# BIT2400

Assignment A07

## Linked lists

In T08 we created a linked list class that has an integer as its data member. Also, we implemented few methods to manipulate the linked list: display, length, delete, push, pop and peek.

## The Problem

Write a program to create a video game database. The database will include the video game's name (string), year released(int) and price(double). Your program should store the game's information in a linked list and implement the following methods:

1. Display – to output list's contents (1 point)
2. Length – returns the list's size (1 point)
3. Delete – empties the list of all nodes (1 point)
4. Push – Adds a new node (1 point)
5. Pop – Return a node's data, removing it from the list (1 point)
6. Peek – Returns a node's data without removing it from the list (1 point)
7. Sort by Name – Sorts the linked list in ascending order using insertion sort. If two games have the same name, then you sort them by release year (2 points)
   - **Example:**
   - Unsorted linked list:
     i. Super Mario 2000
     ii. Super Mario 1990
   - Sorted linked list:
     i. Super Mario 1990
     ii. Super Mario 2000
8. Search by Name – Search the linked list for a game name and return the information of that game (1 point)
   - If there are multiple games with the same name, you return the first game's information
   - **Bonus:** If multiple games with the same name are available, you return all games' information (1 point)
9. Similar to T08, in the main function, test all the above functions. You are allowed to ask user for input. (1 point)
   - **Suggestion:** you can print out a menu for the user and ask them for which function they want to use

**Other assignment Requirements:**

1. You have to use classes and functions in your solution (encapsulation).
2. This assignment and all other assignments must be completed individually.
3. There might be similar ideas available online: **if you use any code that is available online you will receive a zero.**
4. You have to divide your solution into multiple files (main.cpp, list.h, list.cpp, node.h, node.cpp).
5. The assignment **must** be solved in Visual Studio on Windows.
6. You have to submit your full project without the debug folder. **Submitting just the .cpp and .h files will result in receiving a zero.**