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CONTROL STATEMENTS:-

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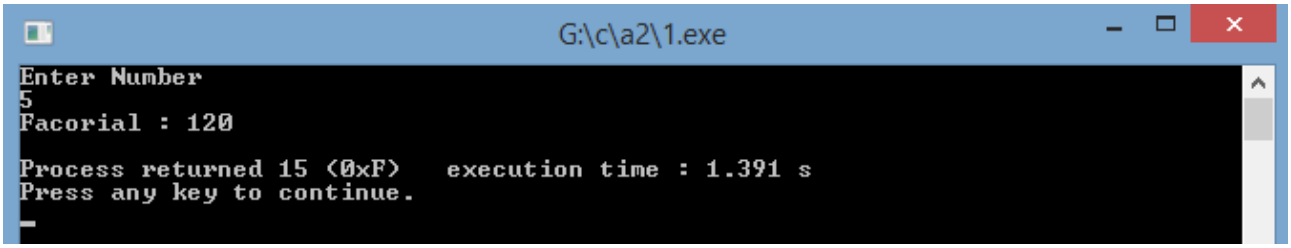
1) Write a C Program to Find the factorial of a given number. User has to take the input at runtime.

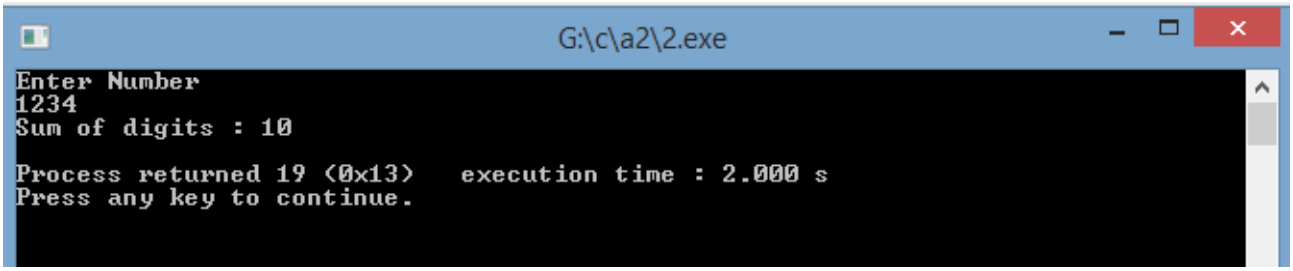
```
#include<stdio.h>


main()
{
        int fact=1,i,j,k,num;


        printf("Enter Number\n");
        scanf("%d",&num);


        for(i=1;i<=num;i++)
        {
        fact=fact*i;
        }
        printf("Facorial : %d\n",fact);
}
```



2) Write a C Program to Find the sum of digits of a given number.

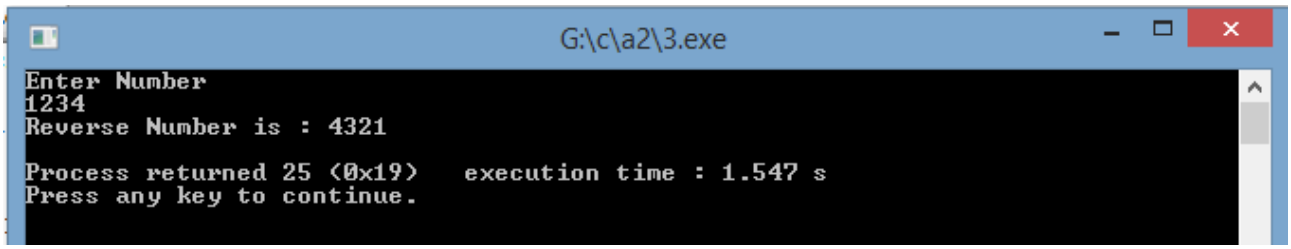
```
#include<stdio.h>

main()
{
	int s=0,num,i,j,k;

	printf("Enter Number\n");
	scanf("%d",&num);

	//for(s=0;num;s=s+num%10,num=num/10);

/*
	while(num)
	{
	s=s+num%10;
	num=num/10;
	}
*/

	do
	{
	s = s + num % 10;
	num = num /10;
	}
```

```
    while(num > 0);


    printf("Sum of digits : %d\n",s);
}
```



