

## LAB Sheet-1

1. program to display name of your college by using printf() function.

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("Kantipur City College");
getch();
}
```

2. program to display name, address and phone by using '\t' in printf() function

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("Prameshwar Shrestha \t Thankot \t 4313849");
getch();
}
```

3. program to display name, address and phone by using '\n' in printf() function

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("Prameshwar Shrestha \n Thankot \n 4313849");
getch();
}
```

## LAB Sheet Solution -2

1. program to read two integer and calculate sum, difference and product #include<stdio.h>

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,sum,differ,product;
printf("Enter the two Numbers");
scanf("%d%d",&a,&b);
printf("Sum=%d\nDifference=%d\nproduct=%d\n",a+b,a-b,a*b);
getch();
}
```

2. program to calculate the cube of (a+b)

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
printf("Enter the two numbers");
scanf("%d%d",&a,&b);
printf("\n The Calculaiton of(a+b)cube is %d", (a+b)*(a+b)*(a+b));
getch();
}
```

3. program to ask the user for the radiud of a circle and calculate the area and circumference

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

void main()
{
float pi,radius;
clrscr();
printf("Enter value of radius:");
scanf("%f",&radius);
pi=3.14;
printf("The area of circle is %f \nThe circumference if circle is %f", (pi*radius*radius), (2*pi*radius));
getch();
}
```

4. program to calculate the simple interest

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

```

void main()
{
float interest,prin,rate,year;
clrscr();
printf("Enter the principal:");
scanf("%f",&prin);
printf("Enter the rate:");
scanf("%f",&rate);
printf("Enter the no of years:");
scanf("%f",&year);
interest=(prin*rate*year)/100;
printf("The required interest is %f",interest);
getch();
}

```

5. program to convert temperature value given in celsius to fahrenheit

```

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

void main()
{
float cel,farh;
clrscr();
printf("Enter the temperature in celsius:");
scanf("%f",&cel);
farh=(cel*1.8)+32;
printf("The temperature in fahrenheit is %f",farh);
getch();
}

```

6. program to print the highest numbers among 3

```

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

void main()
{
int a,c,b,d,e;
clrscr();
printf("Enter the firstnumber:");
scanf("%d",&a);
printf("Enter the second number:");
scanf("%d",&b);
printf("Enter the third number:");
scanf("%d",&c);
d=(a>b)?a:b;
e=(d>c)?d:c;
printf("\nthe highest number is %d",e);
getch();
}

```

```
}
```

7. program to read 5 different marks of the subjects and print the percentage

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

void main()
{
float a,c,b,d,e,per;
clrscr();
printf("Enter the first mark:");
scanf("%f",&a);
printf("Enter the second mark:");
scanf("%f",&b);
printf("Enter the third mark:");
scanf("%f",&c);
printf("Enter the forth mark:");
scanf("%f",&d);
printf("Enter the fifth mark:");
scanf("%f",&e);
per=(a+b+c+d+e)/5;
printf("\nthe required percentage is %f",per);
getch();
}
```

8. program to solve the quadratic equation

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

void main()
{
int a,b,c,disc,discriminant,x1,x2;
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);
disc=(b*b-4*a*c);
if(disc==0)
printf("Two roots are equal.");
else if(disc<0)
printf("Two roots are unequal and imaginary.");
else
{
printf("Two roots are real.");
discriminant=sqrt(disc);
x1=(-b+discriminant)/2*a;
```

```
        x2=(-b-discriminant)/2*a;
        printf("\nx1=%d, x2=%d",x1,x2);
    }
getch();
}
```

## LAB Sheet solution -3

1. program to prints the day depending upon the number inputted by the user

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

printf("Enter a number that represent the day <0-7>: ");
scanf("%d",&a);
if(a==1)
printf("The day is Sunday");
else if(a==2)
printf("The day is Monday");
else if(a==3)
printf("The day is Tuesday");
else if(a==4)
printf("The day is Wednesday");
else if(a==5)
printf("The day is Thursday");
else if(a==6)
printf("The day is friday");
else if(a==7)
printf("The day is Saturday");
else
printf("Wrong Entry");

getch();
}
```

2. program to prints the day depending upon the number inputted by the user (using switch case)

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

printf("Enter a number that represent the day <0-7>: ");
scanf("%d",&a);

switch(a)
{
case 1:
{
printf("The day is Sunday");
break;
}
case 2:
```

```

{
printf("The day is Monday");
break;
}
case 3:
{
printf("The day is Tuesday");
break;
}

case 4:
{
printf("The day is Wednesday");
break;
}
case 5:
{
printf("The day is Thursday");
break;
}
case 6:
{
printf("The day is friday");
break;
}
case 7:
{
printf("The day is Saturday");
break;
}
default:
printf("Wrong Entry");
}
getch();
}

```

3. program to calculate sum, difference, multiple, division of two numbers.

```

#include<stdio.h>
#include<conio.h>
void main()
{
int choice, a, b;

```

```

printf("menu\n 1. ADD\n 2. Sub\n 3. priod.\n 4. Division\n");
printf(" Enter two numbers:");
scanf("%d %d",&a,&b);
printf("Enter your choice:");
scanf("%d", & choice);
switch(choice)
{
case 1:
{
printf("The sum =%d", a+b);
break;
}

case2:
{
printf("The subtraction is %d", a-b);
break;
}

case 3:
{
printf("The product is %d", a*b);
break;
}

case 4:
{
printf("The division is %d",a/b);
break;
}

default:
printf("wrong choice");
}
getch ();
}

```

4(a) program to print the numbers from 10 & 30 by using for loop

```

#include <stdio.h>
#include <conio.h>
void main()
{
int i;
for (i=10; i<=30; i++)
printf("%d\t", i);
getch();
}

```



4(b) program to print the numbers from 10 & 30 by using while loop

```
#include<stdio.h>
#include<conio.h>
void main ()
{
int i;
i=10;
while(i<=30)
{
printf("%d\t", i);
i=i+1;
}
getch();
}
```

