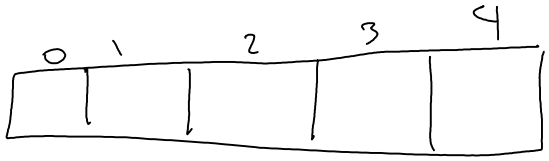
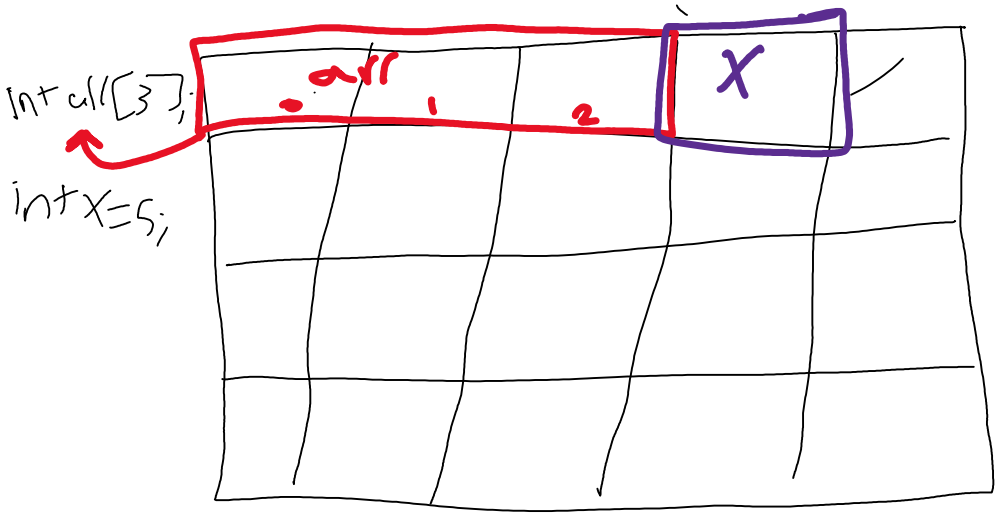
Thursday, March 3, 2022 8:24 PM



→ had a fixed size

```
int all [5];
all[0] =10;
arr[1] = 20;
   ⋮
all[4] = 90;
```

Continuous values



memory → Ram

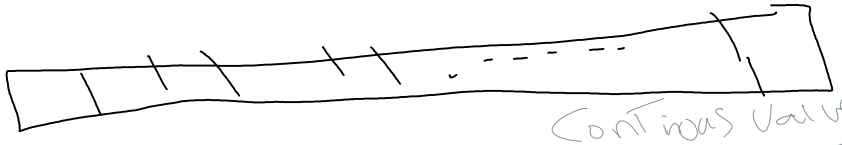
"gym locker"

Concept

Stack : LIFO → Last input First output

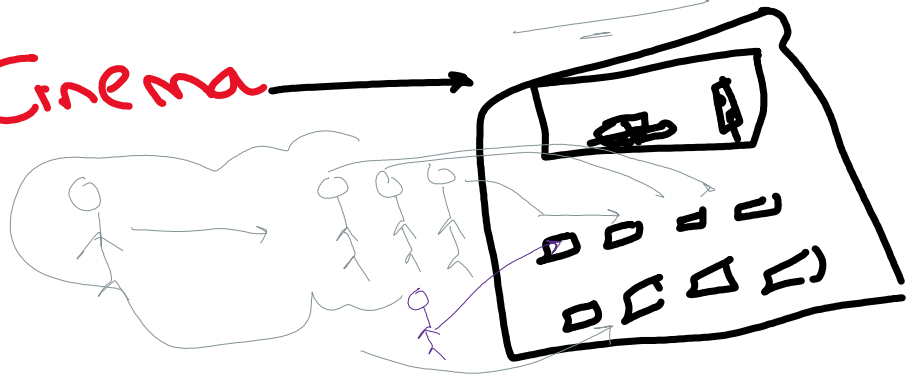
Queue : FIFO → First input first output

Dynamic Arrays "Vectors"



