**Spike:** Task 9

**Title:** Game Data Structures

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**Goals / deliverables:**

The goal was to design and create an inventory system that is capable of storing, viewing, adding, and removing items.

For example: UML diagram, code, reports

* Code see https://github.com/LukeValentino138/COS30031-2023-103024456
* Spike Report
* Short Report.

**Technologies, Tools, and Resources used:**

List of information needed by someone trying to reproduce this work

* Swinburne Games Programming Lectures
* SDL version 1.2.3.4
* C++ Containers: https://en.cppreference.com/w/cpp/container
* C++ Map: https://en.cppreference.com/w/cpp/container/map
* W3School C++

**Tasks undertaken:**

List key tasks likely to help another developer

This section should resemble a tutorial – the goal is to allow another coder to reproduce your work following these steps.

Eg: (Good)

* Download and install Visual Studio
* Download and install DirectX
* Configure VS Project File to point to the DX lib folder
* Compile sample code

Not: (Bad)

* Read the source code
* I had some trouble with SDL, so I spent a couple of weeks doing other spikes
* Run code
* Write Spike Report

Tasks Undertaken:

* Create empty inventory class.
* Declare a map with a structure of <string, int> as private.
* Create addItem (to add items to the inventory). This function takes and item name and quantity and adds it to the map.
* Create printInventory (this is used for viewing the inventory). Iterate through the map, retrieving and printing each item.
* Create removeItem (to remove items from the inventory). Search the map for a specific item, if it is found, minus the quantity. If it is not found nothing should happen.

**What we found out:**

Describe the outcomes, and how they relate to the spike topic + graphs/screenshots/outputs as needed

and should move on.  
  
Using a map data structure, I was able to successfully create an inventory system with adding, removal, and viewing capabilities. The map was deemed the most appropriate data structure as outlined in the short report.