4© program to print the numbers from 10 & 30 by using do while loop

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
i=10;
do
{
printf("%d\t", i);
i++;
}
while(i<=30);
getch();
}
```

5.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i,n,a;
float avg,sum=0;
clrscr();
printf("Enter how many Numbers do u want to Enter\t");
scanf("%d",&n);
printf("Enter the Numbers");
for(i=0;i<n;i++)
{
scanf("%d",&a);
sum=sum+a;
}
avg=sum/n;
printf("The sum is %.2f\nThe average is %.2f",sum,avg);
getch();
}
```

```
}  
6.  
#include<stdio.h>  
#include<conio.h>  
void main()  
{  
int i;  
clrscr();  
for(i=1;i<100;i+=2)  
printf("%d\t",i);  
getch();  
}
```

```
7.  
#include<stdio.h>  
#include<conio.h>  
void main()  
{  
int i=1,sum=0;  
clrscr();  
while(i<=10)  
{  
sum=sum+i;  
i++;  
}  
printf("The sum of first 10 numbers is %d",sum);  
getch();  
}
```

## LAB Sheet Solution -4

1. program to ask dividend and divisor and calculate the quotient and remainder

```
#include<stdio.h>
#include<conio.h>
void main ()
{
int divider, dividend, quot, rem;
char choice;
do
{
printf("Enter dividend and divider:");
scanf("%d %d",& divider, & dividend);
quot= dividend/divider;
rem= dividend %divider;
printf("Quotient=%d\n Remainder=%d", quot, rem);
printf("%s", & choice);
}
while(choice=='y');
getch();
}
```

2. program to find sum of even numbers from 2 to 100

```
#include <stdio.h>
#include<conio.h>
void main()
{
int i, sum=0;
for (i=2;i<=100;i+=2)
sum=sum+i;
printf("The total sum is %d", sum);
getch();
}
```

3. /\* A program to calculate the product of x to the power y \*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int x,y,i, prod=1;
printf("Enter the value of x and y:");
scanf("%d%d", &x, &y);
for (i=1;i<=y; i++)
{
prod=prod*x;
}
printf("The product of x to the power y is %d", prod);
}
```

```
getch();
}
```

4. /\* Program to print the factorial of number(n) entered from keyboard \*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int num=1,n,fact=1;
printf("Enter value of n:");
scanf("%d", &n);
if (n==0)
printf("The factorial is %d", fact);
else
{
for (num=1; num<=n; num++)
{fact=fact*num;
}
printf("The factorial is %d", fact);
}
getch();
}
```

5. /\* A program that checks given number is prime or not.\*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n, num=2;
clrscr();
printf("Enter value of n:");
scanf("%d", &n);
for (num=2; num<=n/2; num++)
{
if (n%num==0)
{
printf("It is not prime");
getch();
exit(0);
}
else;
}
printf("The number is prime");
getch();
}
```

6. /\* A program to generate multiplication table\*/

```

#include<stdio.h>
#include<conio.h>
void main()
{
int i,j;
for (i=1; i<=10; i++)
{
printf("\n");
for(j=1;j<10;j++)
{
printf("%d*%d=%d\n",i,j, i*j);
}
}

getch();
}

```

7. /\* Program to print format according to introduction

```

1
2 3
4 5 6
7 8 9 10

```

```

*/
#include<stdio.h>
#include<conio.h>
void main()
{
int i,j,count=1;
for (i=1; i<=4; i++)
{
for (j=1; j<=i; j++)
{
printf("%d\t", count);
count++;
}
printf("\n");
}
getch();
}

```

8. /\* Program that will print format of \* as question

```
*  
* *  
* * *  
* * * *  
* * * * *
```

```
*/  
#include<stdio.h>  
#include<conio.h>  
void main()  
{  
int i,j;  
clrscr();  
for (i=1; i<=5; i++)  
{  
for (j=1; j<=i; j++)  
printf("*\t");  
printf("\n");  
}  
getch() ;  
}
```

## Lab Sheet -5

1. /\*Program to check whether given character is digit or alphabet or alpha numeric character\*/

```
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
void main()
{
char ch;
ch=getchar();
if (isalpha(ch))
printf("Alphabetic character");
else if (isdigit(ch))
printf("\n Digit Character");
else
printf("It is an alphanumeric");
getch();
}
```

2. /\* Program to accept any number 'n' and print the sum of square of square of all numbers from 1 to n\*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i,n, sum=0;
printf("Enter value of n:");
scanf("%d", &n);
for (i=1; i<=n; i++)
sum=sum+ (i*i);
printf("The required sum is %d", sum);
getch();
}
```

3. /\* Program to accept any number 'n' & print the cube of all numbers from 1 to n which is exactly divisible by 3

\*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i,n;
printf("Enter value of n:");
scanf("%d", &n);
for (i=1; i<=n; i++)
{
if((i%3)==0)
printf("%d\n", i*i*i);
}
getch();
}
```

4. /\* program to print following format

```
*****
*****
****
***
**
*

*/

#include<stdio.h>
#include<conio.h>
void main()
{
int i,j;
for (i=6; i>=1;i--)
{
for (j=1; j<+i; j++)
printf("*\t");
printf("\n");
}
getch();
}
```

5. /\* program to find the leap year between 1900 and 2000\*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
for (i=1900; i<=2000; i++)
{
if ((i%4)==0)
printf("The %d year is leap year\n", i);
}
getch();
}
```

6. /\*Program to check whether given number is Armstrong or not

```
*/

#include<stdio.h>
#include<conio.h>
void main ()
{
int num, i, u,j,k, l, pro;
```



```

printf("Enter any three digit number:");
scanf("%d", &num);
i=num/10;
j=num%10;
k=i/10;
l=i%10;
pro=(j*j*j) + (k*k*k) + (l*l*l);
if (pro==num)
printf("The given num is Armstrong");
else
printf("Not Armstrong");
getch();
}

