**A Practical Activity Report For**

**Data Structures and Algorithms (UCS406)**

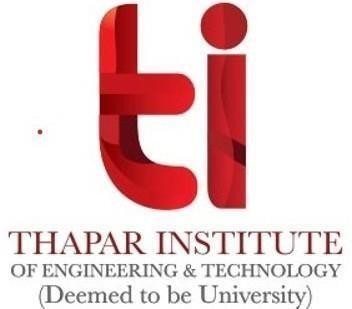
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**ASSIGNMENT 1**

**QUESTION 1(a):-**

#include<iostream>

using namespace std;

int main()

{

int N;

cout<<"Enter the size of array whose sum is to be found";

cin>>N;

int arr[N];

int i;

cout<<"Enter the elements of array";

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

{

cin>>arr[i];

}

int sum=0;

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

{

sum=sum+arr[i];

}

cout<<endl<<"Sum of entered elements is "<<sum;

return 0;

}

**QUESTION 1(b):**

#include<iostream>

using namespace std;

int main()

{

int N;

cout<<"Enter the size of array whose maximum of entered elememnts is to be found";

cin>>N;

int arr[N];

int i;

cout<<"Enter the elements of array";

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

{

cin>>arr[i];

}

int max=0;

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

{

if(arr[i]>max)

{

max=arr[i];

}

}

cout<<endl<<"Max of entered elements is "<<max;

return 0;

}

**QUESTION 1(c):**

#include<iostream>

using namespace std;

int main()

{

int N,i,count=0;

cout<<"Enter the size of array";

cin>>N;

int arr[N];

cout<<"Enter elements in array";

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

{

cin>>arr[i];

}

cout<<"Enter the element you want to search";

int wanted;

cin>>wanted;

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

{

if(wanted==arr[i])

{

count++;

cout<<"Found at"<<i<"location";

}

}

if(count==0)

{

cout<<"Element not found";

}

return 0;

**}**

**QUESTION 2:**

#include<iostream>

using namespace std;

int main()

{

int r1,c1,r2,c2;

cin>>r1;

cin>>c1;

int arr1[r1][c1];

for(int i=0; i<r1; i++)

{

for(int j=0; j<c1; j++)

{

cin>>arr1[i][j];

}

}

cin>>r2;

cin>>c2;

int arr2[r2][c2];

for(int i=0; i<r2; i++)

{

for(int j=0; j<c2; j++)

{

cin>>arr2[i][j];

}

}

int sumarr[r1][c1]= {0};

for(int i=0; i<r1; i++) //adding two matrices

{

for(int j=0; j<c1; j++)

{

sumarr[i][j]=arr1[i][j]+arr2[i][j];

}

}

cout<<endl;

for(int i=0; i<r1; i++)

{

for(int j=0; j<c1; j++)

{

cout<<sumarr[i][j]<<" ";

}

cout<<endl;

}

int subarr[r1][c1]= {0};

for(int i=0; i<r1; i++) //subtracting two matrices

{

for(int j=0; j<c1; j++)

{

subarr[i][j]=arr1[i][j]-arr2[i][j];

}

}

cout<<endl;

for(int i=0; i<r1; i++)

{

for(int j=0; j<c1; j++)

{

cout<<subarr[i][j]<<" ";

}

cout<<endl;

}

cout<<endl;

return 0;

}

**QUESTION 3:**

#include<iostream>

using namespace std;

int main()

4{

int r=3; int c=3;

int mat1[r][c],mat2[r][c];

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

{

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

{

cin>>mat1[i][j];

}

}

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

{

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

{

cin>>mat2[i][j];

}

}

int mat3[r][c]= {0};

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

{

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

{

for(int k=0;k<r;k++)

{

mat3[i][j]=mat1[i][k]\*mat2[k][j]+mat3[i][j];

}

}

}

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

{

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

{

cout<<mat3[i][j]<<" ";

}

cout<<endl;

}

return 0;

}

**QUESTION 4:**

#include<iostream>

using namespace std;

void linearsearch(int arr[],int n,int wanted)

{

int count=0;

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

{

if(arr[i]==wanted)

{

cout<<i<<" "; count++;

}

}

if(count==0)

{

cout<<"Element not found";

}

return;

}

int main()

{

int n,wanted;

cin>>n;

int arr[n];

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

{

cin>>arr[i];

}

cin>>wanted;

linearsearch(arr,n,wanted);

return 0;

}

**QUESTION 5:**

#include<iostream>

using namespace std;

class rectangle

{

private:

int l1;

int b1;

public:

int area(int l1,int b1)

{

return l1\*b1;

}

int perimeter(int l1,int b1)

{

return 2\*(l1+b1);

}

};

int main()

{

rectangle object1;

int l,b;

cin>>l;

cin>>b;

cout<<endl<<object1.area(l,b);

cout<<endl<<object1.perimeter(l,b);

return 0;

}