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)

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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 Patan Zahara bi, Roll No: 23471A05EA , 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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Display Details of Students Having Highest Marks.

AIM:

Read Records of n Students &Display Details of Students Having Highest Marks.

```
#include <stdio.h>
struct student
{
   int rollno;
   char name[10];
   float marks;
   int temp;
};
void main()
{
   int i,j;
   int n;
   struct student st[5],temp;
   printf("Enter the no.of students:");
   scanf("%d",&n);
```

```
for(i=0;i<n;i++)
{
    printf("\n Enter roll no:");
    scanf("%d",&st[i].rollno);
    printf("\n Enter name:");
    scanf("%s",st[i].name);
    printf("\n Enter marks:");
    scanf("%f",&st[i].marks);
}
for(i=0;i<n-1;i++)
{
    for(j=i+1;j<n;j++)
    {
        if(st[i].marks<st[j].marks)
        {
            temp=st[i];
            st[i]=st[j];
            st[j]=temp;
        }
    }
}
 printf("Highest marks stdent:");
 printf("\n roll no=%d",st[0].rollno);
```

```
    printf("\n Name=%s",st[0].name);
    printf("\n Marks=%f",st[0].marks);
}
```

Input:

```
Enter the no.of students:3

 Enter roll no:1
  Enter name:zahara
  Enter marks:89

 Enter roll no:2
 Enter name:suma
 Enter marks:90

 Enter roll no:3
 Enter name:Aishu
  Enter marks:95
```

Output:

Highest marks stdent:

roll no=3

Name=Aishu

Marks=95.000000

```
Enter the no.of students:3
 Enter roll no:1
 Enter name:zahara
 Enter marks:89
 Enter roll no:2
 Enter name:suma
 Enter marks:90
 Enter roll no:3
 Enter name:Aishu
 Enter marks:95
Highest marks stdent:
 roll no=3
 Name=Aishu
 Marks=95.000000
```

Sort on the Basis of Marks in Ascending order

AIM:

Read Records of n Students in Structure &Sort on the Basis of Marks in Ascending order

```
#include<stdio.h>
struct student
{
   int rollno;
   char name[10];
   float marks;
   int temp;
};
void main()
{
   int i,j;
   int n;
   struct student st[5],temp;
   printf("Enter the no.of students:");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("\n Enter roll no:");
      scanf("%d",&st[i].rollno);
      printf("\n Enter name:");
      scanf("%s",st[i].name);
      printf("\n Enter marks:");
      scanf("%f",&st[i].marks);
   }
   for(i=0;i<n-1;i++)
   {
      for(j=i+1;j<n;j++)
```

```
        {
            if(st[i].marks>st[j].marks)
            {
                temp=st[i];
                st[i]=st[j];
                st[j]=temp;
            }
        }
    }
     printf("Marks in Ascending Order");
    for(i=0;i<n;i++)
    {
        printf("\n roll no=%d",st[i].rollno);
        printf("\n Name=%s",st[i].name);
        printf("\n Marks=%f",st[i].marks);

    }
}
```

Input:

```
Enter the no.of students:3

 Enter roll no:1
 Enter name:suma
 Enter marks:89

 Enter roll no:2
 Enter name:zahara
 Enter marks:97

 Enter roll no:3
 Enter name:Aishu
 Enter marks:78
```

Output:

Marks in Ascending Order:

roll no=1
Name=Aishu
Marks=78.000000

roll no=2
Name=suma
Marks=89.000000

roll no=3
Name=zahara
Marks=97.000000

```
Enter the no.of students:3

 Enter roll no:1

 Enter name:suma

 Enter marks:89

 Enter roll no:2

 Enter name:zahara

 Enter marks:97

 Enter roll no:3

 Enter name:Aishu

 Enter marks:78
Marks in Ascending Order
 roll no=3
 Name=Aishu
 Marks=78.000000
 roll no=1
 Name=suma
 Marks=89.000000
 roll no=2
 Name=zahara
 Marks=97.000000
```

