Date	Signature

Serial No.	Program Title	Date	Signature

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1: Program to find the sum and average of 10 numbers.

#include<conio.h>

```c
#include<stdio.h>
void main()
{
clrscr();
int a,I,sum=0;
float average=0;
for(i=0;i<10;i++)
{
 printf("Enter a number");
scanf("%d",&a);
sum=sum+a;
```

```c
}
printf("sum=%d\n",sum);
average=sum/10.0;
printf("Average=%f\n",average)
getch();
}
```

```
Enter a number 1
Enter a number 2
Enter a number 3
Enter a number 4
Enter a number 5
Enter a number 6
Enter a number 7
Enter a number 8
Enter a number 9
Enter a number 10
sum=55
Average=5.500000
```

2: Program to find the greatest of 10 numbers.

#include<conio.h>

#include<stdio.h>

```
void main()
{
clrscr();
int a,b,c;
printf("Enter three numbers");
scanf("%d",&a);
scanf("%d",&b);
scanf("%d",&c);
if(a>b && a>c)
{
printf("Greatest number is: %d" , a);
```

```c
}
if(b>c && b>a)
{
printf("Greatest number is: %d" , b);
}
if(c>a && c>b)
{
printf("Greatest number is: %d" , c);
}
getch();
}
```

```
Enter a number 1
Enter another number 2
Ennter another number 3
Ennter another number 4
Ennter another number 5
Ennter another number 6
Ennter another number 7
Ennter another number 8
Ennter another number 9
Ennter another number 10
Greatest number=10_
```

3: Program to find Simple Interest.

```c
#include<conio.h>
#include<stdio.h>
void main()
{
```

```c
int p,n,count;
float r,si;
count=1;
while(count<=3)
{
printf("\nenter values of p,n, and r");
scanf("%d%d%f" , &p,&n,&r);
si=p*n*r/100;
printf("simple ineterest = rs. %f" , si);
count=count+1;
}
```

getch();

}

```
Enter a principal amount 100.0
Enter a rate of interest 8.5
Enter a time period 2
Simple Interest=17.000000_
```

4: Program to find whether the entered number is prime.

```
#include<conio.h>
#include<stdio.h>
void main()
{
clrscr();
int a,i,f,g,flag;
printf("Enter a number");
scanf("%d" , &a);
```

```
if(a==2 || f==3)
{
printf("Prime");
}
if(a==1)
{
printf("Undefined");
}
else
{
for(i=2;i<a;i++)
```

```
{
if(a%i==0)
{
flag=1;
break;
}
else
flag=0;
}
if(flag==0) printf("Prime");
if(flag==1) printf("Composite");
```

```
}
getch();
}
```

```
Enter a number 1
Number is neither prime nor composite
```

```
Enter a number 2
Number is prime
```

```
Enter a number 4
Number is composite_
```

5. Program to find the sum of a 5 digit number

```
#include<conio.h>
#include<stdio.h>
Void main()
{
clrscr();
int a,rem,q,sum=0;
printf("Enter a number");
```
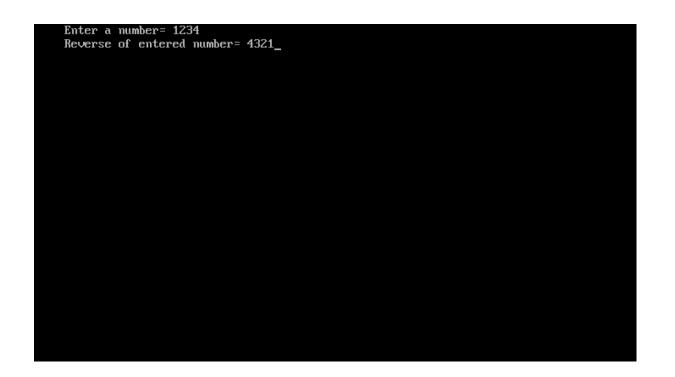
```c
scanf("%d",&a);
while(a>0)
{
rem=a%10;
sum=sum+rem;
a=a/10;
}
printf("Sum of digits=%d",sum);
getch();
}
```

```
Enter a number 12345
Sum of digits=15_
```

