

# SOS Linked lists

Kick-off

B2 - Elementary Programming in C

B-CPE-200

# Linked lists: what are they?

- Data structure
- Cell succession
- Include a value
- Pointer to the next cell
- They are many types of linked lists



## What are they used for?

- Handle large quantities of data
- Allocate memory dynamically
- Store any types of variables



Remember about your `push_swap` project



## Example of a structure for linked lists

```
typedef struct list_s
{
    int data;
    struct list_t *next;
} list_t , node_t
```

This is a data structure to implement simply linked lists



# Graphs: what are they?

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- New kind of data structure
- Nodes and links
- Nodes can be connected to many other nodes
- Links can be oriented or not
- They are many types of graphs



# What are they used for?

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- Represent mazes (Dante's star)
- City mapping and path finding (Google Maps)
- Social networks (followers/following)



## Example of a structure for linked lists

```
typedef struct node_s {  
    int data;  
    struct node_s **links;  
    size_t link_count;  
} node_t;
```

```
typedef struct graph_s {  
    node_t **nodes;  
    size_t node_count;  
} graph_t;
```

This is a data structure to implement graphs



# Any questions

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