**Lab- 1**

1.Write a program to check whether a number is prime or not.

#include<stdio.h>

void main()

{

int i,n,flag=0;

printf("Enter Value");

scanf("%d",&n);

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

if(n%i==0)

{

flag++;

}

if(flag == 2)

{

printf("no is prime:%d",n);

}

else

{

printf("no is not prime:%d",n);

}

}

2.Write a program to find factorial of a number. (Using Loop).

#include<stdio.h>

void main()

{

int n,i,fact=1;

printf("Enter Number");

scanf("%d",&n);

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

{

fact=fact\*i;

}

printf("Factorial Is:%d",fact);

}

3.Write a program to find factorial of a number. (Using Recursion).

#include<stdio.h>

int main()

{

int n;

printf("Enter Value");

scanf("%d",&n);

printf("Fact Is: %d = %ld",n,fun(n));

}

int fun(int n)

{

if(n>=1)

{

return n\*fun(n-1);

}

else

{

return 1;

}

}

**Lab - 2**

4.Read n numbers in an array and print their sum.

#include<stdio.h>

void main()

{

int n,i,sum=0;

printf("Enter Size");

scanf("%d",&n);

int a[n];

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

{

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

}

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

{

sum+=a[i];

}

printf("%d",sum);

}

5.Readn numbers in an array and print it in ascending order.

#include<stdio.h>

void main(){

int i,n,j,swap = 0;

printf("Enter Size");

scanf("%d",&n);

int a[n],b[n];

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

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

}

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

{

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

{

if(a[i] > a[j])

{

swap = a[i];

a[i] = a[j];

a[j] = swap;

}

}

}

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

printf("%d\n",a[i]);

}

}

6.Read two character arrays from user and append them one after other in third array and print final array.

#include<stdio.h>

void main()

{

int i,j=0,n1,n2;

printf("Enter Size For First Element:");

scanf("%d",&n1);

printf("Enter Size For Second Element:");

scanf("%d",&n2);

int a[n1],b[n2];

int n3 = 0;

n3 = n1 + n2;

int c[n3];

printf("Enter Value for Array 1:");

for(i=0;i<n1;i++){

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

c[i] = a[i];

}

printf("Enter Value for Array 2:");

for(j=i;j<n3;j++){

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

c[j] = a[j];

}

printf("Ans Is:");

for(i=0;i<n3;i++){

printf("%d\n",c[i]);

}

}

7.Read n numbers in an array then read two different numbers, replace 1st number with2nd number in an array and print its index and final array.

#include<stdio.h>

void main()

{

int i,j=0,n1,n2,n,flag = 0;

printf("Enter Size:");

scanf("%d",&n);

int a[n];

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

printf("Enter Value:");

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

}

printf("Enter Find Value");

scanf("%d",&n1);

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

if(a[i] == n1){

flag++;

break;

}

}

if(flag==0){

printf("Enter Proper value:\n");

}

else

{

printf("Enter Replace Value");

scanf("%d",&n2);

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

if(a[i] == n1){

a[i] = n2;

j = i;

printf("Index is%d\n",j);

j = 0;

}

}

printf("Ans Is:\n");

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

printf("Value Is:%d\n",a[i]);

}

}

}

**Lab - 3**

8.Read two 2x2 matrices and perform addition of matrices into third matrix and print it.

#include<stdio.h>

void main(){

int i,j,a[100][100],r,c,b[100][100];

int c1[200][200];

printf("Enter row:\n");

scanf("%d",&r);

printf("Enter column:\n");

scanf("%d",&c);

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

{

for(j=0;j<c;j++)

{

printf("Enter Value:\n");

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

}

}

printf("Enter Second Matrix:\n");

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

{

for(j=0;j<c;j++)

{

printf("Enter Value:\n");

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

}

}

printf("First Matrix:\n");

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

{

for(j=0;j<c;j++)

{

c1[i][j]=a[i][j] + b[i][j];

}

}

printf("Ans Is:");

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

{

for(j=0;j<c;j++)

{

printf("%d\n",c1[i][j]);

}

}

}

9.Read two matrices, first 3x2 and second 2x3, perform multiplication operation and store result in third matrix and print it.

#include<stdio.h>

#include<stdlib.h>

void main(){

system("cls");

int i,j,k=0,r,c,r1,c1;

printf("Enter row:");

scanf("%d",&r);

printf("Enter col:");

scanf("%d",&c);

int a[r][c];

printf("Enter Array value for A:\n");

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

{

for(j=0;j<c;j++)

{

printf("Enter Element:");

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

}

}

printf("Enter row:");

scanf("%d",&r1);

printf("Enter col:");

scanf("%d",&c1);

int b[r1][c1];

if(c != r1)

{

printf("Not Possible!!!");

}

else

{

printf("Enter Array value for B:\n");

for(i=0;i<r1;i++)

{

for(j=0;j<c1;j++)

{

printf("Enter Element:");

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

}

}

int mul[r][c1];

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

{

for(j=0;j<c1;j++)

{

mul[i][j]=0;

for(k=0;k<c;k++)

{

mul[i][j]+= a[i][k]\*b[k][j];

}

}

}

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

{

for(j=0;j<c1;j++)

{

printf("%d ",mul[i][j]);

}

printf("\n");

}

}

}

**Lab - 4**

10.Read n numbers in an array and print it using pointer.

