PROGRAM 1

Write a program to swap the values of two variables without using third variable

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b;
clrscr();
printf("Enter the value for a and b\n");
scanf("%d%d",&a,&b);
 printf("The values of a&b before swapping a=%d and b=%d\n",a,b);
 a=a+b;
 b=a-b;
 a=a-b;
 printf("After swapping a=%d and b=%d\n",a,b);
 getch();
 }
```

OUTPUT

Enter the value for a and b

5 6

The values of a & b before swapping a=5 and b=6

After swapping a=6 and b=5

PROGRAM 2

Write a program to find largest (or) smallest of 3 number using if else statement

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("Enter any three number\n");
scanf("%d%d%d",&a,&b,&c);
if(a>b)
{
if(a>c)
printf("%d largest num\n",a);
else
printf("%d largest num\n",c);
}
else
{
if(b>c)
printf("%d largest number\n",b);
else
printf("%d largest number\n",c);
}
getch();
}
```

OUTPUT

Enter any three number

1 9 4

9 largest number

PROGRAM 3

Write a program calculate the root of quadratic equation

```
#include<stdio.h>
#include<conio.h>
void main()
{
int choise;
float x1,x2,d,a,b,c;
clrscr();
printf("Enter the values\n");
scanf("%f%f%f",&a,&b,&c);
d=(b*b)-(4*a*c);
if(d==0)
choise=1;
else
if(d>0)
choise=2;
else
choise=3;
switch(choise)
{
case 1:
printf("The roots are real and equal\n");
x1=-b/(2*a);
x2=x1;
printf("The root 1=%f \n",x1);
printf("The root 2=%f \n",x2);
break;
case 2:
printf("The root are real and distinct\n'");
x1=(-b+sqrt(abs(d))/(2*a));
x2=(-b-sqrt(abs(d))/(2*a));
printf("The root1=%f+i%f\n",x1,x2);
printf("The root2=%f-i%f\n",x1,x2);
break;
case 3:
printf("The root are imaginary\n");
x1=-b/(2*a);
x2=(sqrt(abs(d))/(2*a));
```

```
break;
default:
printf("Invalid choice\n");
}
getch();
}
```

OUTPUT

Enter the values

1 4 4

The roots are real and equal

The root 1=-2.000000

The root 2=-2.000000

Enter the values

1 8 2

The roots rae real and distinct

The root 1=-4.000000

The root 2=-8.00000

Enter the values

6 2 4

The root are imaginary

The root1=-0.166667+i0.000000

The root2=-0.166667-i0.000000

PROGRAM 4
Write a program to sum & reverse the given integer number

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,rem,sum=0,rev=0;
clrscr();
printf("Enter the values for n\n");
scanf("%d",&n);
while(n>0)
{
rem=n%10;
sum=sum+rem;
rev=rev*10+rem;
n=n/10;
}
printf("The sum of digits=%d\n",sum);
printf("The reverse=%d\n",rev);
getch();
}
```

OUTPUT

Enter the values for n

123

The sum of digits=6

The reverse=321

PROGRAM 5

Write a program Armstrong number in three digits 100-999

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int num,n,rem;
int cube=0,sum;
clrscr();
printf("\n Armstrong number between 100 to 999are:\n");
for(num=100;num<=999;num++)
{
sum=0;
n=num;
do
{
rem=n%10;
cube=rem*rem*rem;
sum=sum+cube;
n=n/10;
}
while(n>0);
if(num==sum)
printf("\n%d is a armstrong number\n",num);
}
getch();
}
```

OUTPUT

Armstrong number between 100 to 999are:
153 is a armstrong number
370 is a armstrong number
371 is a armstrong number
407 is a armstrong number

PROGRAM 6

Write a program to check whether the give number is prime or not (For Loop)