```

7. /\* program to display following output

```

    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
*/
#include<stdio.h>
#include<conio.h>
void main()
{
int i,j,k;
for (i=1; i<=5; i++)
{
for (k=5; k>=i; k--)
printf("\t");
for (j=1; j<=i; j++)
printf("%d\t\t",i);
printf("\n");
}
getch();
}

```

1. /\*program to generate FIBONACCI number upto nth position\*/

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

void feb();
void main()
{
    feb();
    getch();
}
void feb()
{
    int a=0,b=0,c=1,n,i;
    clrscr();
    printf("Enter the value of n");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        printf("%d\t",c);
        a=b;
        b=c;
        c=a+b;
    }
}
```

2.A /\*program to ask the user for two number and print the sum, difference and product of two numbers

```
*/
// <i> function with out argument, without return type
```

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

void add();
void sub();
void mult();
void main()
{
    clrscr();
    add();
    sub();
    mult();
    getch();
}

void add()
{
    int a,b;
    printf("\nEnter the value of a and b for additon");
    scanf("%d%d",&a,&b);
    printf("The additon is %d",a+b);
}
```

```

}

void sub()
{
int a,b;
printf("\nEnter the value of a and b for subtraction");
scanf("%d%d",&a,&b);
printf("The subtraction is %d",a-b);
}

void mult()
{
int a,b;
printf("\nEnter the value of a and b for multiplication");
scanf("%d%d",&a,&b);
printf("The result of multiplication is %d",a*b);

}

```

2.B /\*program to ask the user for two number and print the sum, difference and product of two numbers

```

*/
// <ii> functin with argument , without return type

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

void add(int ,int );
void sub(int , int );
void mult(int, int);
void main()
{
int a,b;
clrscr();
printf("\nEnter the value of a and b for additon:");
scanf("%d%d",&a,&b);
clrscr();
add(a,b);
sub(a,b);
mult(a,b);
getch();
}

void add(int a,int b)
{
printf("\nThe additon is %d",a+b);
}

void sub(int a,int b)
{
printf("\nThe subtraction is %d",a-b);
}

```

```

void mult(int a,int b)
{
printf("\nThe result of multiplication is %d",a*b);

}

```

2.C /\*program to ask the user for two number and print the sum, difference and product of two numbers  
 \*/// <iii> functin with argument , with return type

```

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

int add(int ,int );
int sub(int , int );
int mult(int, int);
void main()
{
int a,b,sum,diff,pro;
clrscr();
printf("\nEnter the value of a and b for additon:");
scanf("%d%d",&a,&b);
sum=add(a,b);
diff=sub(a,b);
pro=mult(a,b);
printf("\nThe addition is %d\nThe subtraction is %d\nThe multiplication is %d",sum,diff,pro);
getch();
}

```

```

int add(int a,int b)
{
return(a+b);
}

```

```

int sub(int a,int b)
{
return(a-b);
}

```

```

int mult(int a,int b)
{
return(a*b);
}

```

2. D /\*program to ask the user for two number and print the sum, difference and product of two numbers

```

*/
// <iv> functin with out argument , with return type

```

```

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

```

```

int add();
int sub();

```

```

int mult();
void main()
{
    int sum,diff,pro;
    clrscr();

    sum=add();
    diff=sub();
    pro=mult();
    printf("\nThe addition is %d\nThe subtraction is %d\nThe multiplication is %d",sum,diff,pro);
    getch();
}

```

```

int add()
{
    int a,b;
    printf("\nEnter the value of a and b for additon:");
    scanf("%d%d",&a,&b);
    return(a+b);
}

```

```

int sub()
{
    int a,b;
    printf("\nEnter the value of a and b for subtraction:");
    scanf("%d%d",&a,&b);
    return(a-b);
}

```

```

int mult()
{
    int a,b;
    printf("\nEnter the value of a and b for multiplication:");
    scanf("%d%d",&a,&b);
    return(a*b);
}

```

3. /\*program to read two integers a and b and calculate  $(a+b)^3$

```

*/
// by using functin with argument , without return type

```

```

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

```

```

void cube(int ,int );
void main()
{
    int a,b;
    clrscr();
    printf("\nEnter the value of a and b for additon:");
    scanf("%d%d",&a,&b);
    cube(a,b);
    getch();
}

```

```

}

void cube(int a,int b)
{
printf("\nThe cube of (a+b) is %d",(a+b)*(a+b)*(a+b));
}

```

4. /\*program to read integer and find if it is prime or not

```

*/
#include<process.h>
#include<stdio.h>
#include<conio.h>

void prime(int);
void main()
{
int a;
clrscr();
printf("\nEnter the number of ure choice:");
scanf("%d",&a);
prime(a);
getch();
}

```

```

void prime(int a)
{
int i;
for(i=2;i<a/2;i++)
{
if((a%i)==0)
{
printf("\nThe number is not prime");
getch();
exit(1);
}
else;
}
printf("The number is prime");
}

```

5.A /\*program to ask the user for a number and print its cube

```

*/
// <i> functin with out argument , without return type

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

void cube();
void main()

```

```

{
clrscr();
cube();
getch();
}

```

```

void cube()
{
int a;
printf("\nEnter a number");
scanf("%d",&a);
printf("The cube of number is %d",a*a*a);
}

```

5.B /\*program to ask user a number and print its cube

```

*/
// <ii> functin with argument , without return type

```

```

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

```

```

void cube(int);
void main()
{
int a;
clrscr();
printf("\nEnter a number:");
scanf("%d",&a);
cube(a);
getch();
}

```

```

void cube(int a)
{
printf("\nThe cube is %d",a*a*a);
}

```

```

void sub(int a,int b)
{
printf("\nThe subtraction is %d",a-b);
}

```

```

void mult(int a,int b)
{
printf("\nThe result of multiplication is %d",a*b);
}

