ARIGNAR ANNA GOVT ARTS AND SCIENCE COLLEGE

KARAIKAL – 609605

Introduction to Problem Solving using C - Record

November - 2023

I – Semester

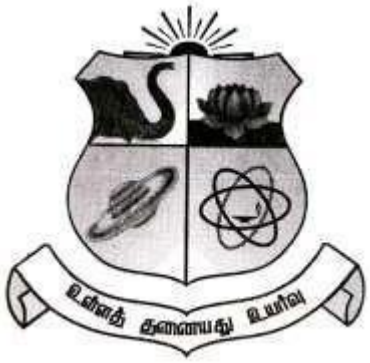
Reg. No. :_____

Name :_____

DEPARTMENT OF COMPUTER SCIENCE

AAGASC - KARAIKAL

ARIGNAR ANNA GOVERNMENT ARTS AND SCIENCE COLLEGE, KARAIKAL-609605



DEPARTMENT OF COMPUTER SCIENCE

Certified that this is the bonafide record of practical work done by Mr. / Miss …….. Reg. No. ..... of First Year B.Sc. Computer Science during the I st -Semester in the academic year 2023-24.

HEAD OF THE DEPARTMENT **STAFF INCHARGE**

Submitted for the University Examination held on ……..

EXTERNAL EXAMINER **INTERNAL EXAMINER**

CONTENTS

// EX1. AREA OF CIRCLE

```
#include<stdio.h>
#include<conio.h>
void main()
{
float r, area;
clrscr();
printf("Enter radius of circle:=");
scanf("%f", & r);
area = 3.14 *r * r;
printf("Area of circle:=: %f", area);
getch();
}
```

OUTPUT :

```
Enter radius of circle:=10
Area of circle:=: 314.000000
```

// EX2. BIGGEST AMONG A,B,C

```
#include<stdio.h>
#include<conio.h>
void main()
{
inta,b,c;
clrscr();
printf("Enter the value of A :=");
scanf("%d",&a);
printf("Enter the value of B :=");
scanf("%d",&b);
printf("Enter the value of C :=");
scanf("%d",&c);
if(a>b)
  {
if(a>c)
printf("A is bigger");
else
printf("C is bigger");
  }
else
 {
if(b>c)
```

```
printf("B is bigger");
else
printf("C is bigger");
   }
}
```

OUTPUT :

```
Enter the value of A :=10
Enter the value of B :=70
Enter the value of C :=50
B is bigger
```

//EX3. ODD NUMBES 1 - 50

```
#include<stdio.h>
#include<conio.h>
void main()
{
inta,i;
clrscr();
for(i=1;i<=50;i++)
if(i%2!=0)
printf("%d \n",i);
}
```

OUTPUT :

```
1
3
5
7
9
11
13
15
```

17

19

21

23

25

27

29

31

33

35

37

39

41

43

45

47

49

// EX4. PRINT DAY OF THE WEEK (SWITCH STATEMENT)

```
#include <stdio.h>
#include<conio.h>
void main()
{
int day;
clrscr();
printf("Enter the day number (1 to 7): ");
scanf("%d", &day);
switch(day)
  {
case 1:
printf("Sunday");
break;
case 2:
printf("Monday");
break;
case 3:
printf("Tuesday");
break;
case 4:
printf("Wednesday");
break;
```

```
case 5:
printf("Thursday");
break;
case 6:
printf("Friday");
break;
case 7:
printf("Saturday");
break;
default:
printf("Invalid day number.");
  }
}
```

OUTPUT :

```
Enter the day number (1 to 7): 5
Thursday
```

/* EX5. Matrix Addition */

```
#include <stdio.h>
#include<conio.h>
void main()
{
int a[4][4],b[4][4],c[4][4], i, j,n=3;
clrscr();
for(i=1;i<=n;i++)
   {
for(j =1;j<=n;j++)
    {
printf("Enter the value of position (%d, %d): ", i, j);
scanf("%d", &a[i][j]);
    }
   }
for(i=1;i<=n; i++)
   {
for(j=1;j<=n; j++)
    {
printf("Enter the value of position (%d, %d): ", i, j);
scanf("%d", &b[i][j]);
    }
   }
```

```
for(i=1;i<=n;i++)
    {
for(j=1;j<=n;j++)
     {
c[i][j]=a[i][j]+b[i][j];
     }
    }
printf("sum of the array :\n");
for(i=1;i<=n;i++)
    {
for(j =1;j<=n;j++)
     {
printf("%d\t",c[i][j]);
     }
printf("\n");
    }
getch();
}
```

OUTPUT :

Enter the value of position (1, 1): 5

Enter the value of position (1, 2): 4

Enter the value of position (1, 3): 3

Enter the value of position (2, 1): 6

Enter the value of position (2, 2): 7

Enter the value of position (2, 3): 3

Enter the value of position (3, 1): 8

Enter the value of position (3, 2): 4

Enter the value of position (3, 3): 5

Enter the value of position (1, 1): 2

Enter the value of position (1, 2): 9

Enter the value of position (1, 3): 3

Enter the value of position (2, 1): 2

Enter the value of position (2, 2): 7

Enter the value of position (2, 3): 8

Enter the value of position (3, 1): 6

Enter the value of position (3, 2): 4

Enter the value of position (3, 3): 3

sum of the array :