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int n,i,rem;
clrscr();
printf("Enter the value for n\n");
scanf("%d",&n);
for(i=2;i<=n/2;i++)
{
rem=n%i;
if(rem==0)
break;
}
if(rem==0)
printf("The enter number is not  prime number\n");
else
printf("The enter number is a prime number\n");
getch();
}
```

OUTPUT

Enter the value for n
3
The enter number is a prime number
Enter the value for n
8
The enter number is not prime number

PROGRAM 7

Write a program to find number of sum of all integer greater than 100 & less than 200 that are divisible my 7

```
#include<stdio.h>
#include<conio.h>
void main()
{
int sum=0,total=0,i,rem;
printf("in range of integer number(>100&<200\n");
printf("in divisible by 7 are follows......n\n");
for(i=100;i<=200;i++)
{
rem=(i%7);
if(rem==0)
{
printf("%d\n",i);
++total;
sum=sum+i;
}
}
printf("\n\n the sum of integers divisible by 7 is=%d\n",total);
getch();
}
```

OUTPUT

Enter the value for n

8

The enter number is not prime number

in range of integer number (>100&<200

in divisible by 7 are follows......n

105

112

119

126

133

140

147

154

161

168

175

182

189

196

the sum of integers divisible by 7 is=14

PROGRAM 8

Write a program to find factorial of a given number using function

```
#include<stdio.h>
#include<conio.h>
void main()
{
int factorial(int n);
int n,fact;
clrscr();
printf("Enter an integer number\n");
scanf("%d",&n);
fact=factorial(n);
printf("Factorial of %d is=%d\n",n,fact);
getch();
}
int factorial(int n)
{
int ft=1;
int i;
for(i=1;i<=n;++i)
ft=ft*i;
return(ft);
}
```

OUTPUT

```
Enter an integer number
6
Factorial of 6 is=720
```

PROGRAM 9

Write a program to find GCD two numbers using function (Greatest Common Divider)

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int h,i,a,b;
clrscr();
printf("Enter tow integer number\n");
scanf("%d%d",&a,&b);
h=gcd(a,b);
printf("GCD of two number is %d\n",h);
getch();
}
int gcd(int a,int b)
{
if(a%b==0)
return b;
else
return gcd(b,a%b);
}
```

OUTPUT

Enter tow integer number
8 1 3
GCD of two number is 1

PROGRAM 10

Write a program to search for a given number in an array

```
#include<stdio.h>
#include<conio.h>
void main()
{
int array[10];
int i,n,keynum,found=0;
clrscr();
printf("enter the value ofn\n");
scanf("%d",&n);
printf("enter the elements one by one\n");
for(i=0;i<n;i++)
{
scanf("%d",&array[i]);
}
printf("input array is\n");
for(i=0;i<n;i++)
{
printf("%d\n",array[i]);
}
printf("enter the elements to be serached\n");
scanf("%d",&keynum);
for(i=0;i<n;i++)
if(keynum==array[i])
{
found=1;
break;
}
if(found==1)
printf("successful search\n");
else
printf("search is failed\n");
getch();
```

}

OUTPUT

Enter the value of n

5

Enter the elements one by one

55

77

44

66

99

Input array is

55

77

44

66

99

Enter the elements to be searched

77

Successful search

PROGRAM 11

Write a program to find transpose of a matrix

```c
#include<stdio.h>
#include<conio.h>
int main()
{
int m,n,i,j,matrix[10][10],transpose[10][10];
clrscr();
printf("Enter the number of rows and columns of matrix\n");
scanf("%d%d",&m,&n);
printf("Enter the elements of matrix\n");
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 entered matrix:\n");
for(i=0;i<n;i++)
{
for(j=0;j<m;j++)
{
printf("%d\t",transpose[i][j]);
}
printf("\n");
}
```

getch();

}

OUTPUT

Enter the number of rows and columns of matrix

2 2

Enter the elements of matrix

4 5

8 9

Transpose of entered matrix:

