ASSESSMENT AND INTERNAL VERIFICATION FRONT SHEET (Individual Criteria)

(Note : This version is to be used for an assignment brief issued to students via Classter)

Course Title	**Bsc. Multimedia Software Development**		**Lecturer Name & Surname**	**Gerard Said Pullicino**	
Unit Number & Title	ITMSD-506-1604 – Soft Computing for Games				
Assignment Number, Title / Type	Assignment 2				
Date Set	11/12/2020	**Deadline Date**			
Student Name		**ID Number**		**Class / Group**	

Assessment Criteria	Maximum Mark
KU 7 Identify and utilize readymade AI solutions	5
AA 1 Produce a storyboard for a game or multimedia	7
AA 2 Produce evidence supporting the choices made in the development of your game/multimedia	7
AA 3 Produce an augmented game and/or multimedia	7
AA 4 Prepare a final presentation to showcase the game or multimedia	7
AA 5 Compare codes developed autonomously with the industry standard artificial intelligence tools available.	7
SE 1 Evaluate the choices made within the storyboard in the development of the game or multimedia.	10
SE 2 Explain the soft computing and artificial intelligence techniques used.	10
SE 3 Evaluate and justify techniques used and the final outcome.	10
Total Mark:	70

Notes to Students:

- This assignment brief has been approved and released by the Internal Verifier through Classter.
- Assessment marks and feedback by the lecturer will be available online via Classter (Http://mcast.classter.com) following release by the Internal Verifier
- Students submitting their assignment on Moodle/Unicheck will be requested to confirm online the following statements:

Student's declaration prior to handing-in of assignment

- ❖ I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy

Student's declaration on assessment special arrangements

- ❖ I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit.
- ❖ I declare that I refused the special support offered by the Institute.

Contents

Soft Computing for Games Assignment 2

Overall description

You have been tasked to create a computer game called ‘Snake Chase’. This game will contain three levels and a starting scene where the player will be requested to enter their name.

- Level 1: The snake will begin a circuit that you will design at the start point and have to reach an end point on the other end of the map without hitting itself or any of the walls of the maze. Every four blocks a particle of food will be found, which will extend the snake by one unit. To win level 1, your snake will need to be at least 6 blocks long at the finish.
- Level 2: The snake will start at 6 blocks long and follow the same circuit. After 3 seconds, a random food particle behind the snake head will become an enemy snake and chase the player. If it catches up, the player dies. Enemy snake should be 4 units long and should grow if it eats food.
- Level 3: The level 3 circuit will contain at least **3** moving obstacles. The enemy snake will avoid the moving obstacles.

When the player completes all 3 levels, the total time taken to complete the game and a win screen with a gold cup will be shown.

Submission Guidelines

- You are required to use Unity 2020.1.5f for your project.
- Your project should be an offline **git** repository with at least **15** commits with **meaningful** commit descriptions explaining the code changes carried out in that specific commit.
- Your submission should be posted as a compressed **.zip** file containing the contents of the **Assets** folder as a git repository including all the commits as described above.
- All the material, sprites and assets used in your application should be available in the assets folder.
- Before submitting, test your application by copying the assets folder into a new Unity project and ensuring that it loads all the required libraries.
- Your lecturer may ask you for a quick call if the content of your submission is corrupted. You are however **strongly** encouraged to ensure that your submission works.
- If there are issues with your submission, you will be asked to provide a satisfactory explanation of your testing prior to submission.
- A note will be taken of your explanation and you may lose marks if your explanation highlights the fact that you have not taken all the reasonable steps to ensure that a correctly formatted submission has reached your lecturer.
- The name of the compressed file you submit should be in the form of [Name/Surname/Group] – example [Gerard_Said_MSD_6.2A]
- Credit will be given for neatness and correctly organized work.

Task 1

KU 7 Identify and utilize readymade AI solutions (5 marks)

The game you developed should successfully implement the enemy snakes (5 marks)

Task 2

AA 1 Produce a storyboard for a game or multimedia (7 marks)

The game you developed should implement the sequence of screens for the different levels and end game correctly according to the plan outlined above. Variables and information should be passed correctly between the different scenes and the game should maintain all information between scenes correctly as well as maintain the correct sequence of events (7 marks)

Task 3

AA 2 Produce evidence supporting the choices made in the development of your game/multimedia (7 marks)

AI elements should deal with moving obstacles correctly and generate different paths based on the location of the obstacles with minimal slowdown during the game (7 marks)

Task 4

AA 3 Produce an augmented game and/or multimedia (7 marks)

Your game should be functional and deployed as an executable on Windows/Mac depending on the platform you are working with. (7 marks)

Task 5

AA 4 Prepare a final presentation to showcase the game or multimedia (7 marks)

Capture a video playthrough of your game from beginning to end. The video playthrough may be uploaded to an unlisted youtube link, and you should mark the timestamps of the common changes, such as transitions between level 1 & 2 and the endgame screen. (7 marks)

Task 6

AA 5 Compare codes developed autonomously with the industry standard artificial intelligence tools available. (7 marks)

- Set your moving obstacles to follow a set of at least **3** waypoints in a looped way. (4 marks)
- Include a pdf in your assets folder with a short paragraph explaining the difference between `Vector3.distance` based code and A* pathfinding. (3 marks)

Task 7

SE 1 Evaluate the choices made within the storyboard in the development of the game or multimedia. (10 marks)

- Implement a high scores feature where each player's playthrough time is saved to a file and the top ranked players are shown in the win screen. (5 marks)
- Explain the reason why the storyboard sequence needs to be saved and implemented in this way as a separate paragraph in your PDF explanation. (5 marks)

Task 8

SE 2 Explain the soft computing and artificial intelligence techniques used. (10 marks)

Implement a seeker mode in the game which highlights the search area the AI snake is using when a specific key combination is pressed. (10 marks)

Task 9

SE 3 Evaluate and justify techniques used and the final outcome. (10 marks)

Distribute the finished game to three family members, ideally people who may not be very technical.

- Watch them play through the game and take a note of the explanation you had to give them to help them get started.
- Jot down the observations you make as notes.
- Use the notes as a source to write a 400-500 word report regarding the game developed and the experience of players as they got to grips with it.
- For each observation you make, cite the note that you are referring to as a source. (10 marks)