Handout 8

```cpp
int main()
{
    int no_students;
    cout<<"Enter the students number:"<<endl;
    cin>>no_students;
    int students_grade[no_students];

    for(int i=0;i<no_students;i++){
        cout<<"Enter the grade of student number:"<<i+1<<":"<<endl;
        cin>>students_grade[i];
    }

    for(int i=0;i<no_students;i++){
        if(students_grade[i]>=85){
            cout<<"Student number"<<i+1<<","<<" got the A."<<endl;
        }
        else if(students_grade[i]>=75){
            cout<<"Student number"<<i+1<<","<<" got the B."<<endl;
        }
        else if(students_grade[i]>=70){
            cout<<"Student number"<<i+1<<","<<" got the C."<<endl;
        }
        else if(students_grade[i]>=60){
            cout<<"Student number"<<i+1<<","<<" got the D."<<endl;
        }
        else {
            cout<<"Student number"<<i+1<<","<<" got the F."<<endl;
        }
    }
}
```

```
"C:\Users\THE LAPTOP SHOP\Desktop\Intro To Software Engineering\Source Cod
Enter the students number:
4
Enter the grade of student number:1:
90
Enter the grade of student number:2:
20
Enter the grade of student number:3:
30
Enter the grade of student number:4:
75
Student number1, got the A.
Student number2, got the F.
Student number3, got the F.
Student number4, got the B.

Process returned 0 (0x0)   execution time : 11.715 s
Press any key to continue.
```
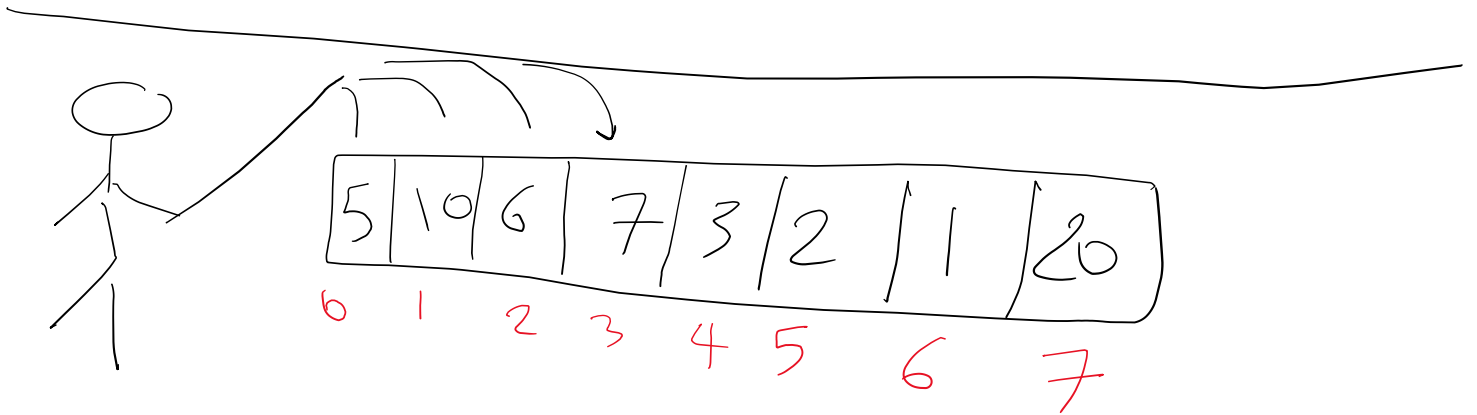

$$Total = Total + itemPrice[i];$$

```cpp
int main()
{
    int total_price=0;
    int no_items;

    cout<<"Enter the number of items:"<<endl;
    cin>>no_items;
    int itemprice[no_items];
    for(int i=0;i<no_items;i++){
        cout<<"Enter the item price number"<<(i+1)<<":"<<endl;
        cin>>itemprice[i];

    }
    for(int i=0;i<no_items;i++){
        total_price=total_price+itemprice[i];
    }
    cout<<"Total price is equall:"<<total_price<<endl;
```

```cpp
1    #include <iostream>
2
3    using namespace std;
4
5    int main()
6    {
7        float total_score=0;
8        int no_grades;
9        cout<<"Enter the grades number:"<<endl;
10       cin>>no_grades;
11       int subject_grade[no_grades];
12
13       for(int i=0;i<no_grades;i++){
14           cout<<"Enter the subject grade:"<<i+1<<":"<<endl;
15           cin>>subject_grade[i];
16           total_score=total_score+subject_grade[i];
17
18       }
19       cout<<"Total Score"<<total_score<<endl;
20       cout<<"You achieved "<<((total_score/(no_grades*100))*100)<<"%"<<endl;
21
22
23
24
25   }
26
```

```
       0    1    2    3    4    5
     | 5 |  6 |  7 |  8 |  9 | 10 |
```

For (int i=0; i<6; i++)
{
    cin >> item_Price[i];
}

```
1      #include <iostream>
2
3      using namespace std;
4
5      int main()
6      {
7          int maximum=0;
8          int no_items;
9          cout<<"Enter the items"<<endl;
10         cin>>no_items;
11         int items_price[no_items];
12         for(int i=0;i<no_items;i++){
13             cout<<"Enter the item price no"<<(i+1)<<endl;
14             cin>>items_price[i];
15         }
16         for(int i=0;i<no_items;i++){
17             if(items_price[i]>maximum){
18                 maximum=items_price[i];
19             }
20         }
21
22         cout<<"The maximum number will be:"<<maximum<<endl;
23
```

