

Exercise No: 2

Date:

1. Write a C++ program to find maximum from an array of integers

```
#include<iostream>
using namespace std;
```

```
int main()
{
    int arr[5];
    cout<<"Enter elements in array: "<<endl;
    for(int i=0; i<5; i++){
        cin>>arr[i];
    }
    int max= arr[0],pos=0;
    for(int i=1; i<5; i++){
        if(arr[i]>max){
            max=arr[i];
            pos=i;
        }
    }
    cout<<"Maximum number in the array is:
"<<max<<" at position "<<pos+1<<endl;
}
```

```
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter elements in array:
1
3
4
5
2
Maximum number in the array is: 5 at position 4
```

2. Write a C++ program to check if a number is a palindrome number or no

```
#include<iostream>
using namespace std;
```

```
int main()
{
    int num, rev=0;
    cout<<"Enter a number: "; cin>>num;

    int copy = num;
    while(copy>0)
    {
        rev = rev * 10 + copy % 10;
        copy /= 10;
    }
    if(rev==num) cout<<num<<" is a
palindrome"<<endl;
    else cout<<num<<" is not a
palindrome"<<endl;
    return 0;
}
```

```
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> g++ expt2.cpp
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter a number: 1456
1456 is not a palindrome
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter a number: 12321
12321 is a palindrome
```

3. Write a C++ program to print a Fibonacci triangle

```
1
1 1
1 1 2
1 1 2 3
1 1 2 3 5 and so on
```

```
#include<iostream>
using namespace std;
```

```
void fib(int n)
{
    int a=0,b=1,temp;
    cout<<a<<" ";
    for(int i=1; i<n; i++){
        cout<<b<<" ";
        temp = b;
        b += a;
        a = temp;
    }
}

int main()
{
    int n,a=0,b=1;
    cout<<"Enter the number of terms for
fibonaci series: "; cin>>n;
    for(int i=1; i<=n; i++){
        fib(i);
        cout<<endl;
    }
}
```

```
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> g++ expt3.cpp
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter the number of terms for fibonaci series: 10
0
0 1
0 1 1
0 1 1 2
0 1 1 2 3
0 1 1 2 3 5
0 1 1 2 3 5 8
0 1 1 2 3 5 8 13
0 1 1 2 3 5 8 13 21
0 1 1 2 3 5 8 13 21 34
```

4. Write a C++ program to find first and last digit of any number

```
#include<iostream>
using namespace std;

int main()
```

```

{
    int num, first, last, temp;
    cout<<"Enter a number: "; cin>>num;
    temp = num;
    last = num % 10;
    while(temp>0){
        first = temp % 10;
        temp /= 10;
    }
    cout<<"\nNumber: "<<num<<"\nFirst
digit : "<<first<<"\nlast digit :
"<<last<<endl;
}

```

```

PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> g++ expt4.cpp
PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter a number: 1254378

Number: 1254378
First digit : 1
last digit : 8

```

5. Write C++ Program to interchange diagonals of a matrix

```

#include<iostream>
using namespace std;

```

```

int main()
{
    int n, tmp;
    cout<<"Enter size of rows of a squire matrix: ";
    cin>>n;
    int **array = new int* [n];
    for(int i = 0; i < n; i++)
        array[i] = new int [n];

    cout<<"Enter Elements of array"<<endl;
    for(int i = 0; i < n; i++){
        for(int j = 0; j < n; j++){
            cin>>array[i][j];

```

```

        }
    }
    cout<<"Mtrix:"<<endl;
    for(int i = 0; i < n; i++){
        for(int j = 0; j < n; j++){
            cout<<array[i][j]<<" ";
        }
        cout<<endl;
    }
    for(int i = 0, j = n-1 ; i < n && j >= 0; i++, j--){
        tmp = array[i][i];
        array[i][i] = array[i][j];
        array[i][j] = tmp;
    }
    cout<<"After Interchanging of diagonals "<<endl;
    for(int i = 0; i < n; i++){
        for(int j = 0; j < n; j++){
            cout<<array[i][j]<<" ";
        }
        cout<<endl;
    }
    return 0;
}

```

```

PS C:\Users\Asus-PC\Desktop\collage\opps\exersise 2> ./a.exe
Enter size of rows of a squire matrix: 3
Enter Elements of array
1 2 3
4 5 6
7 8 9
Mtrix:
1 2 3
4 5 6
7 8 9
After Interchanging of diagonals
3 2 1
4 5 6
9 8 7

```

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