6. Program to reverse a 5 digit number

```c
#include<conio.h>
#include<stdio.h>
void main()
{
clrscr();
int n,reverse=0;
printf("Enter a number=");
scanf("%d" , &n);
while(n!=0)
{
 reverse=reverse*10;
```

```c
 reverse=reverse+n%10;
 n=n/10;
}
printf("Reverse of entered number= %d",reverse);
getch();
}
```

```
Enter a number= 1234
Reverse of entered number= 4321_
```

7. Program to generate the Fibonacci Sequence

#include<conio.h>

```c
#include<stdio.h>
void main()
{
clrscr();
int n,first=0,second=1,next,c;
printf("Enter the number of terms");
scanf("%d" , &n);
printf("First %d terms of Fibonacci Series are: \n",n);
for(c=0;c<n;c++)
{
 if(c<=1) next=c;
```

```c
 else
 {next=first+second;
  first=second;
  second=next;}
printf("%d\n" , next);
}
getch();
}
```

```
Enter the number of terms 10
First 10 terms of Fibonacci Series are:
0
1
1
2
3
5
8
13
21
34

_
```

```
Enter a string abcba
Not a Palindrome_
```

8. Write a program to sort an array using bubble

```c
#include<stdio.h>

void main()
{
    int a[10], i, j, t;
```

```c
printf("\nEnter 10 numbers ");
for(i=0;i<10;i++)
{
    scanf("%d", &a[i]);
}
for(i=0;i<10;i++)
{
    for(j=0;j<9;j++)
    {
        if(a[j]>a[j+1])
        {
            t=a[j];
            a[j]=a[j+1];
            a[j+1]=t;
```

```c
            }
        }
    }
    printf("\nSorted loop is: ");
    for(i=0;i<10;i++)
    {
        printf("%d ", a[i]);
    }
        }
```

```
Enter 10 numbers
21
23
43
45
676
1
243
4
4
6
Sorted array=1
4
4
6
21
23
43
45
243
676

_
```

9. Write a program to sort an array using selection sort.

```c
#include<stdio.h>

void main()
{
    int a[10], i, j, t;
    printf("\nEnter 10 numbers ");
    for(i=0;i<10;i++)
    {
        scanf("%d", &a[i]);
    }
    for(i=0;i<10;i++)
```

```c
{
    for(j=i+1;j<10;j++)
    {
        if(a[i]>a[j])
        {
            t=a[i];
            a[i]=a[j];
            a[j]=t;
        }
    }
}
printf("\nSorted loop is: ");
for(i=0;i<10;i++)
{
```

```
        printf("%d ", a[i]);
    }
}
```

```
Enter 10 numbers
2
2
3
4
5
2
34
54
24
2
Sorted array is:
 2
 2
 2
 2
 3
 4
 5
 24
 34
 54
```

10. Program to count the number of vowels in a given string

```
#include<conio.h>
#include<stdio.h>
void  main()
{
clrscr();
int i,ctr=0;
char a[50];
printf("Enter string: ");
```

```c
gets(a);
for(i=0;a[i]!='\0';i++)
if(a[i]=='a'||a[i]=='e'||a[i]=='i'||a[i]=='o'||a[i]=='u'||a[i]
=='A'||a[i]=='E'||a[i]=='I'||a[i]=='O'||a[i]=='U')
ctr++;
printf("\n No. of vowels:%d ",ctr);
getch();
}
```

```
Enter string: This iS A STRinG

No. of vowels:4 _
```

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11. Program to convert a string from lower case to upper case and vice versa

```
#include<conio.h>
#include<stdio.h>
#include<string.h>
void main()
{
clrscr();
char str[20];
int i;
printf("Enter any string");
```

```c
scanf("%s",str);
printf("The string is %s",str);
for(i=0;i<=strlen(str);i++)
{
 if(str[i]>=97&&str[i]<=122)
 str[i]=str[i]-32;
}
printf("\nThe string in upper case is %s",str);
getch();
}
```

```
Enter any string thisstring
The string is thisstring
The string in upper case is THISSTRING
```
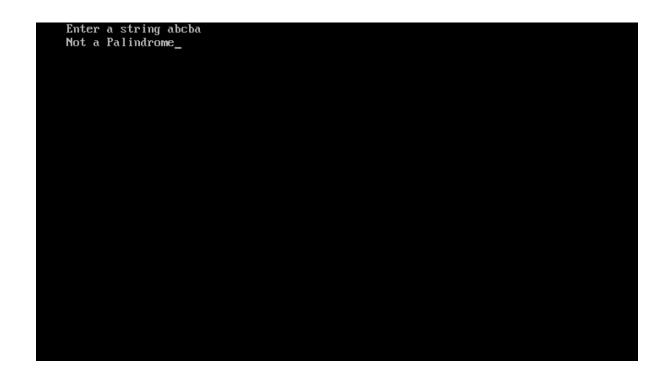
12. Program to check if a given string is a palindrome or not

