**Practical No.1:**

**Write a ‘C’ program using constants, variables and arithmetic expressions.**

1. **Variable:**

#include<stdio.h>

#include<conio.h>

void main()

{

int a;

printf(“Enter value of a”);

scanf(“%d”,&a);

printf(“The value of a is %d”, a);

getch();

}

1. **Constant:**

#include<stdio.h>

#include<conio.h>

void main()

{

int a=5;

printf(“The value of a is %d”, a);

getch();

}

1. **Arithmetic Expressions:**

#include<stdio.h>

#include<conio.h>

void main()

{

int a,b,c;

printf(“enter value of a and b”);

scanf(“%d%d”,&a,&b);

c=a+b;

printf(“addition is %d”,c);

c=a-b;

printf(“subtraction is %d”,c);

c=a+b;

printf(“multiplication is %d”,c);

c=a+b;

printf(“division is %d”,c);

getch();

}

**Practical No-2 Increment decrement operators:**

#include<stdio.h>

#include<conio.h>

void main()

{

int a=5;

printf(“ pre-increment=%d”,++a);

printf(“ post-increment=%d”,a++);

printf(“ pre-decrement=%d”,--a);

printf(“ post-increment=%d”,a--);

getch()

}

**Practical No-5:**

1. **Positive-Nagative using if-else program**

#include<stdio.h>

#include<conio.h>

void main()

{

int n;

clrscr();

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

scanf("%d", &n);

if(n>0)

{

printf("\n POSITIVE");

}

else

{

printf("\n NEGATIVE");

}

getc();

}

1. **Even-odd using if-else program**

#include<stdio.h>

#include<conio.h>

void main()

{

int n;

clrscr();

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

scanf("%d", &n);

if(n%2==0)

{

printf("\n EVEN");

}

else

{

printf("\n ODD");

}

getc();

}

**Practical No.6:**

1. **Greatest of three numbers using nested if-else**

#include<stdio.h>

#include<conio.h>

void main()

{

int a,b,c;

clrscr();

printf("\n Enter value of a ,b and c:");

scanf("%d %d %d", &a, &b, &c);

if(a>b)

{

if(a>c)

{

printf(" \n a is greater");

}

else

{

printf(" \n c is greater");

}

}

else

{

printf("\n b is greater");

}

getch();

}

**Practical No.7:**

**Display days of week using switch case**.

#include<stdio.h>

#include<conio.h>

void main()

{

int weekday;

printf("\n Enter your choice:");

scanf("%d", &weekday);

switch(weekday)

{

case 1:

pritnf("\n Monday");

break;

case 2:

printf("\n Tuesday");

break;

case 3:

printf("\n Wednesday");

break;

case 4:

printf("\n Thursday");

break;

case 5:

printf("\n Friday");

break;

case 6:

printf("\n Saturday");

break;

case 7:

printf("\n sunday");

break;

default:

printf("\n Invalid choice");

}

getch();

}

**Practical No.9**

**Sum of digits of given number using while loop**

#include<stdio.h>

#include<conio.h>

void main()

**{**

int i, n, rem, sum=0;

printf(“enter the number”);

scanf(“%d”,&n);

while(n>0)

{

rem=n%10;

sum=sum+rem;

printf(“%d”,sum);

n=n/10;

}

getch();

**}**

**Practical No.10**

**Multiplication table using do while loop**

#include<stdio.h>

#include<conio.h>

void main()

{

int i=1, m, n;

clrscr();

printf("\Enter number:");

scanf("%d",&n);

do

{

m=n\*i;

printf("\n %d", m);

}while(i<=10);

getch();

}

**Practical No.11**

**Fibonacci Series Using for loop**

#include <stdio.h>

void main()

{

int n, n1 = 0, n2 = 1, next, i;

printf("Enter the number of terms: ");

scanf("%d", &n);

printf("The first %d terms of the Fibonacci series are: \n", n);

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

{

if (i <= 1)

next = i;

else

{

next = n1 + n2;

n1 = n2;

n2 = next;

}

printf("%d\n", next);

}

getch();

**}**

**Practical No.13**

1. **Displaying smaller and greater number in an array.**

#include<stdio.h>

#include<conio.h>

Void main()

{

int a[10],i,n,min,max;

printf("Enter size of the array : ");

scanf("%d",&n);

printf("Enter elements in array : ");

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

{

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

}

min=max=a[0];

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

{

if(min>a[i])

min=a[i];

if(max<a[i])

max=a[i];

}

printf("minimum of array is : %d",min);

printf("\nmaximum of array is : %d",max);

getch();

}

1. **C program for displaying sum of array elements.**

#include<stdio.h>

#include <conio.h>

int main()

