COMP1511
Tutorial 3

while loops| structs | enums

What are the 4 stages of a while loop?

Evaluating the condition - first evaluate condition in brackets

Executing loop body - if condition is true, run code within the loop (inside curly braces)

Re-evaluating condition - Evaluate condition again and execute code in loop if true

Termination - once loop condition is false, skip to the end of the loop and continue from there

2D While Loops

Nesting a while loop inside another while loop gives a 2D while loop

Each time the outer while loop repeats, the inner while loop runs its entire cycle

Useful of printing out rows and columns of characters, as well as looping through a 2D grid of objects

scanf loops

What does *scanf* return?

How can we use this result to check whether a user presses `ctrl-d` to signal the end-of-file?

This lets us use *scanf* in a loop to scan in multiple values!

Enums and Structs

Enum: Custom data type that specifies a set of possible values for a variable to take (similar to having multiple #defines)

Struct: Custom data type that groups together different (usually related) variables

Coffee Shop

Take in inputs for a coffee order and stores them in a `struct` `coffee`

Calculate the cost of the coffee:

- Base cost: $4.50
- Large size: + $0.50
- Latte, cappuccino or matcha: + $0.50
- Sugar: + $0.50 per sugar

Print the total cost of the order