CS343 Lecture 1

Graham Cooper

January 4th, 2017

Advanced Control Flow

Things that are required in the course - docked marks.

- within a routine, basic and advanced control structurs allow virtually any control flow
- multi-exit-loop loop, why would you want to put a break in a loop? We end up with code that is duplicated - change one and forget about the other. For loop can be used to add an index easily for(;;) into for(int x = 0;; x++)
- TFW flagism is a thing - don't use flags :O
- eliminiate variables necessary with while
- use labbeled exits, which are pretty cool
- write defensive code - as you add code in the future, how can you reduce the amount of pain then, by coding smart right now?
- only use goto to perform static multi-level exit, eg. simulated labelled break and continue for the eye candy. the break and goto are dangerous except:
  - cannot loop (only forward branch) therefore only loop constructs branch back
  - cannot branch into a control structure

Dynamic Memory Allocation

- Stack allocation eliminates explicit storage management and often more efficent than heap allocation - "Use the stakc luke skywalker"
- rule of using the heap:
  - If the lifetime of the storage exceeds the block that it is declared in, then it must be declared on the heap. Otherwise USE THE STACK

- you might also want to use the heap when the amount of data you read is unknown
- when an array of objects must be initialized via the object's constructor
- when large local variables are allocated on a small stack.