ **Dev Log – <u>Student Name</u>.pdf**   Individual Development Journal.
        ↳▤ **Dev Log – <u>Student Name</u>.pdf**   Individual Development Journal.

INDIVIDUAL POST MORTEM SUBMISSION:

Deliverable Due: **5:00pm, Wednesday 31ˢᵗ October 2018**

Accurately complete the electronic Individual Assignment Coversheet PDF document and include this document in the Post-Production submission zip. The coversheet is available on Blackboard in the Assessment section. Include the Gold Milestone Release Build Folder and all source code, Project and Solution files in the submission zip. Include the Post-Mortem document as a PDF. Submit the zip, and associated files, via Blackboard, named and structured as follows:

    ▤ **Post - <u>Student ID</u>.zip**   Post production zip.
        ↳▤ **Coversheet - <u>Student ID</u>.pdf**   AUT Individual Coversheet.
        ↳▤ **Post-Mortem – <u>Student ID</u>.pdf**   Post-mortem document.

LATE SUBMISSION:
No late submissions will be accepted.

MARKING CRITERIA:

Criteria:	Weight:	A	B	C	D
Pre-Production Planning: - Team Formation - GDD - TDD - Scheduling	**15%**	Excellent topic coverage, another team could utilise this documentation to implement the game. Clear milestone features defined.	Good topic coverage, another team could utilise this documentation, with minor queries. Clear milestone features defined.	Adequate topic coverage, however development questions are left unanswered. Clear milestone features defined.	Missing documents or poor topic coverage.
In-class Alpha Milestone Demonstration: - Gameplay - Implementation - Complexity - Attendance	**20%**	Significant functional progress shown at milestone demonstration.	Evolving progress for game features shown at milestone demonstration.	Core functionality demonstrable at milestone demonstration.	No product to review at milestone demonstration. Individual team member does not attend milestone demonstration.
Gold Build: - Builds - readme.txt - Known Issues - Environment Setup and Build Instructions - Milestone Report	**15%**	Project builds successfully. All documents comprehensive. Comprehensive milestone report present.	Project builds successfully. All documents present. Milestone report present.	Project builds successfully. Milestone report present.	Project does not build. No milestone report.
Individual Contribution: - Features Developed - Implementation - Complexity - Studio Practice - Attendance - Contribution - Developer Journal - SVN Commits - Post Mortem	**50%**	All individual's features complete, overall product is cohesive. Regular SVN commits made. Individual made a significant contribution to the team game project.	Majority of individual's features complete, overall product is cohesive. Regular SVN commits made. Individual made a consistently good contribution to the team game project.	Some individual features complete, missing features may negatively impact on the overall product. SVN commits made. Individual contributed to the team game project.	Individual did not develop any features or individual's feature responsibilities unclear. Individual made a poor contribution to the team game project.