```

5. C /\*program to ask the user a number and print the cube

```

*/
// <iii> functin with argument , with return type

```

```

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

int cube(int);
void main()
{
    int a,cube1;
    clrscr();
    printf("\nEnter the number:");
    scanf("%d",&a);
    cube1=cube(a);
    printf("\nThe cube of %d is %d",a,cube1);
    getch();
}

```

```

int cube(int a)
{
    return(a*a*a);
}

```

5.D /\*program to ask the user a number and print its cube

```

*/
// <iv> function without argument and with return type

```

```

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

```

```

int cube();
void main()
{
    int cub;
    clrscr();

    cub=cube();
    printf("\nThe cube value is: %d",cub);
    getch();
}

```

```

int cube()
{
    int a;
    printf("\nEnter the number of ure choice:");
    scanf("%d",&a);
    return(a*a*a);
}

```

```

int sub()
{
    int a,b;

```



```
printf("\nEnter the value of a and b for subtraction:");
scanf("%d%d",&a,&b);
return(a-b);
}
```

```
int mult()
{
int a,b;
printf("\nEnter the value of a and b for multiplication:");
scanf("%d%d",&a,&b);
return(a*b);
}
```

6. /\*program to calculate the factorial of a given number using function declaraton

\*/

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

```
void fact();
void main()
{
clrscr();
fact();
getch();
}
```

```
void fact()
{
int i,a,fact=1;
printf("\nEnter a number");
scanf("%d",&a);
if(a<=1)
printf("The fact of %d is %d",a,fact);
else
{
for(i=1;i<=a;i++)
fact=fact*i;
printf("The fact of %d is %d",a,fact);
}
}
```

7. A /\*program to find the square of number from 1 to 25 \*/  
// using function with return type

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

int sq(int );
void main()
{
    int square,i;
    clrscr();

    for(i=1;i<=25;i++)
    {
        square=sq(i);
        printf("\nThe square of %d is %d\n",i,square);
    }

    getch();
}

int sq( int a)
{
    return(a*a);
}
```

7.B /\*program to find the square of number from 1 to 25 \*/  
// using function without return type

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

void sq(int );
void main()
{
    int square,i;
    clrscr();

    for(i=1;i<=25;i++)
    sq(i);
    getch();
}

void sq( int a)
{
    printf("\nThe square is %d\n",a*a);

}
```

## LAB Sheet – 7

1. /\*write the program to find the factorial of n number by using recursive function

```
*/
#include<stdio.h> //header file for i\o operation
#include<conio.h> // header file for getch() operation

int fact(int); //function prototype
void main()
    { //starting of main
    int n,result;
    clrscr();
    printf("Enter the number:");
    scanf("%d",&n);
    result= fact(n); //function call
    printf("The required factorial is %d",result);
    getch(); //pause screen
    } //end of main

int fact(int a)//function defn
    {
    if(a<=1)
    return(1);
    else
    return(a*fact(a-1));

    }
```

2. /\*write the program to find the sum of n number by using recursive function

```
*/
#include<stdio.h> //header file for i\o operation
#include<conio.h> // header file for getch() operation

int sum(int); //function prototype
void main()
    { //starting of main
    int n,result;
    clrscr();
    printf("Enter up to how many number to add:");
    scanf("%d",&n);
    result= sum(n); //function call
    printf("The required sum is %d",result);
    getch(); //pause screen
    } //end of main

int sum(int a)//function defn
    {
    if(a==1)
    return(1);
    else
    return(a+sum(a-1));
```

```
}
```

3. /\*write the program to solve the binomila coefficient

```
*/  
#include<stdio.h> //header file for i\o operation  
#include<conio.h> // header file for getch() operation
```

```
int fact(int); //function prototype  
void main()  
{ //starting of main  
  int n,r,nfac,rfac,difac;  
  float result;  
  clrscr();  
  printf("Enter value of n:");  
  scanf("%d",&n);  
  printf("Enter value of r:");  
  scanf("%d",&r);  
  nfac= fact(n);  
  rfac=fact(r);  
  difac=fact(n-r);  
  result=(nfac/(difac*rfac));  
  printf("The required factorial is %f",result);  
  getch(); //pause screen  
} //end of main
```

```
int fact(int a)//function defn  
{  
  if(a<=1)  
    return(1);  
  else  
    return(a*fact(a-1));  
}
```

3. /\*write the program to read a line and print the text backward using recursive function\*/

```
#include<stdio.h> //header file for i\o operation  
#include<conio.h> // header file for getch() operation
```

```
void reverse();  
void main()  
{  
  printf("Enter a line:");  
  reverse();  
  getch();  
}
```

```
void reverse()  
{  
  char ch;  
  if((ch=getchar())!='\n')
```

```

{
reverse();
}
putchar(ch);
}
5. /* program to check given word palindrome or not*/
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<process.h>
void main()
    {
        char s[10];
        int n,ford,back;
        clrscr();
        printf("Enter a sting :");
        scanf("%s",&s);
        n=strlen(s);
        ford=0;
        back=n-1;
        while(ford<=back)
        {
            if(s[ford]==s[back])
            {
                ford++;
                back--;
            }
            else
            {
                printf("\n Not palindrome");
                getch();
                exit(1);
            }
        }
        printf("\n Palindrome");
        getch();
    }

```

## LAB Sheet – 8

1. /\*proram to enter values in array called myaray of size 15 and display the elements of array

```
*/  
  
#include<stdio.h>  
#include<conio.h>  
#define size 15  
  
void main()  
{  
    int myarray[size],i;  
    printf("Enter the elements for array:");  
    for(i=0;i<15;i++)  
        {  
            scanf("%d",&myarray[i]);  
        }  
    printf("The number in array are :");  
    for(i=0;i<15;i++)  
        printf("%d\t",myarray[i]);  
    getch();  
}
```

