

Exercise1:

```
/* program that reads 10 integers and prints them in reverse order */
```

```
#include<iostream>

using namespace std;

int main()
{
    int number [10], i;

    cout<<"Program that reads 10 integers and prints them in reverse order\n";
    for (i=0; i<=9; i++)
    {
        cout<<"Enter the "<<i+1<<" integer number x["<<i<<"]=" ";
        cin >> number[i];
        cout<<endl;
    }

    cout<<"The inverse order of them is :\n";
    for (i=9; i>=0; i--)
    {
        cout << "Y["<<9-i<<"]="<<number[i]<<endl;
    }

    return(0);
}
```

Exercise2:

```
/* Program that calculates the price of four items */
```

```
#include<iostream>
```

```

using namespace std;

int main()
{
int i, quantity;

float total=0, price[4]={5, 3.5, 2.50, 7.75};

cout<<"Program that calculates the price of four items :"<<endl;

for (i=0; i<=3; i++)
{
cout << "Enter the quantity of item " << i+1 << " :";
cin >> quantity; /*read quantity of item i */
total+=quantity*price[i];
cout<<endl;
}

cout << "The total cost is "<<total <<endl;

return 0;
}

```

Exercise3:

```

#include <iostream>

using namespace std;

int main()
{
int i, score[4];

cout<< "Enter 4 scores:\n";

for (i=0; i<4; i++)

```

```

{
cin >> score[i];
if (score[i] >= 60)
cout << "Student in position " << i+1 <<" passed\n";
else
cout << "Student in position " << i+1 <<" failed\n";
}
return 0;
}

```

Exercise4:

```

#include <iostream>
using namespace std;
int main()
{
int i,T, my_list[4], max=0, min=100;
cout<< "Enter 5 positives integers numbers between 0 and 100:\n";
for (i=0; i<5; i++)
{
cout<<"Enter the " <<i+1<< " integer number:";
cin>>my_list[i];
T=my_list[i];
{
if (T>=max)
max=T;}
if (T <= min)

```

```
min=T;
}
cout<< "The largest number entered is: " <<max<<endl;
cout<<"The smallest number entered is : " <<min<<endl;
return 0;
}
```

Exercise5:

*/*Program that you put an index in the i th position of an array*/*

```
#include<iostream>
using namespace std;
const int N=10;
int main()
{
int t[N],i,index,V;

for(i=0;i<N;i++)
{
cout<<"Enter an integer number t["<<i<<"]=";
cin>>t[i];
}

cout<<"Enter an index (between 0 and 9) : ";
cin>>index;

cout<<"Enter the value of your index V= ";
cin>>V;

if(index>=0 && index <=N-1)
```

```
{  
    for(i=N-1;i>index;i--)  
        t[i]=t[i-1];  
    t[index]=V;  
}
```

```
for(i=0;i<N;i++)  
    cout<<"t["<<i<<"]="<<t[i]<<endl;
```

```
return 0;  
}
```

Exercise6:

```
#include<iostream>  
  
using namespace std;  
  
int give_bonus(int old_score);  
  
main()  
{  
    int score[4], number;  
    cout << "Enter 4 scores: \n";  
    for (number = 0; number < 4; number++)  
        cin>> score[number];  
    for (number = 0; number < 4; number++)  
        score[number] = give_bonus(score[number]);  
    cout<< "New Scores: \n";  
    for (number = 0; number < 4; number++)
```

```
cout<< score[number]<< endl;
```

```
return 0;
```

```
}
```

```
int give_bonus(int old_score)
```

```
{
```

```
return (old_score+5);
```

```
}
```

Exercise7:

```
/* This program sorts numbers from lowest to highest of 10 entries using array*/
```

```
#include<iostream>
```

```
using namespace std;
```

```
const int N=10;
```

```
int main()
```

```
{
```

```
int a[N],i,nb,tmp;
```

```
for(i=0;i<N;i++)
```

```
{
```

```
cout<<"Enter an integer in the position "<<i<<" : ";
```

```
cin>>a[i];
```

```
}
```

```
do
```

```
{
```

```
nb=0;
```

```
for(i=0;i<N-1;i++)
```

```
if(a[i]>a[i+1])
```

```

        {
            tmp=a[i];

            a[i]=a[i+1];

            a[i+1]=tmp;

            nb++;
        }
    }

while(nb!=0);

cout<<"the ordering array is :"<<endl;

for(i=0;i<N;i++)

cout<<"a["<<i<<"]="<<a[i]<<endl;

return 0;

}

```

Exercise8:

*/*Program that give the average and the number of students have a grade more than the average of 10 students*/*

```

#include <iostream>

using namespace std ;

int main()

{

    int i, nbm ;

    float average, sum ;

    float t[10] ;

    for (i=0 ; i<10 ; i++)

    {

        cout << "Please the grade of student number " << i+1 << " : " ;
    }
}

```

```

cin >> t[i] ;
}
for (i=0, sum=0 ; i<10 ; i++)
sum += t[i] ;
average = sum / 10 ;
cout << "\ The average of the class is : " << average << "\n" ;
for (i=0, nbm=0 ; i<10 ; i++ )
if (t[i] > average)
nbm++ ;
cout << nbm << " students have a grade more than the average" ;
return 0;
}