{

    int a[10],i,n,sum=0;

    printf("Enter size of the array : ");

    scanf("%d",&n);

    printf("Enter elements in array : ");

    for(i=0; i<n; i++)

    {

        scanf("%d",&a[i]);

    }

    for(i=0; i<n; i++)

    {

        sum+=a[i];

    }

     printf("sum of array is : %d",sum);

    getch();

}

**Practical No. 14**

1. **C program for performing addition of 3\*3 matrix.**

#include<stdio.h>  
#include<conio.h>  
void main(void)  
{  
int m1[3][3],m2[3][3],add[3][3],i,j;  
clrscr();  
printf("Enter first matrix elements(any 9 numbers)\n");  
for(i=0;i<3;i++)  
{  
for(j=0;j<3;j++)  
{  
scanf("%d",&m1[i][j]);  
}  
}  
printf("Enter second matrix elements(any 9 numbers)\n");  
for(i=0;i<3;i++)  
{  
for(j=0;j<3;j++)  
{  
scanf("%d",&m2[i][j]);  
}  
}  
printf("Resultant matrix is as follows\n");  
for(i=0;i<3;i++)  
{  
for(j=0;j<3;j++)  
{  
add[i][j]=m1[i][j]+m2[i][j];  
printf("%d ",add[i][j]);  
}  
printf("\n");  
}  
getch();  
}

1. **C program for finding transpose of given matrix**

#include <stdio.h>

int main(){

int m, n, i, j, matrix[10][10], transpose[10][10];

printf("Enter rows and columns :");

scanf("%d%d", &m, &n);

printf("Enter elements of the matrix  
");

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

      for (j = 0; j < n; j++)

         scanf("%d", &matrix[i][j]);

   for (i = 0;i < m;i++)

      for (j = 0; j < n; j++)

         transpose[j][i] = matrix[i][j];

   printf("Transpose of the matrix:  
");

   for (i = 0; i< n; i++) {

      for (j = 0; j < m; j++)

         printf("%d\t", transpose[i][j]);

      printf("  
");

   }

   return 0;

}

**Practical No. 15**

1. **C program for displaying a reverse of input string**

#include <stdio.h>

#include <string.h>

int main()

{

   char s[100];

   printf("Enter a string to reverse\n");

   gets(s);

   strrev(s);

   printf("Reverse of the string: %s\n", s);

   return 0;

}

1. **C program for checking whether a given string is palindrome or not.**

#include <stdio.h>

#include <string.h>

**void** main()

{

**char** str[] = { "abbba" };

**int** l = 0;

**int** h = **strlen**(str) - 1;

**while** (h > l) {

**if** (str[l++] != str[h--]) {

**printf**("%s is not a palindrome\n", str);

**return** 0;

        }

    }

**printf**("%s is a palindrome\n", str);

**getch()**;

}

**Practical No. 16**

**Write a C program for counting vowels present in a given string.**

#include <stdio.h>

#include <conio.h>

void main()

{

char a[100];

int len,i,vow=0;

clrscr();

printf("\nENTER A STRING: ");

gets(a);

len=strlen(a);

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

{

if(a[i]=='a' || a[i]=='A' || a[i]=='e' || a[i]=='E' || a[i]=='i' || a[i]=='I' || a[i]=='o' || a[i]=='O' || a[i]=='u' || a[i]=='U')

vow=vow+1;

}

printf("\nTHERE ARE %d VOWELS IN THE STRING",vow);

getch();

}

**Practical No. 17**

**Program for creating a structure viz. name, rollno, address and mobile no.**

#include <stdio.h>

struct student {

char name[50];

int roll;

char address[50];

int mobile;

} s;

void main() {

printf("Enter information:\n");

printf("Enter name: ");

scanf(“%s”, &s.name);

printf("Enter roll number: ");

scanf("%d", &s.roll);

printf("Enter address: ");

scanf("%s", &s.address);

printf("Enter mobile number: ");

scanf("%d", &s.mobile);

printf("Displaying Information:\n");

printf("Name: ");

printf("%s", s.name);

printf("Roll number: %d\n", s.roll);

printf(“Address: %s\n", s.address);

printf("Mobile: %.d\n", s.mobile);

getch();

}

**Practical No.18**

**Program for creating structure Employee to hold details viz.name, designation, id, and salary of 3 employee for comparing.**

#include <stdio.h>

/\*structure declaration\*/

struct employee{

char name[30];

int Id;

float salary;

}emp[3];

int main()

{

/\*declare structure variable\*/

struct employee emp;

/\*read employee details\*/

printf("\nEnter details :\n");

for(i=0;i<3;i++)