2/\*proram to enter values in array called myaray of size 10 and display the sum of elements of array

```
*/  
  
#include<stdio.h>  
#include<conio.h>  
#define size 10  
  
void main()  
{  
    int myarray[size],i,sum=0;  
    clrscr();  
    printf("Enter the elements for array:");  
    for(i=0;i<10;i++)  
        {  
            scanf("%d",&myarray[i]);  
            sum=sum+myarray[i];  
        }  
    printf("The sum of number in array is %d",sum);  
    getch();  
}
```

3. \*proram to find the largest and smallest value in array with average\*/

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

```

#define size 5

void main()
{
    int x[size],i,sum=0,large,small,avg;
    clrscr();
    printf("Enter the elements for array:");
    for(i=0;i<5;i++)
        {
            scanf("%d",&x[i]);
            sum=sum+x[i];
        }
    large=x[0];
    small=x[0];
    for(i=1;i<5;i++)
        {
            if(x[i]>=large)
                large=x[i];
            else if(x[i]<=small)
                small=x[i];
        }
    avg=sum/5;
    printf("The large number is %d\nThe small number is %d\nThe average is %d",large,small,avg);
    getch();
}

```

4. /\*proram to sort the number in ascending order \*/

```

#include<stdio.h>
#include<conio.h>
#define size 5

void main()
{
    int x[size],y,i,j;
    clrscr();
    printf("Enter the elements for array:");
    for(i=0;i<5;i++)
        {
            scanf("%d",&x[i]);
        }
    for(i=0;i<4;i++)
        {
            for(j=i+1;j<5;j++)
                {
                    if(x[i]>x[j])
                        {
                            y=x[i];
                            x[i]=x[j];
                            x[j]=y;
                        }
                }
        }
}

```

```

    }
printf("The number in ascending form is\n");
for(i=0;i<5;i++)
{
    printf("%d\t",x[i]);
}
getch();
}

```

5. /\*proram to sort the number in descending order\*/

```

#include<stdio.h>
#include<conio.h>
#define size 5
void main()
{
    int x[size],y,i,j;
    clrscr();
    printf("Enter the elements for array:");
    for(i=0;i<5;i++)
    {
        scanf("%d",&x[i]);
    }
    for(i=0;i<4;i++)
    {
        for(j=i+1;j<5;j++)
        {
            if(x[i]<x[j])
            {
                y=x[i];
                x[i]=x[j];
                x[j]=y;
            }
        }
    }
    printf("The number in descending form is\n");
    for(i=0;i<5;i++)
    {
        printf("%d\t",x[i]);
    }
    getch();
}

```

6. /\*proram to add the number is two arrays and assign in next array\*/

```

#include<stdio.h>
#include<conio.h>
#define size 5

void main()
{
    int x[size],y[size],z[size],i;
    clrscr();
    printf("Enter the elements for 1st array:");
    for(i=0;i<5;i++)

```



```
{
scanf("%d",&x[i]);
}

printf("Enter the elements for 2nd array:");
for(i=0;i<5;i++)
{
scanf("%d",&y[i]);
}

for(i=0;i<5;i++)
{
z[i]=x[i]+y[i];
}

printf("The number in third array which is sum of 1st and 2nd is\n");
for(i=0;i<5;i++)
{
printf("%d\t",z[i]);
}
getch();
}
```

## LAB Sheet -9

1. /\*program to generate the fibonacci series by using array

```
*/
#include<stdio.h>
#include<conio.h>

void main()
{
int arr[100],a=0,b=0,i,n;
clrscr();
printf("Enter n:");
scanf("%d",&n);
arr[0]=1;
for(i=1;i<n;i++)
{
a=b;
b=arr[i-1];
arr[i]=a+b;
}
printf("The series is \n");
for(i=0;i<n;i++)
printf("%d\t",arr[i]);

getch();
}
```

1.A /\*program to generate the fibonacci series by using array

```
*/
#include<stdio.h>
#include<conio.h>

void main()
{
int arr[100],j,i,n;
clrscr();
printf("Enter n:");
scanf("%d",&n);
arr[0]=1;
arr[1]=1;
for(i=2;i<n;i++)
{
arr[i]=arr[i-2]+arr[i-1];
}
printf("The series is \n");
for(i=0;i<n;i++)
printf("%d\t",arr[i]);

getch();
}
```

2. /\*program to add two matrix called matrix\_a and matrix\_b and put the result in matrix\_c

```

*/
#include<stdio.h>
#include<conio.h>

int r,c,matrix_a[5][5],matrix_b[5][5],matrix_c[5][5];
void read1();
void read2();
void add();
void main()
{
clrscr();
printf("Enter the row of matrix:");
scanf("%d",&r);
printf("Enter the column of matrix:");
scanf("%d",&c);

printf("\nfirst array:\n");
read1();
printf("second array:\n");
read2();
printf("The sum of matrix is \n");
add();
getch();
}

void read1()
{
int i,j;
printf("\nEnter elements");
for(i=0;i<r;i++)
for(j=0;j<c;j++)
scanf("%d",&matrix_a[i][j]);
}

void read2()
{
int i,j;
printf("\nEnter elements");
for(i=0;i<r;i++)
for(j=0;j<c;j++)
scanf("%d",&matrix_b[i][j]);
}

void add()
{
int i,j;
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
matrix_c[i][j]=matrix_a[i][j]+matrix_b[i][j];
printf("%d\t",matrix_c[i][j]);
}
}
printf("\n");
}

```

```

    }
}

```

3. /\*program to transpose the matrix

```

*/
#include<stdio.h>
#include<conio.h>

void main()
{
int mat[5][5],i,j,r,c;
clrscr();
printf("Enter the row of matrix:");
scanf("%d",&r);
printf("Enter the colomn of matrix:");
scanf("%d",&c);

printf("\nEnter elements of array\n");
    for(i=0;i<r;i++)
        for(j=0;j<c;j++)
            scanf("%d",&mat[i][j]);

printf("The transpoe is\n");
    for(i=0;i<r;i++)
        {
            for(j=0;j<c;j++)
                {
                    printf("%d\t",mat[j][i]);
                }
            printf("\n");
        }

getch();
}