4   8

5   9

PROGRAM 12

Write a program to addition of two matrixes

```c
#include<stdio.h>
#include<stdio.h>
void main()
{
int m,n,i,j,m1[10][10],m2[10][10],msum[10][10];
clrscr();
printf("Enter the order of matrix\n");
scanf("%d%d",&m,&n);
printf("Enter the element for fist matrix\n");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
scanf("%d",&m1[i][j]);
}
}
printf("Enter the element for second matrix\n");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
scanf("%d",&m2[i][j]);
}
}
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
msum[i][j]=m1[i][j]+m2[i][j];
}
}
printf("The sum of entered matrix\n");
for(i=0;i<m;i++)
{
for(j=0;j<n;j++)
{
printf("%d\t",msum[i][j]);
```

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

OUTPUT

Enter the order of matrix
2 2

Enter the element for fist matrix
4 5
7 8

Enter the element for second matrix
1 3
9 6

The sum of entered matrix
5   8
16   14

PROGRAM 13

Write a program to create a structure with employee details & display the same

```c
#include<stdio.h>
#include<conio.h>
struct employe
{
int empno;
char name[20];
int salary;
}
emp[10];
void main()
{
int n,i;
clrscr();
printf("\n Enter the no of employee\n");
scanf("%d",&n);
for(i=0;i<n;i++)
{
printf("\n Enter the %d employee's details\n",i+1);
printf("empno: ");
scanf("%d",&emp[i].empno);
printf("empname: ");
scanf("%s",&emp[i].name);
printf("salary: ");
scanf("%d",&emp[i].salary);
}
printf("\nThe details of employees are\n");
for(i=0;i<n;i++)
{
printf("\n\n empno \t%d\n name \t%s\n
salary\t%d\n\n",emp[i].empno,emp[i].name,emp[i].salary);
}
getch();
```

}

OUTPUT

Enter the 3 employee's details

empno:125

emp name: rohan

salary:2500

The details of employees are

Emp no: 123

Name: harshak

Salary: 2500

emp no: 124

name: usman

salary: 5000

emp no: 125

name: rohan

salary: 2500

PROGRAM 14

Write a program to process student to structure containing role number, class & age as members the program must read student record in an array of structure and display the details of a student how is eldest use a function to find the eldest for which array of structure is an argument.

```
#include<stdio.h>
#include<conio.h>
struct student
{
int rno;
char class[10];
int age;
};
void main()
{
int i,sr;
struct student std[5];
clrscr();
printf("Type in 5 student details as.......\n");
printf("rollno class agel;\n\n");
for(i=0;i<5;++i)
scanf("%d%s%d",&std[i].rno,&std[i].class,&std[i].age);
printf("\n\n Roll no class\t age\n");
printf(".........\n");
for(i=0;i<5;++i)
sr=eldest(std);
printf("\n\n\t Eldest student details in class is.......\n\n");
printf("\n%d\t%s\t%d",std[sr].rno,std[sr].class,std[sr].age);
getch();
}
int eldest(struct student std[])
{
int senior=0;
int k,position;
```

```
for(k=0;k<5;k++)
if(std[k].age>senior)
{
senior=std[k].age;
position=k;
}
return(position);
}
```

OUTPUT

Type in 5 student details as.......

Roll no	class	age;
1	4cs	20
2	4cs	17
3	4cs	16
4	4cs	16
5	4cs	17

Roll no   class   age

....

Eldest student details in class is.......

1   4cs   20

PROGRAM 15

Write a program to demonstrate #define function

```c
#include<stdio.h>
#include<conio.h>
#define PI 3.14
void main()
{
float r,area,cirf;
clrscr();
printf("Enter the radius for circle and circumference\n");
scanf("%f",&r);
area=PI*r*r;
cirf=2*PI*r;
printf("Area of circle=%f\n",area);
printf("Circumference of circle=%f\n",cirf);
getch();
}
```

OUTPUT

Enter the radius for circle and circumference

3

Area of circle=28.260000

Circumference of circle=18.840000