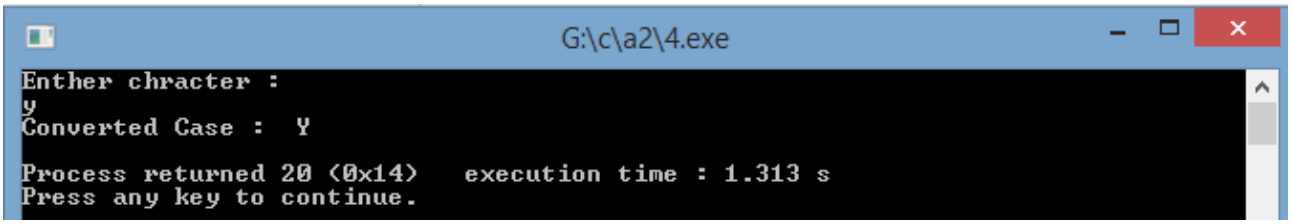
3) Write a C Program to reverse the digits of a given number.

```
#include<stdio.h>


main()
{
        int s=0,i,j,k,num;
        printf("Enter Number\n");
        scanf("%d",&num);


        for(s=0;num;s=10*s+num%10,num=num/10);
        printf("Reverse Number is : %d\n",s);
}
```



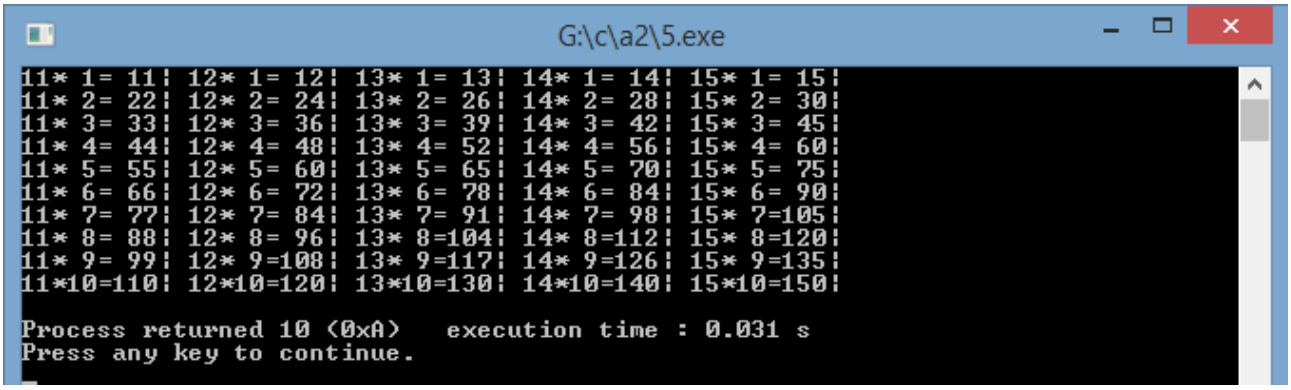
4) Write a C program to convert a character. If it is Lower, convert it to Upper and if it is Upper convert it to Lower character.

```
#include<stdio.h>


main()
{
        char c;


        printf("Enther chracter : \n");
        scanf("%c",&c);


        c = c ^ 32;
        printf("Converted Case :  %c\n",c);


}
```



