**Winter is coming**

Assignment 2 releasing soon

## End of this week or early next week

- Linked lists
- Dynamic memory
- Structs

**Week 8 Revision Sessions**

- Sign up here: https://www.eventbrite.com/e/23t2-week-8-revision-sessions-tickets-675799653957?aff=oddtdtcreator
- Wednesday 2pm-4pm (online)
- Thursday 12pm-2pm (Ainsworth 201 - BYOD)

## `malloc()`

- `malloc` -> Memory Allocation (allocate memory on the heap)
- Returns a pointer to the location on the heap
- We can decide how large the allocation

**Calling `malloc`**

- `ptr = (cast-type*) malloc(byte-size)`

**Example:**

```c
#include <stdio.h>

int main(void) {
    malloc(1000);
    malloc(sizeof(int));
    malloc(sizeof(char) * 50);

    return 0;
}
```

## Heap memory cheat sheet

- Allocate memory: `malloc()`
- Deallocate: `free()`
- Grow/shrink memory `realloc`
- All require `stdlib.h`

## Dynamic arrays on the heap

A common way of using malloc is to create dynamic arrays:

```
int main(void) {
    int num_elements;
    scanf("%d", num_elements);

    int *data =
malloc(num_elements *
sizeof(int));

    return 0;
}
```

## Demo

## Feedback

https://forms.office.com/r/K3PjvWebtD