C++ Coursework (20%)

# **READ FIRST**

Submit the complete work or however far you have got (only one submission per pair of students). Submit the source code together with the self-assessment forms.

Coursework final submission deadline: 27th March 2019

The aim of Coursework:

The aim of the coursework is to develop and implement an object-oriented application. The implementation should be carried out in C++.

The Problem:

A Creative Game Ltd company would like to create a virtual pet game where a player is able to choose his/her own pet(s) from a range of available pets. The company requires an information system to hold and manage information on pets available for free trial and for purchase. The company also requires the system to hold and manage information on the customers (purchasers) of the virtual pet(s).

The system should be able to perform a number of operations such as: store the type of pets, the name of the pet itself, what the pet does (a description) and how does it react/interact for example asking for food or attention. This should also include pets’ mood index, energy level, hunger level, friendliness etc, the popularity of the pets (how many people have bought specific pets), work out the cost of purchasing a specific pet, and store whether the virtual pet is for free trial or for purchasing. The system also should be able to add and list pets.

The system should create an account for every customer; store their name and address and their age. It should store the number of pets each customer has used as a free trial, the number of purchased pets, and the amount to be paid if the pet is not a free trial (a customer may buy few virtual pets at once). It should also add and list customers. It is assumed that the price per pets will also be different for different types of customers. Young people under the age of 14 years get 25% discount and pensioners over 70 should get a 50% discount.

The system should provide a simple interface menu to deal with normal customers, young people and pensioners, and virtual pets.

You are asked to produce a functional working program in C++. Your implementation should include all the identified classes and their relationships, simple user interface etc. Your program should illustrate some of the major OO concepts such as inheritance, association, polymorphism etc.

**Extension work:** While a graphical user interface is not part of this coursework you can still use some games engines such as GFC – 2D or GTEC – 3D provided you have covered all the main OO concepts your code.

## Feedback (including details of how and where feedback will be provided)

## The deliverables will be given a single mark. The marker may decide to vary this for an individual on the basis of his/her contribution to the teamwork.

## Feedback is sought from the team, see the Self-Assessment Form (marking scheme). A team may choose to hand in a single sheet of paper with all signatures stating that they wish to get the same group mark.

## Verbal feedback on the group’s performance will be given at the demonstration. Written feedback and the final mark will be given via the group’s folder on canvas.

## Marking scheme

Good Fair Poor N/A

OO Code Integration (30%)

Functionality    

User Interface/Presentation    

OO Concepts (50%)

Use of classes/ constructors    

Use of inheritance    

Use of association    

Use of aggregation/Containment    

Use of polymorphism    

Others (20%)

Use of arrays    

Use of storage    

Use of functions    

Use of iteration and selection    

Header box/Comments/names    