#include<conio.h>
#include<stdio.h>
#include<string.h>

```c
void main()
{
clrscr();
int i,k=0;
char a[3];
printf("Enter a string");
for(i=0;i<3;i++)
scanf("%c",&a[i]);
for(int j=2;j>=0;j--)
{
    if(a[j]!=a[2-j])
    {
        k=1;
```
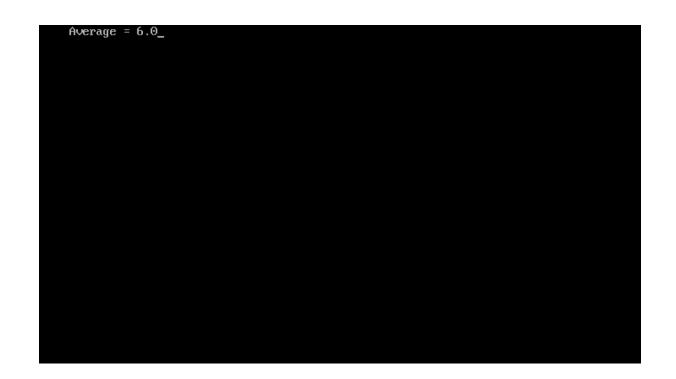
```
        }
}
```



```
Enter a string abcba
Not a Palindrome_
```

13. Program to pass and return pointer to function and hence calculate average of an array

```
#include <stdio.h>
```

```c
#include<conio.h>

double getAverage(int *arr, int size);

int main ()
{
    /* an int array with 5 elements */
    int balance[5] = {1000, 2, 3, 17, 50};
    double avg;

    /* pass pointer to the array as an argument */
    avg = getAverage( balance, 5 ) ;

    /* output the returned value  */
```

```c
    printf("Average value is: %f\n", avg );

    return 0;
}

double getAverage(int *arr, int size)
{
  int    i, sum = 0;
  double avg;

  for (i = 0; i < size; ++i)
  {
    sum += arr[i];
  }
```

```
    avg = (double)sum / size;

    return avg;
}
```

```
Average = 6.0_
```

14. Program to pass an array as pointer to a function that calculates the sum of all elements of the array

```
#include<conio.h>
#include<stdio.h>
void call(int arr[10],int n)
{
int *ptr,sum=0,i=0;
ptr=arr;
for(i=0;i<n;i++)
{
```

```c
    sum+=*ptr;
    ptr++;
    }
    printf("\n Sum of all the elements of the array is:%d",sum);
    }
    int main()
    {
    int a[10],size,i;
    printf("Enter the size of the array:");
    scanf("%d",&size);
```

```c
printf("\nEnter your array:\n");
for(i=0;i<size;i++)
scanf("%d",&a[i]);
call(a,size);
getch();
return 0;
}
```

```
Enter the size of the array:
5

Enter your array:
1
2
3
4
5

 Sum of all the elements of the array is:15
```

15. Program to multiply two 3 by 3 matrices

```
#include<conio.h>
#include<stdio.h>
int main()
{
clrscr();
int p[3][3],q[3][3],r[3][3],i,j,k=0;
printf("/nEnter the elements of matrix 1\n");
for(i=0;i<3;i++)
for(j=0;j<3;j++)
scanf("%d",&p[i][j]);
```

```c
printf("\nEnter the elements of matrix 2\n");
for(i=0;i<3;i++)
for(j=0;j<3;j++)
scanf("%d",&q[i][j]);
for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
{
r[i][j]=0;
for(k=0;k<3;k++)
r[i][j]=r[i][j]+p[i][j]*q[k][j];
}
}
```

```c
printf("\n The multiplication of the two matrices is
\n");
for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
printf("%d\t",r[i][j]);
printf("\n");
}
getch();
return 0;
}
```

```
1
1
1
1
1
1
1
1
1
\nEnter the elements of matrix 2
2
2
2
2
2
2
2
2
2

 The multiplication of the two matrices is
6       6       6
6       6       6
6       6       6
_
```