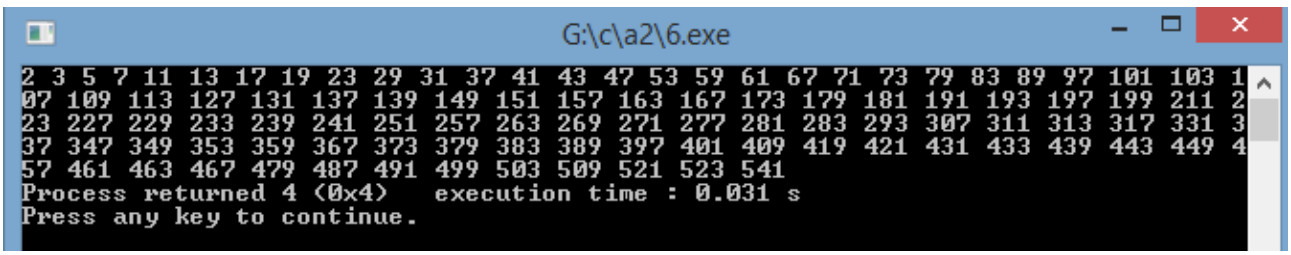
5) Write a C program to print multiplication tables from 10 to 15.

```
#include<stdio.h>


main()
{
        int i,j;


        for(i=1;i<=10;i++)
        {
        for(j=11;j<=15;j++)
        {
                printf("%d*%2d=%3d| ",j,i,i*j);
        }
        printf("\n");
        }
}
```



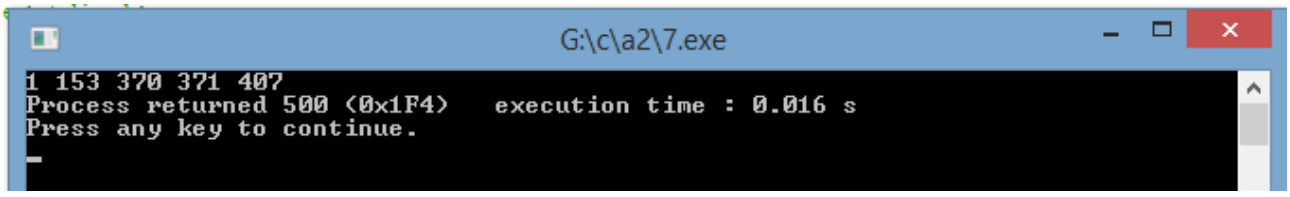
6) Write a C program to print first 100 prime numbers.

```
#include<stdio.h>


main()
{
        int num,i,j,k,l,c=0;
        for(j=1;c<100;j++)
        {
        for(i=2;i<j;i++)
        {
                if(j%i==0)
                        break;
        }
        if(i==j)
        {
                c++;
                printf("%d ",j);
        }
        }
}
```



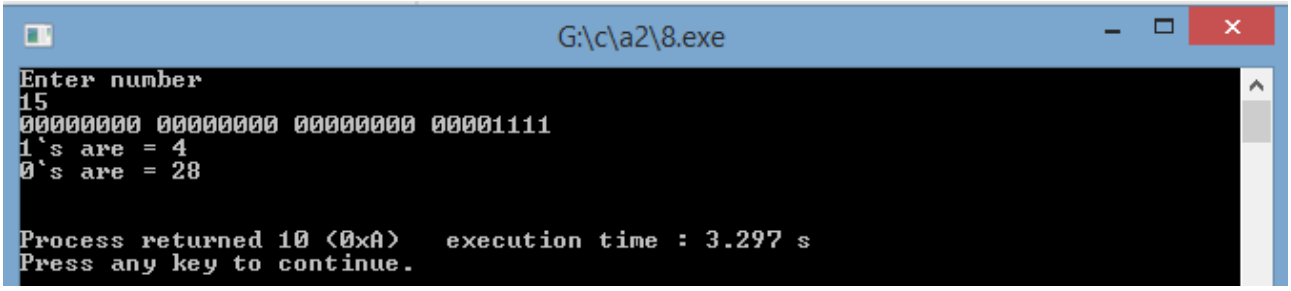
7) Write a C program to print ArmStrong Numbers between 1 to 500.

```
#include<stdio.h>

main()
{
        int d,i,j,k,num,s,m;

        for(j=1;j<=500;j++)
        {
        i=j;
        d=j;

        for(s=0;i;k=i%10,s=s+(k*k*k),i=i/10);

        if(j==s)
        printf("%d ",j);
        }
}
```



8) Write a C program to print the binary of a given number (+ve or -ve numbers).

