1.write c a program for Fibonacci series using iterative?

Program:

```
#include<stdio.h>
int main()
{
        int i,n;
 long int a=0,b=1,temp;
 printf("enter the number of terms:");
 scanf("%d",&n);
 printf("fabonacci series:");
 for(i=1;i<n;i++){
 printf("%d ",a);
 temp=a+b;
 a=b;
 b=temp;
}
return 0;
}
```

Output:

```
enter the number of terms:10
fabonacci series:0 1 1 2 3 5 8 13 21
--------------------------------
Process exited after 3.143 seconds with return value 0
Press any key to continue . . .
```

1.1.write c a program for Fibonacci series using recursive?

Program:

```
#include<stdio.h>
int fibonacci(int n)
{
	if(n<=1)
	{
		return n;
	}
	else{
		return fibonacci(n-1)+fibonacci(n-2);
	}
}
int main()
{
	int n=10;
	printf("fibonacci serials upto %d term is:",n);
	for(int i=0;i<n;i++) {
		printf("%d",fibonacci(i));
	}
	return 0;
}
```

Output:

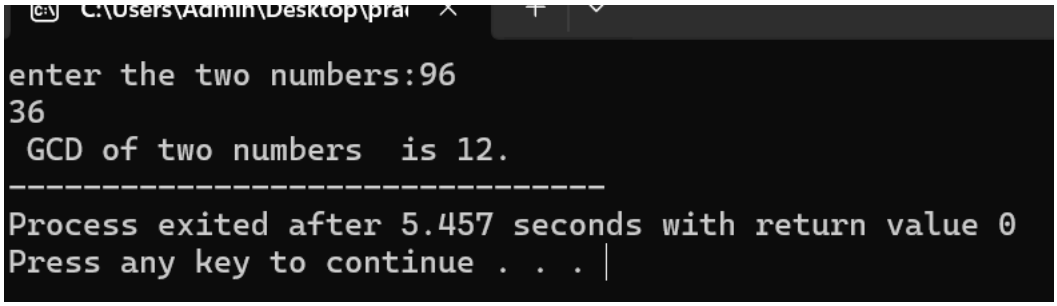
```
fibonacci serials upto 10 term is:0 1 1 2 3 5 8 13 21 34
--------------------------------
Process exited after 0.537 seconds with return value 0
Press any key to continue . . .
```

2.write C program for Armstrong number?

Program:

```
#include<stdio.h>
 int main()
{
int n,r,sum=0,temp;
printf("enter the number=");
scanf("%d",&n);
temp=n;
while(n>0)
{
r=n%10;
sum=sum+(r*r*r);
n=n/10;
}
if(temp==sum)
printf("armstrong  number ");
else
printf("not armstrong number");
return 0;
}
```

Output:

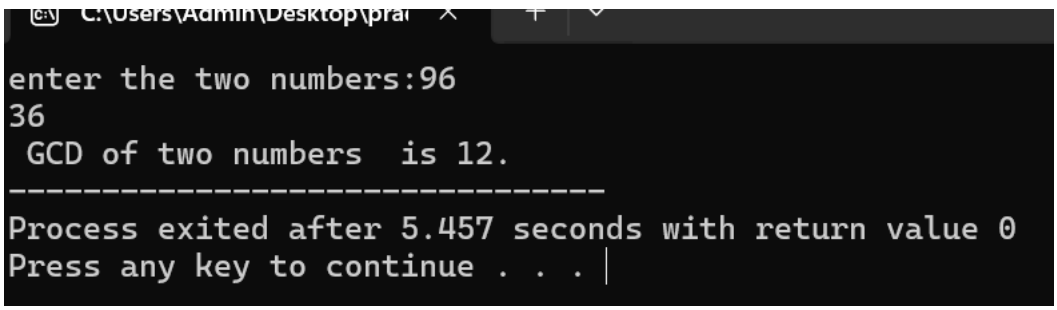


3.write C program for GCD of two numbers?