{

printf("Name ?:");

scanf(“%s”,emp[i].name);

printf("ID ?:");

scanf("%d", &emp[i].Id);

printf("Salary ?:");

scanf("%f", &emp[i].salary);

}

/\*print employee details\*/

printf("\nEntered detail is:");

for(i=0;i<3;i++)

{

printf("Name: %s" ,emp[i].name);

printf("Id: %d" ,emp[i].Id);

printf("Salary: %f\n",emp[i].salary);

}

return 0;

}

**Practical No.19**

**C Program for using all string handling functions**

#include<stdio.h>

#include<string.h>

int main()

{

char a[10], b[10];

int ch, len;

printf("enter str1 ");

scanf("%s",a);

printf("enter str2 ");

scanf("%s",b);

printf("\n choose ur option");

printf("\n 1.length\n 2.compare\n 3.copy\n 4.concat\n");

printf("enter ur choice: ");

scanf("%d",&ch);

switch(ch)

{

case 1: len=strlen(a);

printf("length is %d\n",len);

break;

case 2:if(strcmp(a,b)==0)

{

printf("both strings are equal\n");

}

else

if (strcmp(a, b)>0)

printf("%s is greater than %s\n",a,b);

else

printf("%s is greater than %s\n",b,a);

break;

case 3: printf(" str1 %s\n",a);

printf("str2 %s\n",b);

strcpy(a,b);

printf("after copy strings are\n");

printf(" str1 %s\n",a);

printf("str2 %s\n",b);

break;

case 4: printf(" str1 %s\n",a);

printf("str2 %s\n",b);

strcat(a,b);

printf(" str1 %s\n",a);

break;

}

}

**Practical No. 20**

1. **Program for adding two numbers using add() function.**

#include<stdio.h>

 void sum(int num1, int num2);

void main() {

   int num1, num2, res;

   printf("\nEnter the two numbers : ");

   scanf("%d %d", &num1, &num2);

   sum(num1, num2);

   printf("nAddition of two number is : ");

getch();

}

void sum(int num1, int num2) {

   int num3;

   num3 = num1 + num2;

printf(“ %d”,num3);

}

1. **C program using function for checking a given number prime or not.**

#include<stdio.h>

int check\_prime(int);

main()

{

int n, result;

printf("Enter an integer to check whether it is prime or not.\n");

scanf("%d",&n);

result = check\_prime(n);

if ( result == 1 )

printf("%d is prime.\n", n);

else

printf("%d is not prime.\n", n);

return 0;

}

int check\_prime(int a)

{

int c;

for ( c = 2 ; c <= a - 1 ; c++ )

{

if ( a%c == 0 )

return 0;

}

return 1;

}

**Practical No. 21**

1. **C program using recursive function for displaying factorial of a number.**

void factorial();

int fact=1,n;

void main()

{

printf(“enter number”);

scanf(“%d”,&n);

factorial();

getch();

}

void factorial()

{

if(n>0)

{

fact=fact\*n;

n--;

factorial();

}

}

1. **C program using recursive function for displaying Fibonacci series.**

#include<stdio.h>

**int** fib(**int** n);

**Void** main ()

{

**int** n = 9;

**printf**("%d", fib(n));

**getch**();

**}**

**int** fib(**int** n)

{

**int** a = 0, b = 1, c, i;

**if**( n == 0)

**return** a;

**for** (i = 2; i <= n; i++)

  {

     c = a + b;

     a = b;

     b = c;

  }

**return** b;

}

**Practical No. 22**

**C program using pointers for printing values of variables and their addresses**

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

int  a ;  
int  \*p ;  
printf(" Enter any integer: ") ;  
scanf("%d ",& a) ;  
p = &a ;  
  
printf("\n Value of Integer : %d ",a) ;  
printf("\n Value of Integer : %d ",\*p) ;  
printf("\n Value of Integer : %d ",\*(&a)) ;  
printf("\n Address of Integer : %u ",p) ;  
printf("\n Address of Integer : %u ",&a) ;  
getch();

}

**Practical No.23**

**C program using pointers for performing basic arithmetic operations using pointer**

#include<stdio.h>

int main ()

{

int a = 30, b = 10, \*p1, \*p2, C;

p1 = &a;

p2 = &b;

C = \*p1 + \*p2;

printf ("Addition of two numbers = %d\n", C);

C = \*p1 - \*p2;

printf ("Subtraction of two numbers = %d\n", C);

C = \*p1 / \*p2;

printf ("Division of two numbers = %d\n", C);

C=\*p++

printf ("Postincrement= %d\n", C);

C=++\*p

printf ("Preincrement= %d\n", C);

C=\*p--

printf ("Postdencrement= %d\n", C);

C=--\*p

printf ("Predecrement= %d\n", C);

return 0;

}