```

4. /\*write the program to find the the product of two matrices

```

*/
#include<stdio.h> //header file for i\o operation
#include<conio.h> // header file for getch() operation
#define size 2 //constant declaration

void main()
{ //starting of main
int A[size][size],B[size][size],D[size][size],i,j,k; //variable declaration
clrscr(); //to clear the screen
printf("Enter the element of matrix A of order %d*%d:",size,size);

```

```

for(i=0;i<size;i++)
    { //start of for
    for(j=0;j<size;j++)
        scanf("%d",&A[i][j]);
    } //end of for
printf("Enter the element of matrix B of order %d*%d:",size,size);
for(i=0;i<size;i++)
    { //starting of for
    for(j=0;j<size;j++)
        scanf("%d",&B[i][j]);
    } //end of for

```

//multiplying two matrices and putting result to next matrix

```

for(i=0;i<size;i++)
    {
    for(j=0;j<size;j++)
        {
        D[i][j]=0;
        for(k=0;k<size;k++)
            D[i][j]=D[i][j]+(A[i][k]*B[k][j]);
        }
    }
printf("\nThe product of two matrix is \n");
for(i=0;i<size;i++)
    {
    for(j=0;j<size;j++)
        printf("%d\t",D[i][j]);
    printf("\n");
    }
getch();//pause screen
} //end of main

```

5. /\* program to sort the row of any matrix

\*/

```

#include<stdio.h>
#include<conio.h>
void main()
{
int i,j,k,r,c,temp,a[5][5];
clrscr();

printf("Enter the order of matrix:");
scanf("%d%d",&r,&c);

printf("Enter the element : ");
for(i=0;i<r;i++)

```

```

for(j=0;j<c;j++)
    scanf("%d",&a[i][j]);

clrscr();
printf("The element of matrix you have entered is \n");
for(i=0;i<r;i++)
{
    printf("\n");
    for(j=0;j<c;j++)
    {
        printf("%d\t",a[i][j]);
    }
}

for(i=0;i<c;i++)
{
    for(j=0;j<r-1;j++)
    {
        for(k=j+1;k<r;k++)
        {
            if(a[j][i]>a[k][i])
            {
                temp=a[j][i];
                a[j][i]=a[k][i];
                a[k][i]=temp;
            }
        }
    }
}
printf("\n\nThe Result is :\n\n");
for(i=0;i<r;i++)
{ printf("\n");
for(j=0;j<c;j++)
{
    printf("%d\t",a[i][j]);
}
}
getch();
}

6. /*program to evaluate to following polynomial eqn
    
$$p(x)=a_0x^0+a_1x^1+a_2x^2+\dots+a_{n-1}x^{n-1}+a_nx^n$$

*/
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int a[30],i,n,x,temp,result=0;
clrscr();
printf("Enter the value of n ");
scanf("%d",&n);
printf("Enter the value of x ");

```

```

scanf("%d",&x);

printf("Enter the value of a\n");

for(i=0;i<n;i++)
    scanf("%d",&a[i]);

for(i=0;i<n;i++)
    {
    temp=pow(x,i);
    result=result+(a[i]*temp);
    }
    printf("The result is %d",result);
    getch();
}

```

7. A /\*program to print the given format \*/

```

#include<stdio.h>
#include<conio.h>
void main()
{
int i,d;
char a[5]="kanti";
clrscr();
printf("-----\n");
for(i=0;i<5;i++)
{
d=i+1;
printf("|%-5.*s|\n",d,a);
}
printf("-----\n");
for(i=4;i>=0;i--)
{
d=i+1;
printf("|%-5.*s|\n",d,a);
}
printf("-----\n");
getch();
}

```

7. B /\*program to print the given format

```

*/
#include<stdio.h>
#include<conio.h>
void main()
{
int i,d;
char a[5]="kanti";
clrscr();
printf("-----\n");
for(i=0;i<5;i++)

```

```

{
d=i+1;
printf("|%5.*s|\n",d,a);
}
printf("-----\n");
for(i=4;i>=0;i--)
{
d=i+1;
printf("|%5.*s|\n",d,a);
}
printf("-----\n");

getch();
}

```

7. C /\*program to print the given format

```

*/

#include<stdio.h>
#include<conio.h>
void main()
{
int i,d;
char a[5]="kanti";
clrscr();
printf("|-----|\n");
for(i=0;i<5;i++)
{
d=i+1;
printf("|%-5.*s | %5.*s|\n",d,a,d,a);
}
printf("|-----|\n");

getch();
}

```

7. D /\*program to print the given format

```

*/

#include<stdio.h>
#include<conio.h>
void main()
{
int i,d;
char a[5]="kanti";
clrscr();
printf("|-----|\n");
for(i=4;i>=0;i--)
{
d=i+1;
printf("|%-5.*s | %5.*s|\n",d,a,d,a);
}

```



```
printf("|-----|\n");
getch();
}
```

7.E /\*program to print the given format

\*/

```
#include<stdio.h>
#include<conio.h>
void main()
{
int i,d;
char a[5]="kanti";
clrscr();
printf("|-----|\n");
for(i=0;i<5;i++)
{
d=i+1;
printf("|%-5.*s | %5.*s|\n",d,a,d,a);
}
printf("|-----|\n");
for(i=4;i>=0;i--)
{
d=i+1;
printf("|%-5.*s | %5.*s|\n",d,a,d,a);
}
printf("|-----|\n");
getch();
}
```

## LAB Sheet -10

1. /\*program to define a structure tupe, struct personal, that would contain person name, address, phone number, date ofjoining and salary. Using the structure WAP to read this information for one person from the keyboard & print the same on the screen\*/

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

struct personal
{
    char name[20],add[20];
    long int phone,salary;
    int date,month,year;
}list;
void main()
{
    clrscr();
    printf("Enter the name of the person:");
    scanf("%s",&list.name);
    printf("Enter the address of the person:");
    scanf("%s",&list.add);
    printf("Enter the phone of the person:");
    scanf("%ld",&list.phone);
    printf("Enter the date of joining of the person:");
    printf("\nDate:");
    scanf("%d",&list.date);
    printf("Month:");
    scanf("%d",&list.month);
    printf("Year:");
    scanf("%d",&list.year);
    printf("Enter the salary of the person:");
    scanf("%ld",&list.salary);