Employee Record in Descending order by Age in Structure

AIM:

Employee Record in Descending order by Age in Structure

```
#include<stdio.h>
struct employee
{
   char name[10];
   float age;
   int temp;
};
void main()
{
   int i,j;
   int n;
   struct employee e[5],temp;
   printf("Enter the no.of employee:");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("\n Enter name:");
```

```
        scanf("%s",e[i].name);
        printf("\n Enter age:");
        scanf("%f",&e[i].age);
    }
    for(i=0;i<n-1;i++)
    {
        for(j=i+1;j<n;j++)
        {
            if(e[i].age<e[j].age)
            {
                temp=e[i];
                e[i]=e[j];
                e[j]=temp;
            }
        }
    }
    for(i=0;i<n;i++)
    {
        printf("\n Name=%s",e[i].name);
        printf("\n Age=%f",e[i].age);

    }
}
```

Input:

Enter the no.of employee:3

Enter name:suma

Enter age:56

Enter name:zahara

Enter age:45

Enter name:Aishu

Enter age:36

Output:

Name=suma

Age=56.000000

Name=zahara

Age=45.000000

Name=Aishu

Age=36.000000

```
Enter the no.of employee:3

 Enter name:suma

 Enter age:56

 Enter name:zahara

 Enter age:45

 Enter name:Aishu

 Enter age:36

 Name=suma
 Age=56.000000
 Name=zahara
 Age=45.000000
 Name=Aishu
 Age=36.000000
```

Find the grace marks for a student using switch

AIM:

Write a program which to find the grace marks for a student using switch

```
#include<stdio.h>
struct subjects
{
   int marks;
};
void main()
{
   struct subjects s[10];
   int i,total=0,subF=0,class;
   printf("Enter the subjects s1,s2,s3,s4,s5:");
   for(i=1;i<=5;i++)
   {
      scanf("%d",&s[i].marks);
      if(s[i].marks<35)
      {
         subF=subF+1;
      }
   }
```

```
printf("\n subjects fail=%d",subF);
class=subF<=1?1:(subF<=3&&subF>=2?2:3);
printf("\n class:%d",class);
switch(class)
{
   case 1:
        if(subF<=1)
        {
          for(i=1;i<=5;i++)
           {
             if(s[i].marks<35)
              {
                s[i].marks=35-s[i].marks;
                printf("\n Grace marks=%d",s[i].marks);
              }
           }
        }
        else
        {
           printf("\n No Grace Marks");
        }
        break;
   case 2:
        if(subF<=2)
        {
          for(i=1;i<=5;i++)
```

```
        {
          if(s[i].marks<35)
          {
            s[i].marks=35-s[i].marks;
            printf("\n Grace marks=%d",s[i].marks);
          }
        }
      }
      else
      {
         printf("\n No Grace Marks");
      }
      break;
case 3:
      if(subF<=3)
      {
        for(i=1;i<=5;i++)
        {
          if(s[i].marks<35)
          {
            s[i].marks=35-s[i].marks;
            printf("\n Grace marks=%d",s[i].marks);
          }
        }
      }
      else
```

```
                {
                   printf("\n No Grace Marks");
                }
                break;
            default:
                 printf("\n Enter a valid class");
                 break;
        }
        if(subF>3)
        printf("\n Student is not promoted");
        else
        printf("\n Student is promoted");
}
```

Input 1:

Enter the subjects s1,s2,s3,s4,s5:90

89

78

56

21

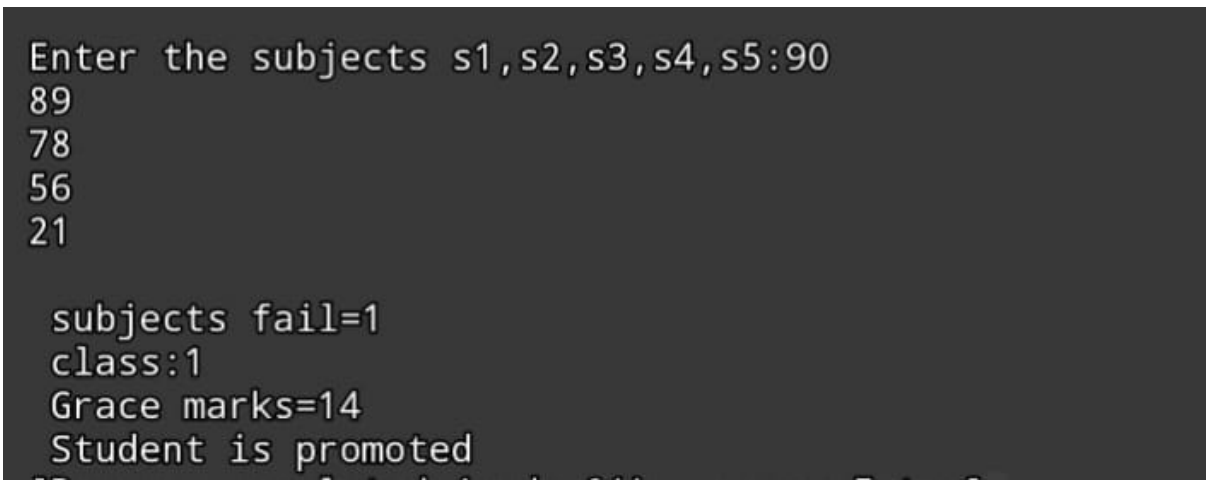
Output 1:

subjects fail=1

class:1

Grace marks=14

Student is promoted



Input 2:

Enter the subjects s1,s2,s3,s4,s5:78

90

56

32

21

Output 2:

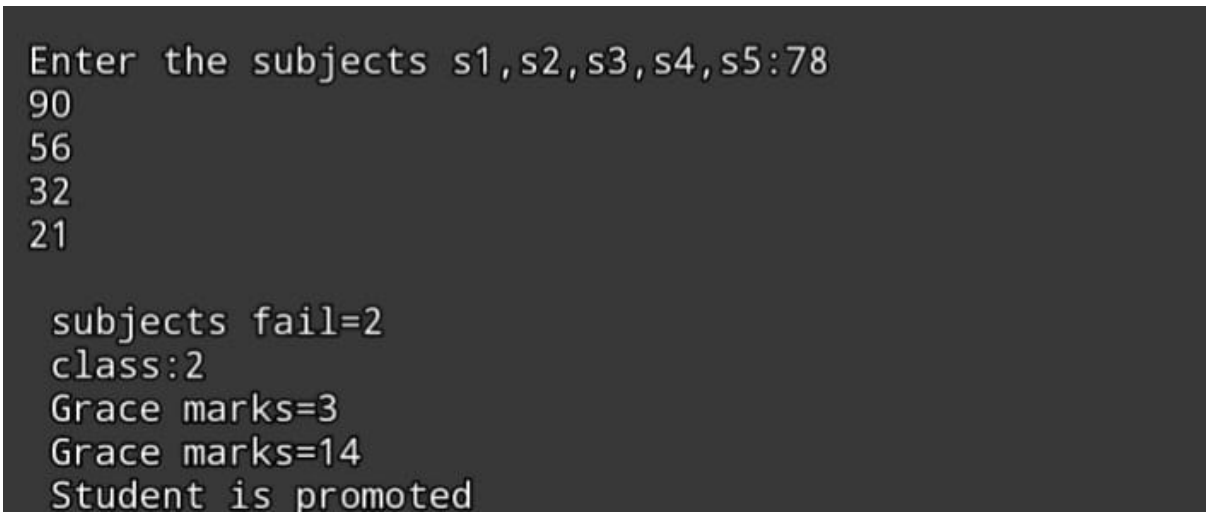
subjects fail=2

class:2

Grace marks=3

Grace marks=14

Student is promoted



Input 3:

Enter the subjects s1,s2,s3,s4,s5:34
21
14
24
32

Output 3:

subjects fail=5
class:3
No Grace Marks
Student is not promoted