Program:

```
#include <stdio.h>
#include <conio.h>
int main()
{
   int num1, num2;
     printf("enter the two numbers:");
     scanf("%d %d",&num1,&num2);
   while (num1 != num2)
   {
      if (num1 > num2)
         {
         num1 = num1 - num2;
         }
      else
         {
            num2 = num2 - num1;
            }
   }
   printf( " GCD of two numbers  is %d.", num2);
}
```

Output:

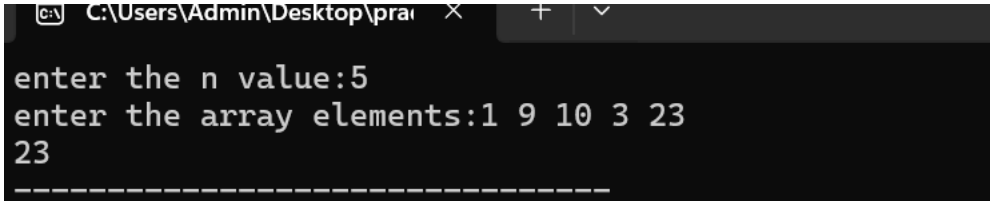


4. write C program for largest number of an array?

Program:

```
#include<stdio.h>
int main(){
        int n,i,a[10],max;
        printf("enter the n value:");
        scanf("%d",&n);
        printf("enter the array elements:");
        for(i=0;i<n;i++){
        scanf("%d",&a[i]);
        }
        max=a[0];
        for(i=0;i<n;i++){
                if(a[i]>max){
                        max=a[i];
                }
        }
        printf("%d",max);
}
```

Output:

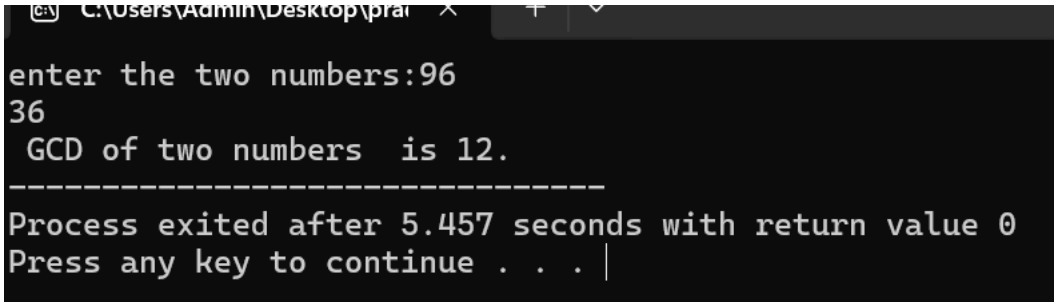


5.write C program for factorial using iterative?

Program:

```
#include<stdio.h>
int main()
{
 int i,fact=1,number;
 printf("Enter a number: ");
  scanf("%d",&number);
    for(i=1;i<=number;i++){
      fact=fact*i;
  }
  printf("Factorial of %d is: %d",number,fact);
return 0;
}
```

Output:



5.1.write C program for factorial using recursive?

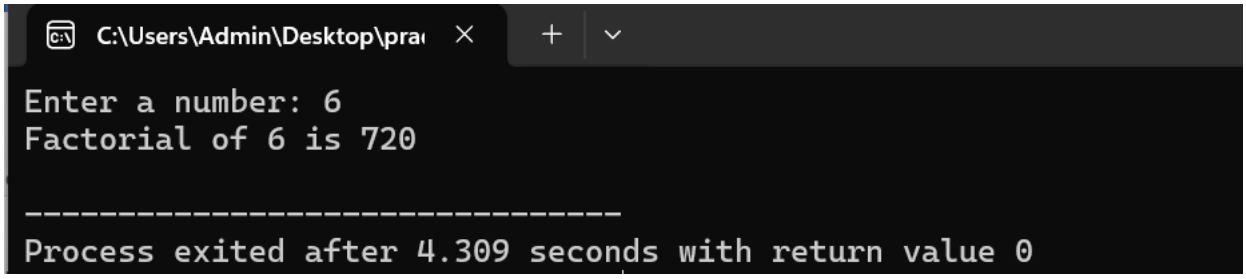
Program:

```
#include<stdio.h>


long factorial(int n)
{
  if (n == 0)
    return 1;
  else
    return(n * factorial(n-1));
}
int main()
{
  int number;
  long fact;
  printf("Enter a number: ");
  scanf("%d", &number);

  fact = factorial(number);
  printf("Factorial of %d is %ld\n", number, fact);
  return 0;
}
```

Output:

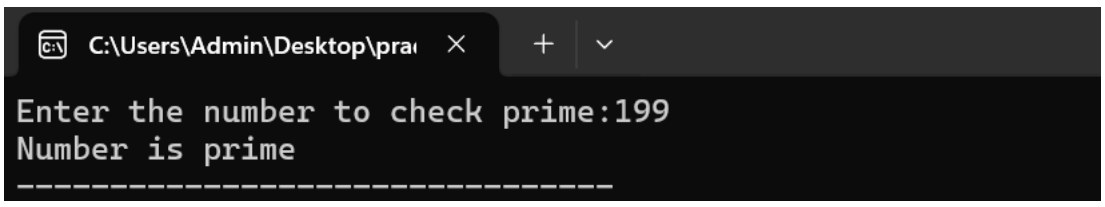


6.write C program for prime number?

