

Sreenidhi University

Name: Himani Naidu

Email: 2401100cse0019@cse.suh.edu.in

Roll no: 2401100cse0019

Phone: 6281529011

Branch: Sreenidhi University

Department: CSE - A

Batch: 2024-28

Degree: B.Tech - CSE

Scan to verify results



2024_28_CPP Programming Lab_CSE A

2028_SUH_CPP_COD_Cycle 6

Attempt : 1

Total Mark : 50

Marks Obtained : 50

Section 1 : Coding

1. Problem Statement

Write a program to store the numbers given by the user in an array, and then to find the mean, deviations of the given values from the mean, and variance.

Answer

```
// You are using GCC
#include<iostream>
#include<iomanip>
#include<cmath>
#include<vector>
using namespace std;
int main(){
    int n;
    cin>>n;
```

```

double arr[n];
int i;
double sum=0;
for(i=0;i<n;i++){
    cin>>arr[i];
    sum+=arr[i];
}
double mean,var,sum_sqr = 0;
mean=sum/n;
cout<<fixed<<setprecision(2)<<mean<<endl;
for(i=0;i<n;i++){
    cout<<arr[i]<<":"<<fixed<<setprecision(2)<<arr[i]-mean<<endl;
}
for(i=0;i<n;i++){
    sum_sqr+=pow(arr[i]-mean,2);
}
var=sum_sqr/n;
cout<<fixed<<setprecision(2)<<var;
return 0;
}

```

Status : Correct

Marks : 10/10

2. Problem Statement

Write a program to initially store user given numbers in an array, display them and then to insert a given number at a given location and to delete a number at a given location.

Answer

```

// You are using GCC
#include<iostream>
using namespace std;
int main()
{
    int n,ch,num,pos,i,j;
    cin>>n;
    int arr[n];
    for(i=0;i<n;i++)
    {

```

```
    cin>>arr[i];
}
while(1)
{
    cin>>ch;
    switch(ch)
    {
        case 1:
            cin>>num;
            cin>>pos;

            for(i=0;i<n;i++)
            {
                cout<<arr[i]<<" ";
            }
            cout<<endl;
            for(i=n-1;i>=pos;i--)
            {
                arr[i+1]=arr[i];
            }
            arr[pos]=num;
            n++;

            for(i=0;i<n;i++)
            {
                cout<<arr[i]<<" ";
            }
            cout<<endl;
            break;
        case 2:
            int del;
            cin>>del;
            for(i=0;i<n;i++)
            {
                cout<<arr[i]<<" ";
            }
            cout<<endl;

            for(i=del+1;i<n;i++)
            {
                arr[i-1]=arr[i];
            }
    }
}
```

```

n--;

for(i=0;i<n;i++)
{
    cout<<arr[i]<<" ";
}

cout<<endl;
break;

case 0:
cout<<"Exiting Program";
return 0;
}
}
}

```

Status : Correct

Marks : 10/10

3. Problem Statement

Write a program to store user given numbers in an array and find the locations of minimum and maximum values in the array and swap them and display the resulting array.

Answer

```

// You are using GCC
#include<iostream>
using namespace std;
int main(){
    int n,i;
    cin>>n;
    int arr[n];
    for(i=0;i<n;i++){
        cin>>arr[i];
    }
    int max,min,pos_max=0,pos_min=0;

```

```

    max=arr[0];
    for(i=0;i<n;i++){
        if(max<arr[i]){
            max=arr[i];
            pos_max=i;
        }
    }
    min=arr[0];
    for(i=0;i<n;i++){
        if(min>arr[i]){
            min=arr[i];
            pos_min=i;
        }
    }
    int temp=arr[pos_max];
    arr[pos_max]=arr[pos_min];
    arr[pos_min]=temp;

    for(i=0;i<n;i++){
        cout<<arr[i]<<" ";
    }return 0;

}

```

Status : Correct

Marks : 10/10

4. Problem Statement

Write a program to implement the operations of matrices – addition, and subtraction.

You are tasked with writing a program that reads two matrices from user input and performs the following operations: addition and subtraction. However, matrix addition and subtraction are only possible if the two matrices have the same dimensions.

Answer

```

// You are using GCC
#include<iostream>
#include<iomanip>

```

```

using namespace std;
int main(){
    int m,n;
    cin>>m>>n;
    int a[m][n],b[m][n],sum[m][n],dif[m][n];
    int i,j;
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            cin>>a[i][j];
        }
    }
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            cin>>b[i][j];
        }
    }
    cout<<"Matrix A :"<<endl;
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            cout<<a[i][j]<<" ";
        }
        cout<<endl;
    }
    cout<<endl;
    cout<<"Matrix B :"<<endl;
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            cout<<b[i][j]<<" ";
        }
        cout<<endl;
    }
    cout<<endl;
    cout<<"Matrix A+B :"<<endl;
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            sum[i][j]=a[i][j]+b[i][j];
            cout<<sum[i][j]<<" ";
        }
        cout<<endl;
    }
    cout<<endl;
    cout<<"Matrix A - B :"<<endl;

```

```

for(i=0;i<m;i++){
    for(j=0;j<n;j++){
        dif[i][j]=a[i][j]-b[i][j];
        cout<<dif[i][j]<<" ";
    }
    cout<<endl;
}
}

```

Status : Correct

Marks : 10/10

5. Problem Statement

Write a program to perform matrix multiplication. The program should read two matrices, multiply them, and display the resulting matrix. Matrix multiplication is only possible if the number of columns in the first matrix matches the number of rows in the second matrix.

Answer

```

// You are using GCC
#include<iostream>
using namespace std;
int main(){
    int a[10][10],b[10][10],c[10][10]={};
    int rA,cA,rB,cB;
    cin>>rA>>cA>>rB>>cB;

```

```
for(int i=0;i<rA;i++){
    for(int j=0;j<cA;j++){
        cin>>a[i][j];
    }
}
for(int i=0;i<rB;i++){
    for(int j=0;j<cB;j++){
        cin>>b[i][j];
    }
}
cout<<"Matrix A:"<<endl;
for(int i=0;i<rA;i++){
    for(int j=0;j<cA;j++){
        cout<<a[i][j]<<" ";
        cout<<endl;
    }
}
cout<<"Matrix B:"<<endl;
for(int i=0;i<rB;i++){
    for(int j=0;j<cB;j++){
        cout<<b[i][j]<<" ";
        cout<<endl;
    }
}
for(int i=0;i<rA;i++){
    for(int j=0;j<cB;j++){
        for(int k=0;k<cA;k++){
            c[i][j]+=a[i][k]*b[k][j];
        }
    }
}
cout<<"Matrix A * B:"<<endl;
for(int i=0;i<rA;i++){
    for(int j=0;j<cB;j++){
        cout<<c[i][j];
    }
    cout<<endl;
}
return 0;
}
```


2401100cse0019

Status : Correct

2401100cse0019

2401100cse0019

Marks : 10/10

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019

2401100cse0019