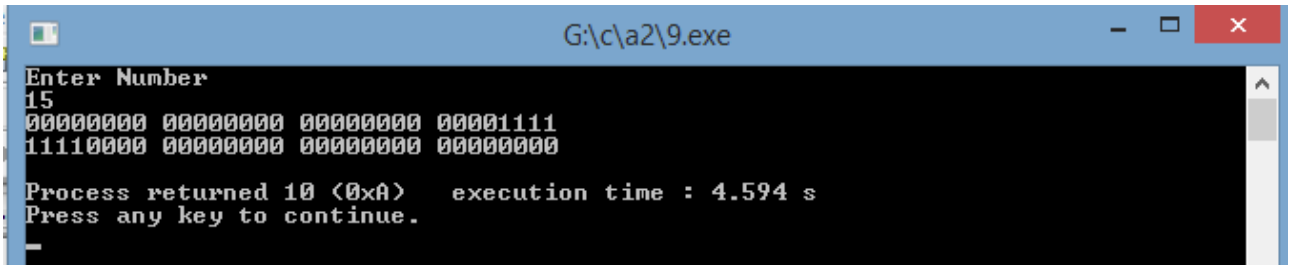
```
#include<stdio.h>
main()
{
        int num,i,c=0;
        printf("Enter number\n");
        scanf("%d",&num);
        for(i=sizeof(int)*8-1;i>=0;i--)
        {
        printf("%d",num>>i&1);
        if(num >> i&1 == 1)
                c++;
        if(i%8==0)
        printf(" ");
        }
        printf("\n1`s are = %d\n",c);
        printf("0`s are = %d\n",sizeof(int)*8-c);
        printf("\n");
}
```



9) Write a C program to reverse the bits of a given number.

```
#include<stdio.h>

main()
{
        int num,i,j;

        printf("Enter Number\n");
        scanf("%d",&num);

        for(i=sizeof(int)*8-1;i>=0;i--)
        {
        printf("%d",num >> i & 1);
        if (i % 8 == 0)
                printf(" ");
        }
        printf("\n");



        for(i=0,j=sizeof(int)*8-1;i<(sizeof(int)*8)/2;i++,j--)
        {

        if( (num >> i & 1) != (num >> j & 1) )
        {
```

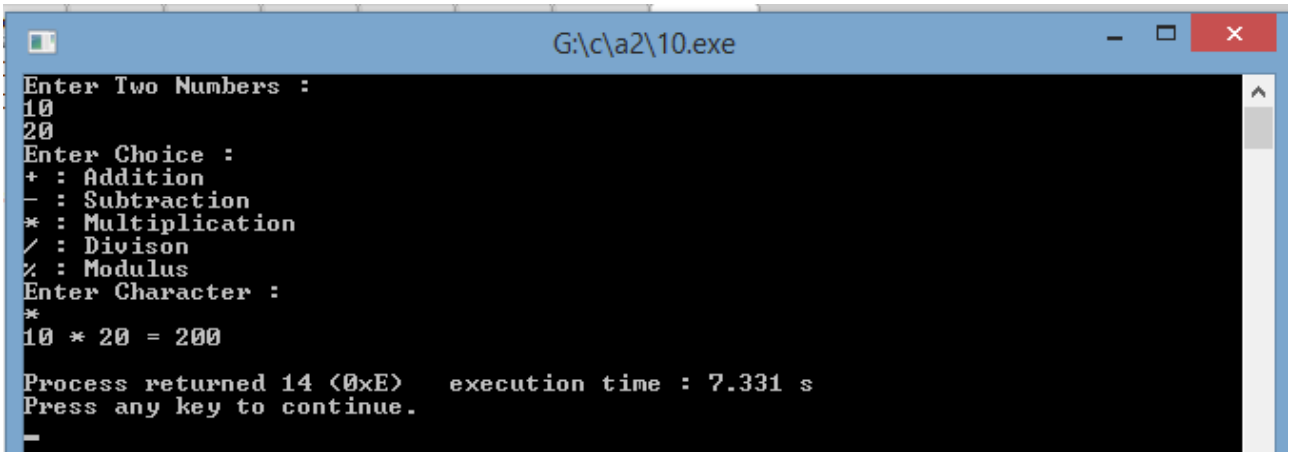
```
            num = num ^ 1 << i;
            num = num ^ 1 << j;
        }
        }


        for(i=sizeof(int)*8-1;i>=0;i--)
        {
        printf("%d",num >> i & 1);
        if (i % 8 == 0)
            printf(" ");
        }
        printf("\n");
}
```