16. Program to convert decimal to binary and vice versa

```c
#include<conio.h>

#include<stdio.h>

#include<math.h>

int main()

{

int n,i,a[20],k=0,ch,dec=1;

long int j;
```

```c
printf("Enter 1 for decimal to binary and enter 2 for
binary to decimal\n");
scanf("%d",&ch);
if(ch==1)
{
printf("\nEnter the decimal number\n");
scanf("%d",&n);
for(i=n;i>0;i=i/2)
a[k++]=i%2;
printf("\nThe binary form of the number is");
for(i=k;i>0;i--)
```

```c
printf("%d",a[i]);
}
else if(ch==2)
{
printf("\nEnter the binary number\n");
scanf("%d",&j);
printf("\nThe deciaml form of the number is\t");
for(i=j;i>0;i=i/10)
dec=dec+pow(2,(i%10));
printf("%d",dec);
}
```

```c
else
printf("\nWrong choice\n");
getch();
return 0;
}
```

```
Enter 1 for decimal to binary and enter 2 for binary to decimal
2

Enter the binary number
0110

The deciaml form of the number is        6
```

```
Enter 1 for decimal to binary and enter 2 for binary to decimal
1

Enter the decimal number
6

The binary form of the number is          011
```

17. Program to generate the employee details using structure.

#include<conio.h>

#include<stdio.h>

struct employee

{

char name[25],dept[25];

```c
int id;
float salary;
};
int main()
{
struct employee emp;
printf("\nEnter the name of employee\n");
scanf("%s",emp.name);
printf("\nEnter the department of employee\n");
scanf("%s",emp.dept);
printf("\nEnter the id of emplyee\n");
```

```c
scanf("%d",&emp.id);
printf("\nEnter the salary of emplyee\n");
scanf("%f",&emp.salary);
printf("The details are as follows");
printf("\nName:\t%s",emp.name);
printf("\nDepartment:\t%s",emp.dept);
printf("\nEmplyee ID No.\t%d",emp.id);
printf("\nSalary\t%f",emp.salary);
getch();
return 0;
}
```

```
Enter the name of employee
sneha

Enter the department of employee
IT

Enter the id of emplyee
201

Enter the salary of emplyee
1000000
The details are as follows
Name:    sneha
Department:      IT
Emplyee ID No.   201
Salary  1000000.000000_
```

18. Program to find the length of a string without using strlen and then pass the string to characters.

#include<conio.h>

#include<stdio.h>

int slen(char b[25])

```c
{
int i;
for(b=0;b[i]!='\0';i++);
return i;
}
int main()
{
clrscr();
char a[25];
int len;
printf("\nEnter a string\n");
```

```
scanf("%s",a);
len=slen(a);
printf("\nThe length of the string is\t%d",len);
getch();
return 0;
}
```

19. Program to read a file and after converting all lower case to upper case letters write it to another file.

#include<conio.h>

```c
#include<stdio.h>
int main()
{
file *fp,*fr;
fp=fopen("pr24.txt","r");
fr=fopen("pr24a.txt","w");
while(1)
{
ch=fgetc(fp);
if(ch==EOF)
break;
```

```c
if(ch>97||ch<=122)
ch=ch-32;
fputc(ch,fr);
}
fclose(fp);
fclose(fr);
getch();
return 0;
}
```

20. Program to find the factorial of a number using recursion.

```c
#include<conio.h>
#include<stdio.h>
long fact(int i)
{
if(i==1)
return 1;
else
return(i*fact(i-1));
}
int main()
{
int i;
```

```c
printf("\nEnter the number to find the factorial\n");
scanf("%d",&i);
printf("\nThe factorial of the given number is\t%d",fact(i));
getch();
return 0;
}
```

```
Enter the number to find the factorial
4

The factorial of the given number is    24_
```

