# A Micro Project Report

## on

# Problem Solving using C Language


Submitted by

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET**

**(AUTONOMOUS)**


**Accredited by NAAC with A+ Grade and NBA under Tier-1**

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**2024-2025**

**NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**


## CERTIFICATE

**This is to certify that Yarraguntla Akshaya, Roll No: 23471A05F6, a Second Year Student of the Department of Computer Science and Engineering, has completed the Micro Project Satisfactorily in "Problem Solving using C Language" for the Academic Year 2024-2025..**

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# Find second and third smallest element from array.

## AIM:

**1.Write a C program to find second and third smallest element from array.**

**Source code:-**

```
#include<stdio.h>

int main()

{

   int n,a[100],i,j,temp;

   printf("\n Enter the number of elements :");

   scanf("%d",&n);

   printf("\n Enter the array elements :");

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

   scanf("%d",&a[i]);

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

   {

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

      {

         if(a[i]<a[j])

         {

            temp=a[i];

            a[i]=a[j];

            a[j]=temp;

         }

      }

   }
```

```
    printf("\n The second smallest element is %d ",a[n-2]);
    printf("\n The third smallest element is %d ",a[n-3]);
    return 0;
}
```

**Input:**

Enter the number of elements :5

Enter the array elements :5 6 3 4 7

**Output:**

The second smallest element is 4

The third smallest element is 5

```
Enter the number of elements :5

Enter the array elements :5 6 3 4 7

The second smallest element is 4
The third smallest element is 5
```

# Insert number in given position in array.

**AIM**:

**2. Write a C program to insert number in given position in array.**

**Source code:-**

```
#include<stdio.h>
int main()
{
    int arr[100];
    int n,pos,num,i;
    printf("\n Enter the no.of elements:");
    scanf("%d",&n);
    printf("\n Enter the elements:");
    for(i=0;i<n;i++)
    scanf("%d",&arr[i]);
    printf("\n Enter the number to be inserted:");
    scanf("%d",&num);
    printf("\n Enter the position to insert the number:");
    scanf("%d",&pos);
    if(pos<0 || pos>n)
    printf("\n Invalid position!");
    else
    {
      for(i=n;i>pos;i--)
      {
            arr[i]=arr[i-1];
```

```
    }
   arr[pos]=num;
   n++;
   printf("\n Array after insertion :\n");
   for(i=0;i<n;i++)
    printf(" %d",arr[i]);
  printf("\n");
  }
 return 0;
}
```

**Input:**

Enter the no.of elements:3

Enter the elements:12 34 56

Enter the number to be inserted:67

Enter the position to insert the number:2

**Output:**

Array after insertion :

12 34 67 56

```
 Enter the no.of elements:3

 Enter the elements:12 34 56

 Enter the number to be inserted:67

 Enter the position to insert the number:
2

 Array after insertion :
 12 34 67 56
```

# Merge two arrays

**AIM**:

**3.Write a C program to merge two arrays.**

**Source code:-**

```
#include<stdio.h>
int main()
{
   int a[100],b[100],c[100];
   int n1,n2,n3,i;
   printf("\n Enter the size of the array:");
   scanf("%d",&n1);
   printf("\n Enter the size of second array:");
   scanf("%d",&n2);
   printf("\n Enter the elements of first array:");
   for(i=0;i<n1;i++)
   scanf("%d",&a[i]);
   printf("\n Enter the elements of second array:");
   for(i=0;i<n2;i++)
   scanf("%d",&b[i]);
   n3=n1+n2;
   for(i=0;i<n1;i++)
   c[i]=a[i];
   for(i=0;i<n2;i++)
   c[i+n1]=b[i];
   printf("\n The merged array :");
```

```
    for(i=0;i<n3;i++)
    printf("%d",c[i]);
    return 0;
}
```

**Input:**

Enter the size of the array:3

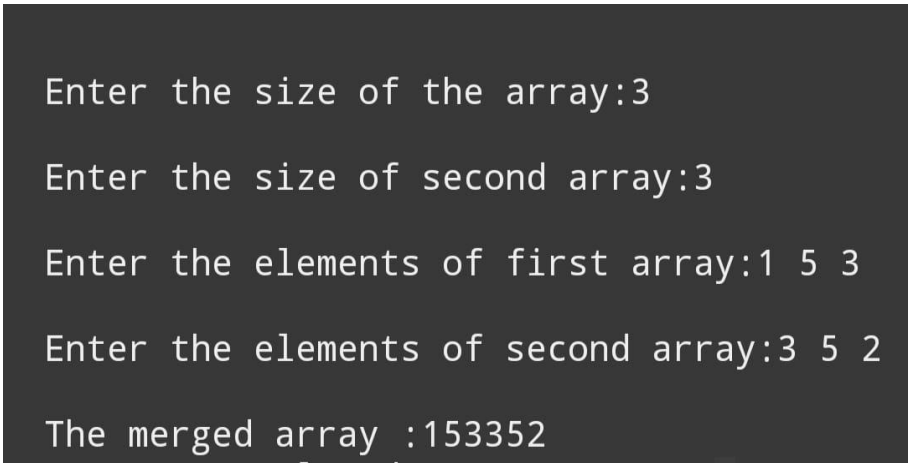
Enter the size of second array:3

Enter the elements of first array: 1 5 3

Enter the elements of second array:3 5 2

**Output:**

The merged array :153352



Write a C program to find standard deviation.

# Find standard deviation

## AIM:

**4.Write a C program to find standard deviation.**

**Source code:-**

```
#include<stdio.h>
#include<math.h>
int main()
{
   int n,i;
   printf("\n Enter the number of elements :");
   scanf("%d",&n);
   float data[n],sum=0.0,mean,sum_square_diff=0.0,standard_Deviation;
   printf("\n Enter the elements :");
   for(i=0;i<n;i++)
   {
      scanf("%f",&data[i]);
      sum+=data[i];
   }
   mean=sum/n;
   for(i=0;i<n;i++)
   sum_square_diff+=pow(data[i]-mean,2);
   standard_Deviation=sqrt(sum_square_diff/n);
   printf("\n Standard deviation = %.2f \n",standard_Deviation);
   return 0;
}
```

**Input:**

Enter the number of elements :5

Enter the elements :3 45 23 10 56

**Output:**

Standard deviation = 20.22