10) Write a C program to implement a Calculator using switch.

```
#include<stdio.h>


main()
{
        int i,j;
        char c;


        printf("Enter Two Numbers : \n");
        scanf("%d %d",&i,&j);


        printf("Enter Choice : \n+ : Addition\n- : Subtraction\n* : Multiplication\n/ :
Divison\n%% : Modulus\n");
        printf("Enter Character : \n");
        scanf(" %c",&c);


        switch(c)
        {
        case '+':
        printf("%d + %d = %d\n",i,j,i+j);
        break;


        case '-':
        printf("%d - %d = %d\n",i,j,i-j);
        break;
```

```
        case '*':
        printf("%d * %d = %d\n",i,j,i*j);
        break;

        case '/':
        printf("%d / %d = %d\n",i,j,i/j);
        break;

        case '%':
        printf("%d %% %d = %d\n",i,j,i%j);
        break;

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



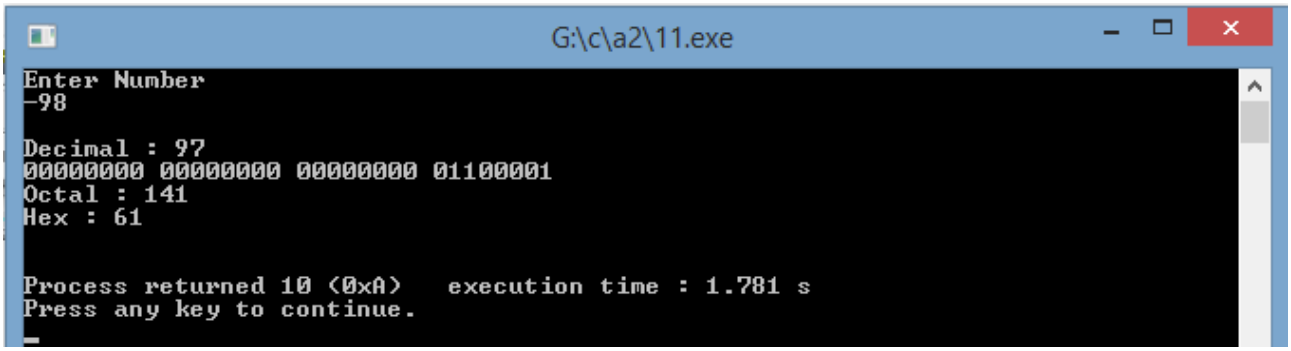
11) Write a C program to find the complement of a given number and then print it's binary decimal, octal and Hexa decimal values.

Note : Number can be either +ve or -ve. And observe the result satisfying its formulae or not.

Formulae : 1's complement of (x) = - (x+1)

```
#include<stdio.h>

main()
{
        int i,j,k,num;

        printf("Enter Number\n");
        scanf("%d",&num);

        num=~num;

        printf("\nDecimal : %d\n",num);

        for(i=sizeof(int)*8-1;i>=0;i--)
        {
        printf("%d",num>>i&1);
        if(i%8==0)
```

