**LAB 13**

**Lab Task. 13.1) Write a program to add two arrays.**

**#include <iostream>**

**using namespace std;**

**int main ()**

**{**

**int arr1[] = { 1,2,3,4,5,6,7 };**

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

**int n , result1,result2,result;**

**for ( n=0 ; n<7 ; n++ )**

**{**

**result1 += arr1[n];**

**}**

**for ( n=0 ; n<=6 ; ++n )**

**{**

**result2 += arr2[n];**

**}**

**result = result1+result2;**

**cout<< result <<endl;**

**return 0;**

**}**

**Lab Task. 13.2) Write a program that input the marks of five students in an array and find the average**

**#include <iostream>**

**using namespace std;**

**int main()**

**{**

**int i;**

**float num[100], sum=0, average;**

**for(i = 0; i < 5; ++i)**

**{**

**cout << "Enter marks of student " << i + 1 << ":" ;**

**cin >> num[i];**

**sum += num[i];**

**}**

**average = sum / 5;**

**cout << "Average = " << average;**

**return 0;**

**}**

**Lab Task. 13.3) Write a program that creates an array of 8 numbers and perform the following:**

**a. Input a number from user and search in array if it is present or not.**

**b. Find the highest number present in array.**

**c. Find the lowest number present in array.**

**# include <iostream>**

**using namespace std;**

**1int main()**

**{**

**int a[8],inp;**

**char opt;**

**cout << "enter array elements" << endl;**

**for (int i=0; i<=7; i++)**

**{**

**cin >> a[i];**

**}**

**cout << "NUMBERS ENTERED......." << endl;**

**cout << "Which task do you want to perform :" << endl;**

**cout << "a : Find number in array....." << endl;**

**cout << "b : Find the highest number present in array....." << endl;**

**cout << "c : Find the lowest number present in array....." << endl;**

**cin >> opt;**

**switch(opt)**

**{**

**case 'a':**

**cout << "Enter any number :" << endl;**

**cin >> inp;**

**if(inp == a[0] || inp == a[1] || inp == a[2] || inp == a[3] || inp == a[4] || inp == a[5] || inp == a[6] || inp == a[7] )**

**{**

**cout << "Number is present in array" << endl;**

**}**

**else**

**{**

**cout << "Number doesn't present in array" << endl;**

**}**

**break;**

**case 'b':**

**for(int i =0; i <=7 ; i++)**

**{**

**if(a[0] < a[i])**

**{**

**a[0] = a[i];**

**}**

**}**

**cout << "Highest number is" << a[0] << endl;**

**break;**

**case 'c':**

**for(int i =0; i <=7 ; i++)**

**{**

**if(a[0] > a[i])**

**{**

**a[0] = a[i];**

**}**

**}**

**cout << "Lowest number is" << a[0] << endl;**

**break;**

**}**

**}**

**Lab Task. 13.4) Using two-dimensional arrays, write a program which sums two (2x2) matrices of integers**

**#include <iostream>**

**using namespace std;**

**int main()**

**{**

**int r, c, a[100][100], b[100][100], sum[100][100], i, j;**

**cout << "Enter number of rows (between 1 and 100): ";**

**cin >> r;**

**cout << "Enter number of columns (between 1 and 100): ";**

**cin >> c;**

**cout << endl << "Enter elements of 1st matrix: " << endl;**

**// Storing elements of first matrix entered by user.**

**for(i = 0; i < r; ++i)**

**for(j = 0; j < c; ++j)**

**{**

**cout << "Enter element a" << i + 1 << j + 1 << " : ";**

**cin >> a[i][j];**

**}**

**// Storing elements of second matrix entered by user.**

**cout << endl << "Enter elements of 2nd matrix: " << endl;**

**for(i = 0; i < r; ++i)**

**for(j = 0; j < c; ++j)**

**{**

**cout << "Enter element b" << i + 1 << j + 1 << " : ";**

**cin >> b[i][j];**

**}**

**// Adding Two matrices**

**for(i = 0; i < r; ++i)**

**for(j = 0; j < c; ++j)**

**sum[i][j] = a[i][j] + b[i][j];**

**// Displaying the resultant sum matrix.**

**cout << endl << "Sum of two matrix is: " << endl;**

**for(i = 0; i < r; ++i)**

**for(j = 0; j < c; ++j)**

**{**

**cout << sum[i][j] << " ";**

**if(j == c - 1)**

**cout << endl;**

**}**

**return 0;**

**}**

**Lab Task. 13.5) Write a program to print the given numbers in ascending order using arrays.**

**#include <iostream>**

**using namespace std;**

**#define MAX 100**

**int main()**

**{**

**//array declaration**

**int arr[MAX];**

**int n,i,j;**

**int temp;**

**//read total number of elements to read**

**cout<<"Enter total number of elements to read: ";**

**cin>>n;**

**//check bound**

**if(n<0 || n>MAX)**

**{**

**cout<<"Input valid range!!!"<<endl;**

**return -1;**

**}**

**//read n elements**

**for(i=0;i<n;i++)**

**{**

**cout<<"Enter element ["<<i+1<<"] ";**

**cin>>arr[i];**

**}**

**//print input elements**

**cout<<"Unsorted Array elements:"<<endl;**

**for(i=0;i<n;i++)**

**cout<<arr[i]<<"\t";**

**cout<<endl;**

**//sorting - ASCENDING ORDER**

**for(i=0;i<n;i++)**

**{**

**for(j=i+1;j<n;j++)**

**{**

**if(arr[i]>arr[j])**

**{**

**temp =arr[i];**

**arr[i]=arr[j];**

**arr[j]=temp;**

**}**

**}**

**}**

**//print sorted array elements**

**cout<<"Sorted (Ascending Order) Array elements:"<<endl;**

**for(i=0;i<n;i++)**

**cout<<arr[i]<<"\t";**

**cout<<endl;**

**return 0;**

**}**