Array → 1D

int arr[] = {1, 2, 3};

1 Row   3 Columns

---

int arr2[] =
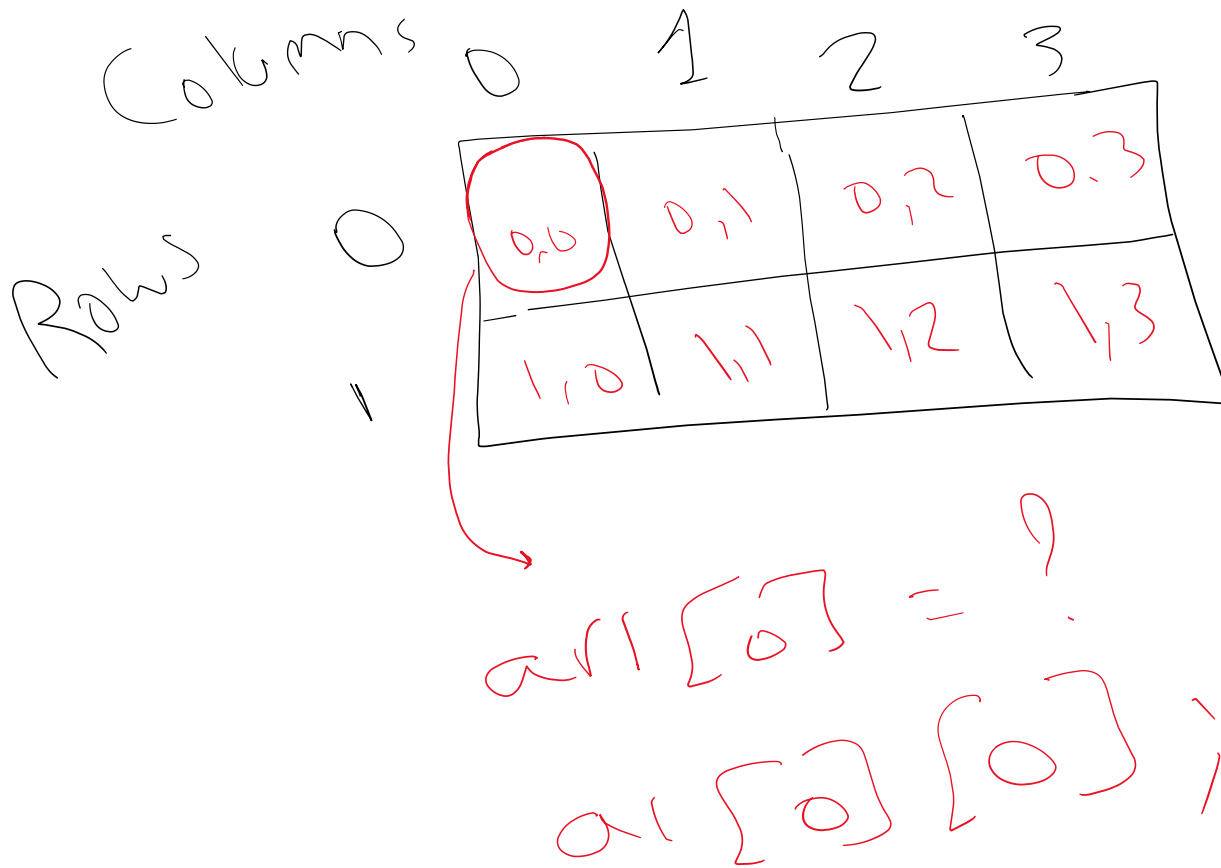{ {3, 1, 2}, {4, 5, 6}, {1, 7, 9} }

$$\begin{bmatrix} 3 & 1 & 2 \\ 4 & 5 & 6 \\ 1 & 7 & 9 \end{bmatrix}$$

2D array

3X3

Row   3 Columns

Columns 0 1 2 3

Rows

0

| 0,0 | 0,1 | 0,2 | 0,3 |
| 1,0 | 1,1 | 1,2 | 1,3 |

1

arr[0] = ?

arr[0][0];

```cpp
main.cpp  ×
1    #include <iostream>
2
3    using namespace std;
4
5    int main()
6    {
7      int array1[]={1,2,3};
8      int matrix1[3][3]={{1,2,3},{4,5,6},{7,9,1}};
9
10     cout<<"The first value in array is"<<array1[0]<<endl;
11     cout<<"The first value in matrix is"<<matrix1[0][0]<<endl;
12
13
14
15
```

```cpp
    int columns;
    int rows;
    cout<<"Enter the number of columns"<<endl;
    cin>>columns;
    cout<<"Enter the number of rows"<<endl;
    cin>>rows;

    int matrix[rows][columns];
    for(int i=0;i<rows;i++){
        for(int j=0;j<columns;j++){
            cout<<"Enter the element number("<<i<<","<<j
            cin>>matrix[i][j];
        }
    }
    for(int i=0;i<rows;i++){
        for(int j=0;j<columns;j++){
            cout<<matrix[i][j]<<",";
        }
        cout<<endl;
    }
```

```
"C:\Users\THE LAPTOP SHOP\Desktop\Intro To Software Engineering\Sou
Enter the number of columns
2
Enter the number of rows
2
Enter the element number(0,0)
10
Enter the element number(0,1)
20
Enter the element number(1,0)
30
Enter the element number(1,1)
40
10,20,
30,40,
```