```
            printf(" ");
        }

        printf("\n");

        printf("Octal : %o\n",num);
        printf("Hex : %X\n",num);
        printf("\n");

}
```



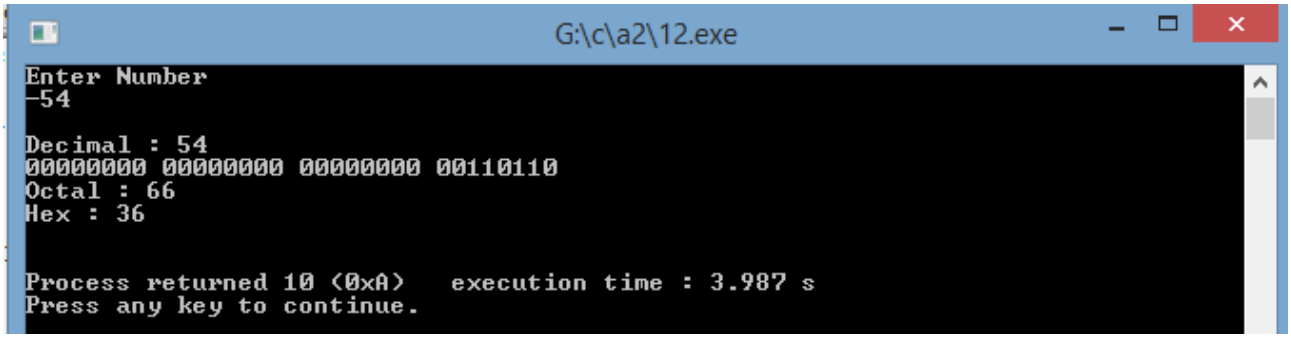
12) Write a C program to find the 2's complement of a given number and then print its binay, decimal, octal and Hexa decimal values.

Note : Number can be either +ve or –ve and observe the result satisfying its Formula or not.

Formulae : 2's complement of (x) = - (x)

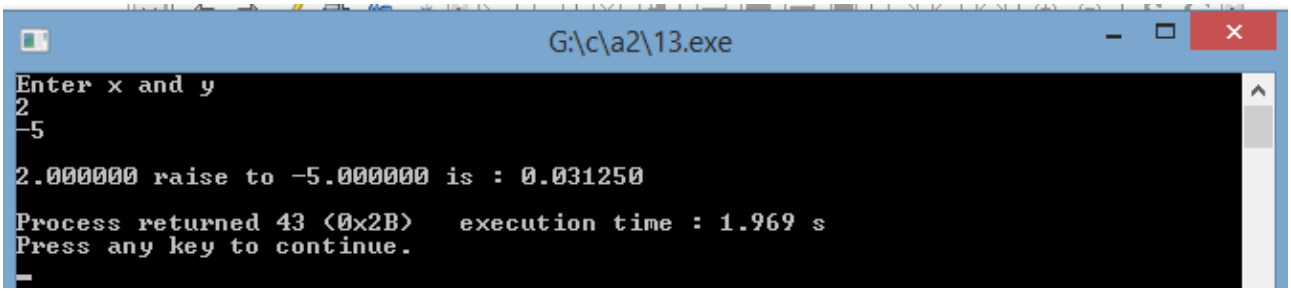
```
#include<stdio.h>

main()
{
        int i,j,k,num;

        printf("Enter Number\n");
        scanf("%d",&num);

        num=~num;
        num=num+1;

        printf("\nDecimal : %d\n",num);

        for(i=sizeof(int)*8-1;i>=0;i--)
        {
        printf("%d",num>>i&1);
        if(i%8==0)
```

```
            printf(" ");
        }

        printf("\n");

        printf("Octal : %o\n",num);
        printf("Hex : %X\n",num);
        printf("\n");