Program:

```
#include<stdio.h>
int main(){
int n,i,m=0,flag=0;
printf("Enter the number to check prime:");
scanf("%d",&n);
m=n/2;
for(i=2;i<=m;i++)
{
if(n%i==0)
{
printf("Number is not prime");
flag=1;
break;
}
}
if(flag==0)
printf("Number is prime");
return 0;
 }
```

Output:



7. write C program for Selection Sort?

Program:

```
#include <stdio.h>

void selection(int arr[], int n)
{
   int i, j, small;

   for (i = 0; i < n-1; i++)
   {
      small = i;

      for (j = i+1; j < n; j++)
      if (arr[j] < arr[small])
         small = j;
   int temp = arr[small];
   arr[small] = arr[i];
   arr[i] = temp;
   }
}

void printArr(int a[], int n)
{
   int i;
   for (i = 0; i < n; i++)
      printf("%d ", a[i]);
}

int main()
{
```

```
    int a[5];

    int n = sizeof(a) / sizeof(a[0]);
    printf("Enter the elements:\n");
    for (int i = 0; i < n; i++) {
        scanf("%d", &a[i]);
    }
    printf("Before sorting array elements are - \n");
    printArr(a, n);
    selection(a, n);
    printf("\nAfter sorting array elements are - \n");
    printArr(a, n);
    return 0;
}
```

Output:

```
Enter the elements:
12
4
7
88
0
Before sorting array elements are -
12 4 7 88 0
After sorting array elements are -
0 4 7 12 88
```

8. Write C program for Bubble sort?

Program:

```
#include<stdio.h>
 void print(int a[], int n)
   {
   int i;
   for(i = 0; i < n; i++)
   {
      printf("%d ",a[i]);
   }
   }
 void bubble(int a[], int n)
{
  int i, j, temp;
  for(i = 0; i < n; i++)
   {
     for(j = i+1; j < n; j++)
       {
          if(a[j] < a[i])
          {
             temp = a[i];
             a[i] = a[j];
             a[j] = temp;
          }
       }
   }
 }
int main ()
{
   int i, j,temp;
   int a[5];
```

```
    int n = sizeof(a)/sizeof(a[0]);
          printf("Enter the elements:\n");
    for (int i = 0; i < n; i++) {
       scanf("%d", &a[i]);
    }
    printf("Before sorting array elements are - \n");
    print(a, n);
    bubble(a, n);
    printf("\nAfter sorting array elements are - \n");
    print(a, n);
}
```

Output:

```
Enter the elements:
111
10
23
45
5
Before sorting array elements are -
111 10 23 45 5
After sorting array elements are -
5 10 23 45 111
```

9.write a C program for Matrix Multiplication?

Program:

```
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
system("cls");
printf("enter the number of row=");
scanf("%d",&r);
printf("enter the number of column=");
scanf("%d",&c);
printf("enter the first matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
printf("enter the second matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&b[i][j]);
}
}

printf("multiply of the matrix=\n");
for(i=0;i<r;i++)
{
```

```
for(j=0;j<c;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<c;j++)
{
printf("%d\t",mul[i][j]);
}
printf("\n");
}
return 0;
}
```

Output:

```
enter the number of row=3
enter the number of column=3
enter the first matrix element=
1 1 1
2 2 2
3 3 3
enter the second matrix element=
1 1 1
2 2 2
3 3 3
multiply of the matrix=
6       6       6
12      12      12
18      18      18
```

10. write C program for string palindrome?

Program:

```
#include<stdio.h>
int main()
{
int n,r,sum=0,temp;
printf("enter the string=");
scanf("%d",&n);
temp=n;
while(n>0)
{
r=n%10;
sum=(sum*10)+r;
n=n/10;
}
if(temp==sum)
printf("palindrome ");
else
printf("not palindrome");
return 0;
}
```

Output:

```
enter the string=madam
palindrome
--------------------------------
Process exited after 5.84 seconds with return value 0
Press any key to continue . . .
```