    //printing the result
    printf("\nThe record of the person is as follow:\n");
    printf(" name\t address\t phone\t date\t\t salary\n");
    printf("%s\t %s\t %ld\t %d %d %d\t %ld",list.name,list.add,list.phone,list.year,list.month,list.date,list.salary);
    getch();
}
```

2. /\*program to define a structure 'struct',that describes attributes like (1) char firstname[20],(2) char lastname[20], (3) ubt rollno, & (4) float persentage. using this structure, declare array of 3 student & WAP to read the informatin about each student & calculate teh average Percentage \*/

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

```

struct student
{
    char firstname[20],lastname[20];
    int rollno;
    int per;
}list[3];

void print(struct student a){
    printf("\n%s\t%s",a.firstname,a.lastname);
    printf("\n%d\n%d",a.rollno,a.per);
}

void main()
{
    int i;
    float avg=0.0;
    clrscr();
    for(i=0;i<3;i++)
    {
        printf("Enter the first name of %d student:",i+1);
        scanf("%s",list[i].firstname);
        printf("Enter the last name of %d student:",i+1);
        scanf("%s",list[i].lastname);
        printf("Enter the roll of %d student:",i+1);
        scanf("%d",&list[i].rollno);
        printf("Enter the percentage of student:");
        scanf("%d",&list[i].per);
        avg=avg+(float)list[i].per;
    }
    printf("\n\n");
    for(i=0;i<3;i++)
        print(list[i]);
    printf("\n The average percentage is %f",avg/3);
    getch();
}

```

3. /\*a point has x-axis & y-axis. define a struct called point with suitable wap to accepts two points form the user & calculate the distance between the two points  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ \*/

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
struct point
{
    float x1,x2,y1,y2;
}list;

```

```

void main()
{
float a,b,c,dis;
clrscr();
printf("Enter the coordinate of first point:\n");
printf("X-coordinate:");
scanf("%f",&list.x1);
printf("Y-coordinate:");
scanf("%f",&list.y1);

printf("Enter the coordinate of second point:\n");
printf("X-coordinate:");
scanf("%f",&list.x2);
printf("Y-coordinate:");
scanf("%f",&list.y2);
a=(list.x2-list.x1);
b=(list.y2-list.y1);
c=a*a+b*b;
dis=sqrt(c);
printf("The distance is %f",dis);
getch();
}

```

4. /\*program to define a structure called 'Time' with suitable members, and read stwo 'times' from user and perform operations like addition and subtraction between these times by using switch case \*/

```

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

struct time
{
int hrs,min,sec;
}list[2];

void main()
{
int i,choice,exhrs=0,exmin=0,adsec,admin,adhrs,subsec,submin,subhrs;
char what;
do
{
clrscr();
fflush(stdin);
for(i=0;i<2;i++)
{
printf("Enter the %d time\n",i+1);
printf("Hours:");
scanf("%d",&list[i].hrs);
printf("Minutes:");
scanf("%d",&list[i].min);
printf("Seconds:");
scanf("%d",&list[i].sec);

```

```

}

printf("\nHere is the menu\n");
printf("1 Add the time\n2 Subtract the time\n3 Exit the program");
printf("\n\nEnter ure choice:");
scanf("%d",&choice);

switch (choice)
{
case 1:
{
adsec=list[0].sec+list[1].sec;
if(adsec>59)
{
exmin++;
adsec=adsec-60;
}
admin=list[0].min+list[1].min+exmin;
if(admin>59)
{
exhrs++;
admin=admin-60;
}
adhrs=list[0].hrs+list[1].hrs+exhrs;
//printing the result
printf("The calculated result is: \n ");
printf("Hours=%d\tMinutes=%d\tSeconds=%d\n",adhrs,admin,adsec);
break;
}

case 2:
{
if(list[1].hrs>list[0].hrs)
{
if(list[1].sec<list[0].sec)
{
list[1].sec=list[1].sec+60;
list[1].min=list[1].min-1;
}
subsec=list[1].sec-list[0].sec;

if(list[1].min<list[0].min)
{
list[1].min=list[1].min+60;
list[1].hrs=list[1].hrs-1;
}
submin=list[1].min-list[0].min;
subhrs=list[1].hrs-list[0].hrs;
} //end of if

else
{
if(list[0].sec<list[1].sec)
{

```

```

        list[0].sec=list[0].sec+60;
        list[0].min=list[0].min-1;
        }
        subsec=list[0].sec-list[1].sec;

        if(list[0].min<list[1].min)
        {
        list[0].min=list[0].min+60;
        list[0].hrs=list[0].hrs-1;
        }
        submin=list[0].min-list[1].min;
        subhrs=list[0].hrs-list[1].hrs;
        }//end of else
printf("The calculated result is: \n ");
printf("Hours=%d\tMinutes=%d\tSeconds=%d\n",subhrs,submin,subsec);
break;
}

case 3:
exit(0);

default:
printf("Wrong choice in number");

}
printf("Calculate again? 'y' or 'n'");
scanf("%s",&what);
} while(what!='n');

}

```

1. /\* program to accept 10 numbers and sort them with the use of pointer

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

void sort(int *a, int *b);
void main()
{
    int arr[10],i,j,*p;

    printf("Enter the elements of the array:");
    for(i=0;i<10;i++)
        scanf("%d",&arr[i]);

    for(i=0;i<9;i++)
        for(j=i+1;j<10;j++)
            if(arr[i]>arr[j])
                sort(&arr[i],&arr[j]);