7 13 6

8 14 11

14 8 8

\

/* EX6. FIBONACCI SERIES */

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n;
void fib(int);
clrscr();
printf("\n\tEnter a value :");
scanf("%d",&n);
fib(n);
getch();
}
void fib(int x)
{
int a=0,b=1,c,i;
printf("\n\tFibonacci series");
printf("\n\t\t%d",a);
printf("\n\t\t%d",b);
for(i=1;i<=x;i++)
{
 c=a+b;
printf("\n\t\t%d",c);
```

```
 a=b;
 b=c;
}
}
```

OUTPUT :

```
Enter a value :10

Fibonacci series
0
1
1
2
3
5
8
13
21
34
55
89
```

/* EX7. Factorial Using Recursion */

```
#include<stdio.h>
#include<conio.h>
void main()
{
intx,fact(int);
clrscr();
printf("\n\t Factorial Using Recursion\n");
printf("\n\tEnter Value : ");
scanf("%d",&x);
printf("\n\tFactorial for %d is %d",x,fact(x));
getch();
}
int fact(int n)
{
if (n==1)
return(1);
else
return(n*fact(n-1));
}
```

OUTPUT :

Factorial Using Recursion

Enter Value : 5

Factorial for 5 is 120

/* EX8. STRING FUNCTIONS */

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
int s1,s2;
char str1[50],str2[50],str3[50];
clrscr();
printf("\n\t String Functions");
printf("\n\t ****************");
printf("\n\n\tEnter String1:");
scanf("%s",str1);
printf("\n\tEnter String2:");
scanf("%s",str2);
s1=strlen(str1);
s2=strlen(str2);
printf("\n\t String1 = %s",str1);
printf("\n\t Sring2 = %s",str2);
printf("\n\n\t Length of String1 %d (Using Strlen)",s1);
printf("\n\t Length of String2 %d",s2);
strcpy(str3,str1);
printf("\n\n\t String3 = %s (Using Strcpy)",str3);
```

```
if (strcmp(str1,str3)==0)
printf("\n\n\t Yes %s and %s are Equal String (Using Strcmp)",str1,str3);
getch();
}
```

OUTPUT :

```
String Functions
**********

Enter String1:Anna

Enter String2:College

String1 = Anna
Sring2 = College

Length of String1 4 (Using Strlen)
Length of String2 7

String3 = Anna (Using Strcpy)

Yes Anna and Anna are Equal String (Using Strcmp)
```

/* EX9. Counting Vowels in Given String */

```
#include<stdio.h>
#include<conio.h>
void main()
{
char name[60];
int count=0,i=0;
clrscr();
printf("\n\tEnter a Text Without Space\n\n\t");
scanf("%s",name);
while(1)
  {
   if (name[i]=='a'|| name[i]=='e'||name[i]=='i'||name[i]=='o'||name[i]=='u'||
       name[i]=='A'||name[i]=='E'||name[i]=='I'||name[i]=='O'||name[i]=='U')
          count++;
i++;
if(name[i]=='\0') break;
  }
printf("\n\tVowels in the Given String is : %d", count);
getch();
}
```

OUTPUT :

Enter a Text Without Space

ArignarAnnaGovtArtsandScienceCollege

Vowels in the Given String is : 14

/* EX10. Structure usage */

```
#include<stdio.h>
#include<conio.h>
struct stud
 {
intreg_no;
char name[30];
int marks[6];
int sum;
floatav;
 };
void main()
 {
inti,j;
struct stud s[5];
clrscr();
printf("\nEnter 2 Student Details :");
for(i=1;i<=2;i++)
  {
printf("\n\tStudent %d  : ",i);
printf("\n\t Student Reg_No : ");
scanf("%d",&s[i].reg_no);
printf("\n\t Student Name  : ");
```

```
scanf("%s",s[i].name);
for(j=1;j<=5;j++)
   {
printf("\n\t Subject %d  : ",j);
scanf("%d",&s[i].marks[j]);
   }
 }
clrscr();
printf("\n\t\tStudents Mark List");
printf("\n\t\t********************");
for(i=1;i<=2;i++)
  {
printf("\n\t Student %d  : ",i);
printf("\n\t   Student Reg_No : %d",s[i].reg_no);
printf("\n\t   Student Name  : %s",s[i].name);
s[i].sum=0;
for(j=1;j<=5;j++)
   {
        printf("\n\t   Subject %d : %d ",j,s[i].marks[j]);
        s[i].sum=s[i].sum+s[i].marks[j];
        s[i].av=s[i].sum/5;
   }
printf("\n\t   Total : %d",s[i].sum);
```

```
printf("\n\t   Average :%f",s[i].av);
  }
}
```

OUTPUT :

```
            Students MarkList
            ***************
        Student 1  :
          Student Reg_No : 1001
          Student Name  : Raja
          Subject 1 : 75
          Subject 2 : 60
          Subject 3 : 80
          Subject 4 : 90
          Subject 5 : 67
Total : 372
Average :74.000000
        Student 2  :
          Student Reg_No : 1002
          Student Name  :sundar
          Subject 1 : 67
          Subject 2 : 78
```

Subject 3 : 80

Subject 4 : 50

Subject 5 : 45

Total : 320

Average :64.000000