

Tutorial N°2

Exercise 01

Define a Node Structure:

- Declare a struct/class for a singly linked list node with an integer data field and a pointer to the next node.

```
#include <stdio.h>
#include <stdlib.h>

struct Node {
    int data;
    struct Node* next;
};
```

Exercise 02

Memory Allocation and Initialization Exercises

Create a Single Node:

- Dynamically allocate memory for a single node and initialize it with a value.

```
struct Node* createNode(int value) {
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
    newNode->data = value;
    newNode->next = NULL;
    return newNode;
}
```

Create a Linked List with Three Nodes:

- Manually link three nodes together.

```
void createThreeNodes() {  
    struct Node* head = createNode(10);  
    head->next = createNode(20);  
    head->next->next = createNode(30);  
  
    printf("Linked List: %d -> %d -> %d\n", head->data, head->next->data, head->next->next->data);  
}
```

Write a Function to Initialize a List:

- Implement a function that initializes an empty linked list.

```
struct Node* initializeList() {  
    return NULL; // Empty list  
}
```