

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. Read n 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 with 2nd 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) for 5 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;
}
```