Continus values

Cinema

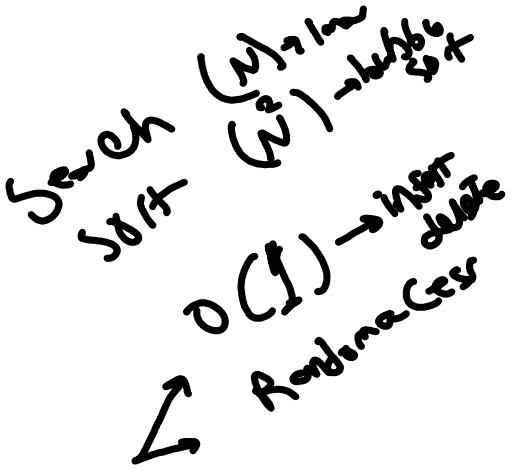


```
#include <iostream>

using namespace std;

int main()
{

    string messanger[4];
    messanger[0]="Hello";
    messanger[1]="How are you";
    messanger[2]="What about your job";
    messanger[3]="Where we will go today";


    for(int i=3;i>=0;i--){
        cout<<messanger[i]<<endl;
    }


}
```

main.cpp

```cpp
#include<array>
#include<algorithm>
using namespace std;

int main()
{

    array<int ,5>student_array;
    student_array[0]=90;
    student_array[1]=80;
    student_array[2]=70;
    student_array[3]=20;
    student_array[4]=100;



    cout<<"Array .front:"<<student_array.front()<<endl;
    cout<<"Array .back:"<<student_array.back()<<endl;

    cout<<"The first address:"<<student_array.begin()<<endl;
    cout<<"Last address:"<<student_array.end()<<endl;

    for(auto iter=student_array.begin();iter!=student_array.end();iter++){
        cout<<*iter<<endl;
    }

    for(auto elem:student_array){
        cout<<elem<<endl;
    }


    cout<<"Sorting "<<endl;

    sort(student_array.begin(),student_array.end());
    for(auto elem:student_array){
        cout<<elem<<endl;
```

```cpp
cout<<student_array.at(0)<<endl;
cout<<student_array.size()<<endl;
```




```cpp
#include <iostream>
#include<array>
#include<algorithm>
using namespace std;

int main()
{

    array<int ,5>student_array{1,2,3};
    student_array[0]=90;
    student_array[1]=80;
    student_array[2]=70;
    student_array[3]=20;
    student_array[4]=100;



    reverse(student_array.begin(),student_array.end());
    for(auto elem:student_array){
        cout<<elem<<endl;
    }

}
```

"C:\Users\THE LAPTOP SHOP\Documents\stl\bin\Debug\stl.exe"

```
100
20
70
80
90

Process returned 0 (0x0)   execution time : 0.025 s
Press any key to continue.
```

MP3 player Angam:

Vector

create album

push-back

pop back

main.cpp

```cpp
#include <iostream>
#include<array>
#include<algorithm>
#include<vector>
using namespace std;

int main()
{
    vector<int>student_vector{90,80,70,60};

    student_vector.push_back(50);
    student_vector.pop_back();
    student_vector.pop_back();

    for(auto velem:student_vector){
        cout<<velem<<endl;
    }

}
```

```
"C:\Users\THE LAPTOP SHOP\Documents\stl\bin\Debug\stl.exe"
90
80
70

Process returned 0 (0x0)   execution time : 0.058 s
Press any key to continue.
```

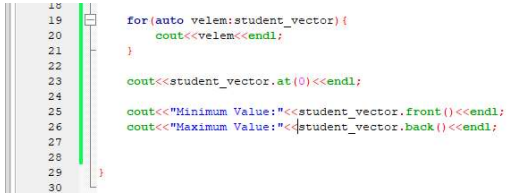
main.cpp

```cpp
#include <iostream>
#include <algorithm>
#include <vector>
using namespace std;

int main()
{
    vector<int>student_vector{90,80,70,60};

    cout<<student_vector.capacity()<<endl;

    student_vector.push_back(50);
    cout<<student_vector.capacity()<<endl;



}
```

```
"C:\Users\THE LAPTOP SHOP\Documents\stl\bin\Debug\stl.exe"
4
8

Process returned 0 (0x0)   execution time : 0.049 s
Press any key to continue.
```

main.cpp

```cpp
#include <iostream>
#include <algorithm>
#include <vector>
using namespace std;

int main()
{
    vector<int>student_vector{90,80,70,60};

    cout<<student_vector.capacity()<<endl;

    student_vector.push_back(50);
    cout<<student_vector.capacity()<<endl;



    sort(student_vector.begin(),student_vector.end());
```



```
18
19      for(auto velem:student_vector){
20          cout<<velem<<endl;
21      }
22
23      cout<<student_vector.at(0)<<endl;
24
25      cout<<"Minimum Value:"<<student_vector.front()<<endl;
26      cout<<"Maximum Value:"<<student_vector.back()<<endl;
27
28
29  }
30
```

Deque we have to additional functions
Push_front and pop_front