    //printing the result
    for(i=0;i<10;i++)
        printf("%d\t",arr[i]);
    getch();
}

void sort(int *a, int *b)
{
    int temp;
    temp=*a;
    *a=*b;
    *b=temp;
}
```

2. /\* program to clear the concept of swapping using pointer

```
*/
#include<stdio.h>
#include<conio.h>

void swap(int *,int *);

void main()
{
    int i,j;
    clrscr();
    printf("Enter the value of i:");
    scanf("%d",&i);
    printf("Enter the value of j:");
    scanf("%d",&j);
    printf("The value of i and j before swapping is %d & %d",i,j);
```

```

        swap(&i,&j);
        printf("\nThe value of i and j after swapping is %d & %d",i,j);
        getch();
    }
void swap(int *i,int *j)
{
int temp;
temp=*i;
*i=*j;
*j=temp;
}

```

3. /\* program to accept 10 no and print the total with the use of pointer \*/

```

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

void main()
{
int arr[10],i,*p;
clrscr();
p=&arr[0];
//p=arr;

printf("enter the 10 numbers:");
for(i=0;i<10;i++)
scanf("%d",&arr[i]);

printf("\n");
for(i=0;i<10;i++)
{
printf("%d\t",*p);
p=p+1;
}
getch();
}

```

4. /\* program to test the word palindrome \*/

```

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

void main()
{
char x[20],x1[20];
clrscr();

printf("enter the word:");
scanf("%s",&x);
strcpy(x1,x);
strrev(x1);

```



```

if(strcmp(x,x1)==0)
printf("The word is palindrome");
else
printf("The word is not palindrome");

getch();
}

```

5. /\* program to count the vowel in string \*/

```

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

void main()
{
char x[20];
int temp=0,i;
clrscr();

printf("enter the word:");
scanf("%s",&x);

for(i=0;x[i]!='\0';i++)
{
if((x[i]=='a')||(x[i]=='e')||(x[i]=='i')||(x[i]=='o')||(x[i]=='u'))
temp++;
}
printf("The number of vowel is %d",temp);

getch();
}

```

6. /\*program to change the lower case character to uppercase\*/

```

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

char character(char *);
void main()
{
char x[20];
char *p;
int i;
clrscr();
p=x;
printf("Enter the string in lower case:");
scanf("%[^\n]",&x);//to scan the strings with space

for(i=0;*p!='\0';i++)

```

```
    {
      x[i]=character(p);
      p++;
    }
printf("The changed case of given string is %s", x);
getch();
}
```

```
char character(char *q)
{
  return(toupper(*q));
}
```

1. /\*program to accept name, grade, code of person and sort them on the basis of code\*/

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

struct person
{
    char name[20];
    int grade;
    int code;
}x[20],temp;

//struct person temp;
void main()
{
    int i,j;
    clrscr();

    for(i=0;i<5;i++)
    {
        printf("Enter the name of the %d student:",i+1);
        scanf("%s",&x[i].name);

        printf("Enter the grade of the %d student(1,2,3,4,5):",i+1);
        scanf("%d",&x[i].grade);

        printf("Enter the code of the %d student:",i+1);
        scanf("%d",&x[i].code);
    }

    for(i=0;i<4;i++)
    {
        for(j=i+1;j<5;j++)
        {
            if(x[i].code>x[j].code)
            {
                temp=x[i];
                x[i]=x[j];
                x[j]=temp;
            }
        }
    }

    printf("\n The required result after swap is \n");
    printf(".....");
    printf("\nName\tGrade\tCode\n");
    for(i=0;i<5;i++)
    {
        printf("%s\t%d\t%d\n",x[i].name,x[i].grade,x[i].code);
    }
    getch();
}
```

2. /\*program to accept name, age and address of person and display the name of oldest person\*/

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

struct person
{
    char name[20],add[20];
    int age;
}x[20];

void main()
{
    int i,j,n,tempage;
    char temp[20];
    clrscr();
    printf("Enter how many person would you like to enter:");
    scanf("%d",&n);

    for(i=0;i<n;i++)
    {
        printf("Enter the name of the %d person:",i+1);
        scanf("%s",&x[i].name);

        printf("Enter the address of the %d person:",i+1);
        scanf("%s",&x[i].add);

        fflush(stdin);//to clear buffer

        printf("Enter the age of the %d person:",i+1);
        scanf("%d",&x[i].age);
    }

    for(i=0;i<n-1;i++)
    {
        for(j=i+1;j<n;j++)
        {
            if(x[i].age>x[j].age)
            {
                strcpy(temp,x[i].name);
                tempage=x[i].age;
                strcpy(x[i].name,x[j].name);
                strcpy(x[j].name,temp);
            }
        }
    }

    printf("The oldest person in the data is %s and his\her age is %d",temp,tempage);
    getch();
}
```

3. /\*program to accept information of a book\*/

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

struct book
{
    char author[20],title[30],pub[30];
    float price;
}x;

//struct person temp;
void main()
{
    clrscr();
    printf("Enter the title of the book:");
    scanf("%s",&x.title);

    printf("Enter the author of the book:");
    scanf("%s",&x.author);

    printf("Enter the publisher of the book:");
    scanf("%s",&x.pub);

    printf("Enter the price of the book:");
    scanf("%f",&x.price);

    printf("\nHere is the information you have typed\n");

    printf("%s\t%s\t%s\t%f\n",x.title,x.author,x.pub,x.price);
    getch();
}
```

4. /\*write the program to find the following calculation  
 $1/1!+2/2!+3/3!+4/4!+5/5!$

```
*/

#include<stdio.h> //header file for i\o operation
#include<conio.h> // header file for getch() operation

float fact(float); //function prototype
void main()
{ //starting of main
    int i;
    float sum=0.00;
    clrscr();
    for(i=1;i<=5;i++)
    {
        sum=sum+i/fact(i);
    }
}
```

```
printf("The result is %f",sum);  
getch(); //pause screen  
} //end of main
```

```
float fact(float a)//function defn  
{  
if(a<=1)  
return(1);  
else  
return(a*fact(a-1));  
}
```