**WEEK 5**

**Valgrind** ./(Program Name)

* Need to free memory or you get a memory leak

Buffer overflow –

**MEMORY**

Text – name of your program i.e. ./Mario

Initialized and Uninitialized Data - Global Variables

Stack – When you call a function, its arguments are copied onto the stack.

* Local variables (temp in functions)

Environment Variables – Global settings for program

Heap – Variables, and memory you request from O/S is stored.

Heap & Stack share memory space.

Ex. if we initialize a variable

* char c[12]; 🡪 ends up on the stack.

malloc

* must use Free to free Heap memory.

**LINKED LIST**

Typedef Struct node

{

int some\_num;

Struct node\* next;

} node;

Linked Lists

* Add:
  + Worst case: O(n)
  + Best case: O(1)
* Remove
  + Worst case: O(n)
  + Best case: O(1)