}
```



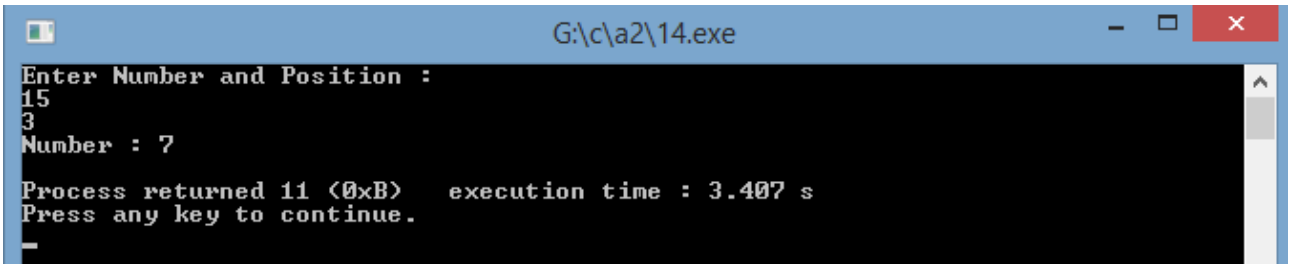
13) Write a C program to find out power of given number without using pow() function.

```
#include<stdio.h>


main()
{
        float m,x,y,i,pow=1,l,j,n;


        printf("Enter x and y\n");
        scanf("%f %f",&x,&y);


        if(y<0)
   {
      m=y;
      y=-y;
   }
   for(l=1;l<=y;l++)
   {
      pow=pow*x;
   }
   if(m<0)
      pow=(1/pow);


   printf("\n%f raise to %f is : %f\n",x,m,pow);
}
```


G:\c\a2\13.exe
Enter x and y
2
-5
2.000000 raise to -5.000000 is : 0.031250
Process returned 43 (0x2B)   execution time : 1.969 s
Press any key to continue.

14) Write a C program to find the complement of a particular bit. User has to take the position number at runtime.

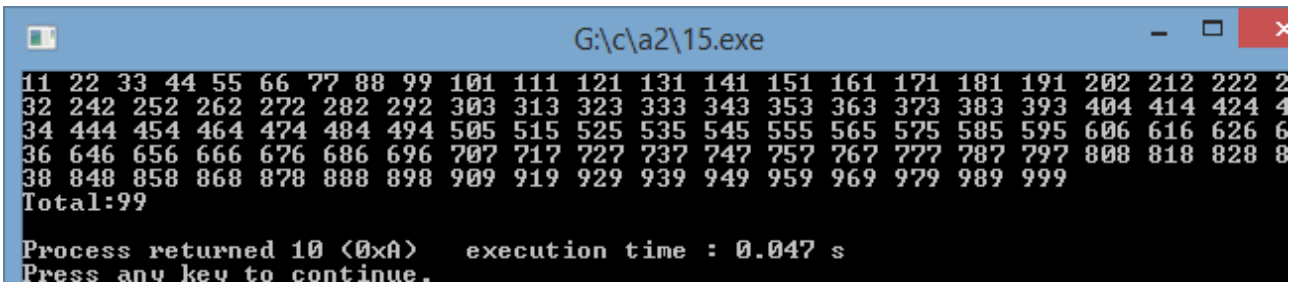
```
#include<stdio.h>


main()
{
        int num,pos;


        printf("Enter Number and Position : \n");
        scanf("%d %d",&num,&pos);


        num = num ^ 1 << pos;


        printf("Number : %d\n",num);
}
```



15) Write a C program to print palindrome numbers between 1 to 1000. (palindrome numbers means the numbers which are equal to its reverse.

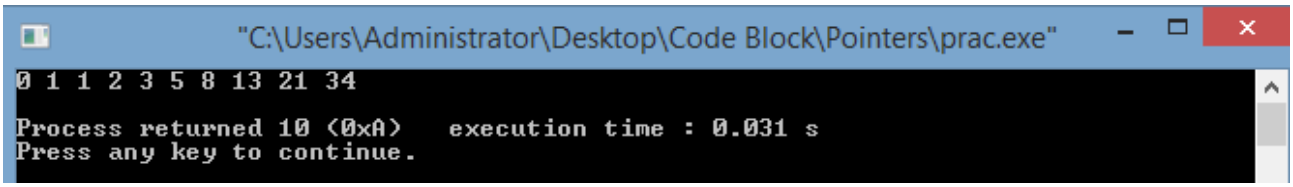
Ex : 11,22,33,44,.....999.)