21. Program to find the area and perimeter of a circle, rectangle, square and triangle using functions.

```c
#include<conio.h>

#include<stdio.h>

#include<math.h>

float ar,per;

void  circle()

{
```

```c
float r;
printf("\nEnter the radius of circle\n");
scanf("%d",&r);
ar=3.14*r*r;
per=2*3.14*r;
printf("\nThe area of circle if \t%f\t and its perimeter if \t%f",ar,per);
}
void rectangle()
{
float a,b;
```

```c
printf("\nEnter the sides of rectangle\n");
scanf("%f %f", &a, &b);
ar=a*b;
per=2*(a+b);
printf("\nThe  area  of  rectangle  is  \t%f\t  and  its
perimeter if\t%f",ar,per);
}
void square()
{
float a;
printf("\nEnter the side of square\n");
```

```c
scanf("%f",&a);
ar=a*a;
per=4*a;
printf("\nThe area of square is \t%f\tand its perimeter
if \t%f",ar,per);
}
void triangle()
{
float a,b,c,s;
printf("\nEnter the sides of triangle\n");
scanf("%f%f%f",&a,&b,&c);
```

```c
per=a+b+c;
s=per/2;
ar=sqrt(s*(s-a)*(s-b)*(s-c));
printf("\nThe area of triangle iss \t%f\tand its perimeter is\t5f",ar,per);
}
int main()
{
int i;
```

```c
printf("\nEnter 1 for circle\nEnter 2 for rectangle\nEnter 3 for square\nEnter 4 for triangle\n");

scanf("%d",&i);

switch(i)

{

case 1:

circle();

break;

case 2:

rectangle();
```

```c
break;
case 3:
square();
break;
case 4:
triangle();
break;
default:
printf("\nWrong choice\n");
}
getch();
```

```
return 0;

}
```

```
Enter 1 for circle
Enter 2 for rectangle
Enter 3 for square
Enter 4 for triangle
2

Enter the sides of rectangle
2
3

The area of rectangle is       6.000000        and its perimeter if   10.00000
0_
```

22. Write a program to implement switch case statement

```c
#include<conio.h>
#include<stdio.h>
void  main()
{
```

```c
clrscr();
int i;
printf("enter the value of i");
scanf("%d" , &i);
switch (i)
{
case 1:
printf("i am case 1 \n");
break;
case 2:
printf("i am case 2 \n");
break;
case 3:
```

```
printf("i am case 3 \n");
break;
default:
printf("i am default");
}
getch();
}
```

```
enter the value of i
2
i am case 2
_
```

23. Program to print the following:

1
12
123
1234
12345

```
#include<stdio.h>
#include<conio.h>
int main()
{
clrscr();
```

```c
int c,k;
for(c=1;c<=5;c++)
 {
  for(k=1;k<=c;k++)
  printf("%d" , k);
  printf("\n");
 }
getch();
return 0;
}
```

```
1
12
123
1234
12345
```

24. Write a program for the addition of two 3*3 matrices

```c
#include<conio.h>
#include<stdio.h>
int main()
```

```c
{
clrscr();
int i,j,p[3][3],q[3][3],r[3][3];
printf("Enter the elements of the first matrix\n");
for(i=0;i<3;i++)
 for(j=0;j<3;j++)
  scanf("%d",&p[i][j]);

printf("Enter the elements of the second matrix\n");
for(i=0;i<3;i++)
 for(j=0;j<3;j++)
  scanf("%d",&q[i][j]);
```

```c
for(i=0;i<3;i++)
 for(j=0;j<3;j++)
  r[i][j]=p[i][j]+q[i][j];

printf("Sum of entered matrices:\n");

for(i=0;i<3;i++)
{
for(j=0;j<3;j++)
  printf("%d\t",r[i][j]);
  printf("\n");
}
getch();
```

```
return 0;
}
```

```
Enter the elements of the first matrix
1
2
3
4
5
6
7
8
9
Enter the elements of the second matrix
1
2
1
2
1
2
1
2
1
Sum of entered matrices:
2       4       4
6       6       8
8       10      10
```

25. Write a program to search a number from an array

#include<conio.h>

#include<stdio.h>

```c
void main()
{
clrscr();
int a[30],element,num,i;
printf("Enter number of elements:");
scanf("%d" , &num);
printf("\n Enter the values:");
for(i=0;i<num;i++)
{
scanf("%d" , &a[i]);
}
```

```c
printf("Enter the elements to be searched:");
scanf("%d" , &element);
i=0;
while(i<num&&element !=a[i])
{ i++; }
if(i<num)
{printf("Number found at the location =%d" , i);}
else
{printf("Number not found");}
getch();
}
```

```
Enter number of elements: 10

 Enter the values: 1 2 3 4 5 6 7 8 9 10
Enter the elements to be searched: 12
Number not found
```