#include <stdio.h>

void main() {

int n,i;

printf("Enter size");

scanf("%d",&n);

int arr[n];

int \*ptr = arr;

printf("Enter elements: ");

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

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

}

printf("Elements Are: \n");

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

printf("%d ",ptr[i]);

}

}

11.Write a C program to swap two numbers using user define function. (Use concept of Call by Value).

#include<stdio.h>

void main(){

int a,b;

printf("Enter Value For A & B");

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

printf("before swap:A:%d,B:%d \n",a,b);

swap(a,b);

}

void swap(int x,int y){

int c;

c = x;

x = y;

y = c;

printf("After Swap:");

printf("A:%d,B:%d",x,y);

}

12.Write a C program to swap two numbers using user define function. (Use concept of Call by Reference).

#include<stdio.h>

int main(){

int a,b;

printf("Enter Value For A & B:");

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

printf("before swap:A:%d,B:%d \n",a,b);

a,b = swap(&a,&b);

printf("After Swap:");

printf("A:%d,B:%d",a,b);

return 0;

}

int swap(int \*x, int \*y){

int c;

c = \*x;

\*x = \*y;

\*y = c;

return(\*x,\*y);

}

**Lab - 5**

13.Create structure Employee\_Detail (Employee\_id, Name, Designation, Salary). Write a program to read the detail from user and print it.

#include<stdio.h>

#include<string.h>

struct Empolyee\_Details{

int id;

char name[100];

char Designation[100];

float salary;

};

void add(){

struct Empolyee\_Details e1;

printf("Enter Details Here:\n");

printf("Enter ID Here:\n");

scanf("%d",&e1.id);

printf("Enter Name Here:");

scanf("%s",&e1.name);

printf("Enter Designation Here:");

scanf("%s",&e1.Designation);

printf("Enter salary Here:");

scanf("%f",&e1.salary);

printf("%d\n",e1.id);

printf("%s\n",e1.name);

printf("%s\n",e1.Designation);

printf("%f\n",e1.salary);

}

void main(){

add();x`}

14.Create array of structure STUDENT\_DETAIL (Enrollment\_no, Name, Sem, CPI) for5 students, scan their information and print it.

struct student {

char firstName[50];

int enrollmentno;

float marks;

int sem;

};

int main() {

int i;

struct student s1[5];

printf("Enter information of students:\n");

// storing information

for (i = 0; i < 5; ++i) {

s1[i].enrollmentno = i+1;

printf("\nEnrollment no:\n");

scanf("%d",&s1[i].enrollmentno);

printf("Enter name: ");

scanf("%s",&s1[i].firstName);

printf("Enter SEM:");

scanf("%d",&s1[i].sem);

printf("Enter CPI: ");

scanf("%f", &s1[i].marks);

}

printf("Displaying Information:\n\n");

// displaying information

for (i = 0; i < 5; ++i) {

printf("\nRoll number: %d\n",s1[i].enrollmentno);

printf("First name: ");

puts(s1[i].firstName);

printf("SEM IS:%d\n",s1[i].sem);

printf("Marks: %f\n", s1[i].marks);

}

return 0;

}

**Lab – 6**

15.Implement a program for stack that performs following operations using array:PUSH,POP,PEEP,CHANGE&DISPLAY.

#include<stdio.h>

#include<stdlib.h>

struct stack{

int size;

int top;

int \*s;

};

void create(struct stack \*s1){

printf("Enter Size:\n");

scanf("%d",&s1->size);

s1->top = -1;

s1->s=(int\*)malloc(s1->size\*sizeof(int));

}

void display(struct stack s1){

int i;

for(i=s1.top;i>=0;i--){

printf("%d \n",s1.s[i]);

}

}

void push(struct stack \*s1,int x){

if(s1->top==s1->size-1)

printf("stack is Full:\n");

else{

s1->top++;

s1->s[s1->top] = x;

printf("Element Are Insert:\n");

}

}

void pop(struct stack \*s1){

int x = -1;

if(s1->top==-1){

printf("UnderFlow:\n");

}

else{

x=s1->s[s1->top--];

printf("%d Removed Element\n",x);

}

}

void peep(struct stack s1,int pos){

int x = 0;

if(s1.top-pos+1<=0){

printf("Invalid Position \n");

}

else{

x = s1.s[s1.top-pos+1];

}

printf("Element Is:%d\n",x);

}

void change(struct stack \*s1,int x,int pos){

if(s1->top-pos+1 <=0){

printf("Stack UnderFlow:\n");

}

else{

s1->s[s1->top-pos+1] = x;

}

}

void main(){

int n = 0,push1 = 0,pop1 = 0,index = 0,index1 = 0,n1 = 0;

struct stack st;

create(&st);

while(n != 6)

{

printf("\nEnter Value Between 1 to 6:\n");

printf("1 For Push:\n");

printf("2 For Pop:\n");

printf("3 For View All Element:\n");

printf("4 For Change:\n");

printf("5 For View Specified Index:\n");

printf("6 For Exit:\n");

scanf("%d",&n);

switch(n)

{

case 1:

printf("Enter Element PUSH:\n");

scanf("%d",&push1);

push(&st,push1);

break;

case 2:

pop(&st);

break;

case 3:

printf("Element Is:\n");

display(st);

break;

case 4:

printf("Enter Value To change:\n");

scanf("%d",&pop1);

printf("Enter Index:\n");

scanf("%d",&index);

change(&st,pop1,index);

break;

case 5:

printf("Enter Specified Index To view Element:(In revrse)\n");

scanf("%d",&index1);

peep(st,index1);

break;

case 6:

exit(0);

break;

default:

printf("Enter Valid Number:\n");

break;

}

}

}