

Dsa-Lab-Task : 2

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Dept: BS-CS

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Section : 3D

Qns1:

```
#include<iostream>
```

```
using namespace std;
```

```
class Repeated
```

```
{
```

```
private:
```

```
int s;
```

```
int *arr,value,prev_val=0,count=0;
```

```
public:
```

```
void rep_array()
```

```
{
```

```
cout <<"Enter The size of array :"<<endl;
```

```
cin>>s;
```

```
arr=new int[s];
```

```
for(int i=0;i<s;i++)
```

```
{
```

```
cin>>*(arr+i);
```

```
}
```

```
for(int i=0;i<s;i++)
```

```
{
```

```
cout <<*(arr+i)<<" ,";
```

```
}
```

```
for(int i=0;i<s;i++)
```

```
{
```

```
int prev_count=0;
```

```
for(int j=0;j<s;j++)
```

```
{
```

```
if(*(arr+i)==*(arr+j))
```

```
{
```

```
prev_count++;
```

```
}
```

```
}
```

```
if(count<=prev_count)
```

```
{  
value=*(arr+i);  
if(value>=prev_val){  
prev_val=value;  
}  
  
count=prev_count;  
}  
}  
  
cout<<"\nThe Most Repeated Value is "<<prev_val<<" and it appears "<<count <<" Times  
<<endl;  
  
}  
  
~Repeated()  
{  
delete[] arr;  
arr=nullptr;  
}  
  
};
```

```
int main()
{
    Repeated r;
    r.rep_array();
}
```

Qns 2:

```
#include<iostream>

using namespace std;

class dup_remove{
private:
    int *aa,siz=0,uni_c;

public:
    dup_remove(int s):siz(s),uni_c(0)
    {
        aa = new int[siz];

        cout<<"Enter The Values :"<<endl;

        for(int i=0;i<siz;i++)
        {
            cin>>*(aa+i);
        }
    }
}
```

```
for(int i=0;i<siz;i++)
{
    cout<<*(aa+i)<<" ";
}
cout<<endl;
for(int i=0;i<siz;i++)
{
    for(int j=i+1;j<siz;j++)
    {
        if(*(aa+i)==*(aa+j))
        {
            *(aa+j)=-1;
        }
    }
}
for(int i=0;i<siz;i++)
{
    if(*(aa+i)!=-1)
    {
        uni_c++;
    }
}
```

```
cout<<endl;
```

```
}
```

```
void unique()
```

```
{
```

```
int *a=new int[uni_c];
```

```
int j=0;
```

```
for (int i=0;i<siz;i++)
```

```
{
```

```
if(*(aa+i)!=-1)
```

```
{
```

```
*(a+j)=*(aa+i);
```

```
j++;
```

```
}
```

```
}
```

```
for (int i=0;i<uni_c;i++)
```

```
{
```

```
cout <<*(a+i)<<" ,";
```

```
}
```

```
delete[] aa;
```

```
aa=a;
```

```
}
```

```
~dup_remove()
```

```
{
```

```
delete[] aa;
```

```
aa=nullptr;
```

```
}
```

```
};
```

```
int main()
```

```
{
```

```
int size;
```

```
cout <<"Enter The size of array :"<<endl;
```

```
cin>>size;
```

```
dup_remove d(size);
```

```
d.unique();
```

```
}
```

Qns 3:

```
#include<iostream>

using namespace std;

class matrix_diag
{
private:
    int siz=3,**a=new int*[siz],add_main_d=0,sec_diagonal=0;

public:
    matrix_diag(){
        for(int i=0;i<siz;i++){
            *(a+i)=new int[siz];
        }
    }

    void input_matrices(){
        cout <<"Enter values in Matrix:"<<endl;
        for(int i=0;i<siz;i++){
            for(int j=0;j<siz;j++){
                cin>>*(*(a+i)+j);
            }
        }
    }
}
```



```
}
```

```
for(int i=0;i<siz;i++){
```

```
for(int j=0;j<siz;j++){
```

```
{
```

```
cout <<*(*(a+i)+j)<<" ,";
```

```
}
```

```
}
```

```
}
```

```
void sum_of_diagonals(){
```

```
for(int i=0;i<siz;i++){
```

```
{
```

```
add_main_d+=*(*(a+i)+i);
```

```
}
```

```
for(int i=0;i<siz;i++){
```

```
{
```

```
sec_diagonal+=*(*(a+i)+siz-(i+1));
```

```
}
```

```
cout <<"\n\nThe Main diagonal sum is : "<<add_main_d<<" \n\nThe secondae diagonal sum is:"<<sec_diagonal<<endl;
```

```
}
```

```
~matrix_diag(){  
    for(int i=0;i<sz;i++)  
    {  
        delete[] *(a+i);  
    }  
    delete[] a;  
}  
};  
  
int main()  
{  
    matrix_diag m;  
    m.input_matrices();  
    m.sum_of_diagonals();  
}
```