```

Exercise9:

*/*Program that search an entry number between 0 to 10 for n entries*/*

```

#include<iostream>
using namespace std;
void enter(int t[],int n) /* function to enter n entries */
{
int i; for(i=0;i<n;i++)
{
cout<<"Please, enter the value of the position "<<i<<" : ";
cin>> t[i];
}
}

```



```

bool f(int t[], int n, int &v) /*function to check if there exists an entry between 0 to 10*/
{
bool found=false;
int i=0;
while(!found && i<n)
if(t[i]>=0 && t[i]<=10)
{
found=true;
v=t[i];
}
else i++;
return found;
}

int main()
{
int m;
cout<<"How many entries ? n=";
cin>>m;
int a[m];
bool b;
int w;
enter(a,m);
b=f(a,m,w);
if (b)
cout<<"\nThere exists a value between 0 and 10 : "<<w<<" is the first of these values."<<endl;
}

```

```
else  
  
cout<<"There does not exist between 0 and 10"<<endl;  
  
return 0;  
  
}
```

Exercise10:

*/*Program that to print an entries numbers between 0 to 10 for n entries*/*

```
#include<iostream>  
  
using namespace std;  
  
void input(int t[],int n) /* function to input n entries*/  
{  
    int i;  
    for(i=0;i<n;i++)  
        {  
            cout<<"Enter the value number "<<i<<" : ";  
            cin>> t[i];  
        }  
}  
  
void print(int t[],int n) /* function to print*/  
{  
    int i;  
    for(i=0;i<n;i++)  
        cout<<t[i]<<" ";  
    cout<<endl;  
}  
  
int f(int t1[], int n,int t2[]) /* function to search entries number between 0 to 10*/
```

```

{
int i=0,nb=0;

for(i=0;i<n;i++)
if(t1[i]>=0 && t1[i]<=10)
{t2[nb]=t1[i];
nb++;}

return nb;

}

int main()
{
int m;

cout<<"How many entries ? n=";

cin>>m;

int a[m],b[m];

int nb;

input(a,m);

nb=f(a,m,b);

cout<<"This is the values between 0 and 10 : "<<endl;

print(b,nb);

return 0;

}

```

Exercise11:

/ Program input: Enter the coefficients of a squared matrix of size 4 and output give the sum of its coefficients*/*

```

#include<iostream>

using namespace std;

```

```

int main()
{
int a[4][4],i,j,s=0;

cout<<"Enter the elements of the matrix"<<endl;

for(i=0; i<4; i++)
for(j=0; j<4; j++)

cin>>a[i][j];

cout<<"The sum of the elements of the matrix=";

for(i=0; i<4; i++)
for(j=0; j<4; j++)

s=s+a[i][j];

cout<<s;

return 0;

}

```

Exercise12:

/ program addition of two squared matrices of size 3 */*

```

#include<iostream>

#include<conio.h>

using namespace std;

int main()

{

int x[3][3],y[3][3],z[3][3],i,j;

cout<<"Enter the coefficient of your first matrix :"<<endl;

{

for (i=0;i<3;i++)

```

```
for(j=0;j<3;j++)
cin>>x[i][j];
}
cout<<"Enter the coefficient of your second matrix :"<<endl;
{
for (i=0;i<3;i++)
for(j=0;j<3;j++)
cin>>y[i][j];
}
cout<<"Matrix [X]=";
cout<<"(";
for(i=0;i<3;i++)
{
cout<<"\n\n";
for(j=0;j<3;j++)
cout<<x[i][j]<<"\t";
}
cout<<")"<<endl;
cout<<"\nMatrix [Y]=";
for(i=0;i<3;i++)
{
cout<<"\n\n";
for(j=0;j<3;j++)
cout<<y[i][j]<<"\t";
}
}
```

```

for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
z[i][j]=x[i][j]+y[i][j];
}

cout<<"\n Their sum is the matrix [Z]=";

for(i=0;i<3;i++)
{
cout<<"\n\n";
for(j=0;j<3;j++)
cout<<z[i][j]<<"\t";
}

return 0;
}

```

Exercise13:

```

#include<iostream>

using namespace std;

class student
{
private:
int id;

char name[20];

char grade;

public:

student();      /*student(int the_id);*/

```

```
int get_id();

void get_name();

void get_grade();

void output();

};

student::student()

{

    id=0;

}

int student::get_id()

{

    cout<<"Enter the Id of student:";

    cin>>id;

    return id;

}

void student::get_name()

{

    cout<<"Enter the name of student:";

    cin>>name;

}

void student::get_grade()
```

```
{  
  
    cout<<"Enter the grade of the student:";  
  
    cin>>grade;  
  
    }  
  
void student::output()  
  
    {  
  
    cout << "Student details:\n";  
  
    cout << "Id Number:"<< id << " , name of student:" << name << " , grade:" << grade;  
  
    }  
  
int main()  
  
{  
  
    student stud;  
  
    int a;  
  
    a=stud.get_id();  
  
    stud.get_name();  
  
    stud.get_grade();  
  
    cout<<endl;  
  
    stud.output();  
  
    return 0;  
  
}
```