



School of Design and Informatics

Session 2016/17

Module Code: **CMP105**

Module Title: **Games Programming**

Module Deliverer: **Dr Paul Robertson**

Unit of Assessment: **Unit 1 of the module assessment – 100%**

Submission date: **Tuesday 1st May 2018.**

Suggested Feedback Return Date: **22nd May 2018.**

Assessment overview

Design and develop a sprite-based computer game application. The application should demonstrate and showcase your understanding of games programming. The games application must use C++ and SFML, with no use of additional libraries or game engines. The games application must be more complex than a pong clone and must run on the lab computers. Example game types include top-down or side-scrolling shooters, a platformer, infinite runner or tower defence. If you are unsure about your game idea please speak with module tutors about it.

Features to be incorporated into the games application are:

- The use of 2D sprites, including animated sprites. Some sprites should have multiple animations.
- An introductory splash / menu / option screen. A screen explaining the controls and how to play, before launching into the game.
- A game end screen. A screen displaying win/death/end of game.
- A scoring mechanism. An on-screen display of score or another method of making the player aware of their progress.
- User interaction. Keyboard and mouse input from the player in a way that effects the game.
- Pause function. The game must be able to be paused by the player.
- Collision detection and resolution. A simple example would be the player taking damage when colliding with an enemy, or a score incrementing when collecting items.
- Use of games related mathematics. For example, gravity, inertia, forces, etc.
- Game logic.(Collect all the items to win, defeat all the enemies, enemy movement, etc)
- Demonstration of sound effects and music.

It is only necessary to complete one level of the prototype game to demonstrate its functionality. The application should be written in C++ in a structured and well commented manner using object oriented programming principles. Credit will be given for good program structure, class construction, object-orientation, and commenting.

You are also required to submit a short PowerPoint presentation (8-10 slides) describing the features and operation of your application. You will **not** be presenting this presentation, so the information you provide must be concise. Feel free to include screenshots, diagrams and code snippets to aid explanation. The presentation template provided contains all the elements that need to be covered in the presentation.

Submission

Electronically via Blackboard by Tuesday 1st May 2018.

- The submission should include the source code/project, an executable version of the project and the presentation. These files should be contained within a zip file for uploading, using the following folder structure:
 - A folder titled "source" containing the entire Visual Studio project. You can exclude the project SQL file and the "ipch" folder as these will increase the size of your submission but are not required.
 - A folder titled "exe" containing the executable file and any graphics and audio required for the project to run standalone.
 - A folder titled "pres" containing a PDF or .pptx copy of the PowerPoint presentation.

- The zip should be named with the following format
StudentNumber_SurnameForename.zip
e.g. 123456_SmithJohn.zip

All submissions must be uploaded to the appropriate location within the Blackboard system. You will be able to have multiple submissions (in case of errors) but only the last submission will be marked. Grades and feedback will be released on Blackboard as close to the suggested date. A Rubric will be used for feedback, this can be access via the link when looking at your grade on Blackboard via MyGrades.

Marking scheme

Literal Grade	Evaluative Descriptor	This Assessment
A+	<p>Excellent overall.</p> <ul style="list-style-type: none"> • Demonstrates an excellent grasp of the subject matter. • Excellent capacity for original and creative enquiry. • Excellent ability to critically evaluate, analyse, synthesise and integrate complex information. • Excellent communication skills. <p>In addition, exceptional in at least one of the above.</p>	
A	<p>Excellent overall.</p> <ul style="list-style-type: none"> • Demonstrates an excellent grasp of the subject matter. • Excellent capacity for original and creative enquiry. • Excellent ability to critically evaluate, analyse, synthesise and integrate complex information. <p>Excellent communication skills.</p>	<p>A meticulously designed and constructed games application. Demonstrating a complex use of all of the required features.</p> <p>The code is well structured and commented throughout. Demonstrating good object oriented practice.</p> <p>A presentation demonstrating a thorough and detailed understanding of the development process.</p>
B+	<p>Very good overall.</p> <ul style="list-style-type: none"> • Demonstrates a very good grasp of the subject matter. • Very good capacity for original and creative enquiry. • Very good ability to critically evaluate, analyse, synthesise and integrate complex information. • Very good communication skills. <p>In addition, excellent in at least one of the above but overall performance deemed to be very good.</p>	
B	<p>Very good overall.</p> <ul style="list-style-type: none"> • Demonstrates a very good grasp of the subject matter. • Very good capacity for original and creative enquiry. • Very good ability to critically evaluate, analyse, synthesise and integrate complex information. <p>Very good communication skills.</p>	<p>A very well designed and constructed games application. Demonstrating many of the required features.</p> <p>The code is mostly well structured and commented. With good object orientation.</p> <p>The presentation demonstrates a very good and detailed</p>

		understanding of the development process.
C+	<p>Good overall.</p> <ul style="list-style-type: none"> • Demonstrates a good grasp of the subject matter. • Good capacity for original and creative enquiry. • Good ability to critically evaluate, analyse, synthesise and integrate complex information. • Good communication skills <p>In addition, very good in at least one of the above but overall performance deemed to be good.</p>	
C	<p>Good overall.</p> <ul style="list-style-type: none"> • Demonstrates a good grasp of the subject matter. • Good capacity for original and creative enquiry. • Good ability to critically evaluate, analyse, synthesise and integrate complex information. <p>Good communication skills</p>	<p>A well designed and constructed games application. Demonstrating many of the required features, but some lacking complexity.</p> <p>The code demonstrates some object orientation.</p> <p>The presentation provides a somewhat detailed description of the created application.</p>
D+	<p>Satisfactory overall.</p> <ul style="list-style-type: none"> • Demonstrates a satisfactory grasp of the subject matter but limited grasp in some areas • Satisfactory capacity for original and creative enquiry. • Satisfactory ability to critically evaluate, analyse, synthesise and integrate information. <p>Satisfactory communication skills</p>	
D	<p>Adequate.</p> <p>Achievement of all threshold standards but grasp of some subject areas and graduate attribute development may be more limited.</p>	<p>The games application meets the minimum requirements. Lacking many of the required features.</p> <p>Code is satisfactorily constructed with limited commenting and object orientation.</p> <p>The presentation provides a basic overview of the application.</p>
MF	<p>Marginal fail.</p> <p>Performance just below the threshold standard. A reasonable expectation that a pass is achievable by reassessment without the need to repeat the module.</p>	<p>A very simple application that fails to meet the minimum requirements. Presentation contains a poor description of the work completed.</p>
F	<p>Performance well below the threshold level. Some limited evidence of achievement of the outcomes.</p>	<p>No working application or little evidence of work. No or very limited presentation. Little or no indication of understanding of subject.</p>
NS	<p>No assessments submitted or no evidence of achievement of the outcomes.</p>	