

Two Basic Implementations of List:

- 1.
- 2.

A Linked List implementation of a List:

```

List.cpp
1  #pragma once
2
3  template <typename T>
4  class List {
5  public:
6      /* ... */
7
8
9
10
11
12
13
14
15
16
17
18
19
20 private:
21     class ListNode {
22     public:
23         const T data;
24         ListNode * next;
25         ListNode(T & data) :
26             data(data), next(nullptr) { }
27
28     };
29
30     ListNode *head_;
31     /* ... */
32 };

```

Implementing a basic List operation:



Implementing a basic List operation:

```

List.hpp
9  #include "List.h"
10
11
12
13
14  template <typename T>
15  void List<T>::insertAtFront(const T & d) {
16
17
18
19
20
21
22 }

```

Finding in a list:



```

List.hpp
57  template <typename T>
58  typename List<T>::ListNode * &
59     List<T>::_index(unsigned index) {
60
61  }
62
63
64
65

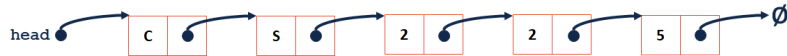
```

What is the return type of `_index`?

Building functionality with `_index()`:

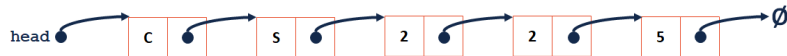
```

List.hpp
48  template <typename T>
49  T & List<T>::operator[](unsigned index) {
50
51
52
53
54  }
    
```



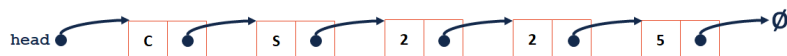
```

List.hpp
90  template <typename T>
91  void List<T>::insert(const T & t, unsigned index) {
92
93
94
95
96  }
    
```



```

List.hpp
103 template <typename T>
104 T List<T>::remove(unsigned index) {
105
106
107
108
109  }
    
```

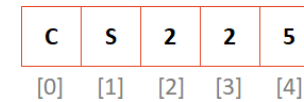


List Implementation #2: _____

```

Alternate List.h
1  #pragma once
2
3  template <typename T>
4  class List {
5  public:
6      /* ... */
28 private:
29
30
31
32 };
    
```

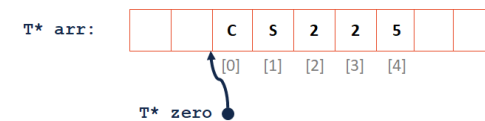
Array - Implementation Details:



1. What is the running time of `insertFront()`?



2. What is the running time of `get()`?



CS 225 – Things To Be Doing:

1. lab_inheritance broadway AG available starting tonight.
2. mp_stickers due Sep. 21 (3 days from now);
3. Daily POTDs