```
#include<stdio.h>


main()
{
        int num,i,k,l,j,s=0,c=0;


        for(i=10;i<=1000;i++)
        {
        j=i;
        for(s=0;j;s=10*s+j%10,j=j/10);
        if(s == i)
        {
                printf("%d ",i);
                c++;
        }
        }
        printf("\nTotal:%d\n",c);
}
```



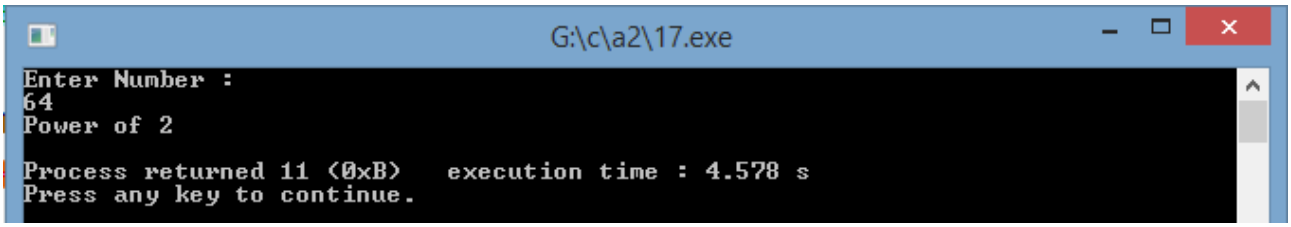
16) Write a C program to print Fibonacci series between 0 to 50.

```
#include<stdio.h>


main()
{
        int i,j=0,k=1,l=1,num;


        printf("%d %d ",j,k);


        for(i=0;l<=50;i++)
        {
        l=j+k,j=k,k=l;
        if(l<50)
                printf("%d ",l);


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



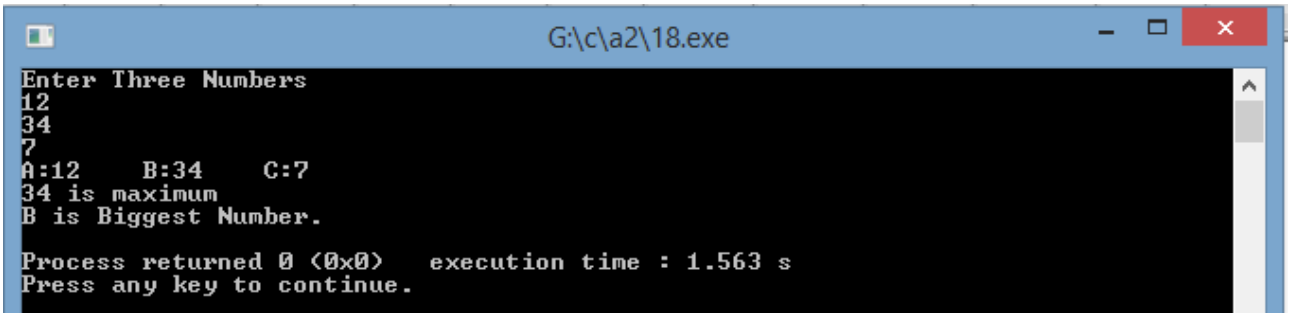
17) Write a C program to find the given number is power of 2 or not.

```
#include<stdio.h>


main()
{
        int num;


        printf("Enter Number : \n");
        scanf("%d",&num);


        (num & num - 1) ? printf("Not..\n"):printf("Power of 2\n");
}
```



18) Write a C program to find out the biggest number of three variables using if-else Ladder and ternary operator.

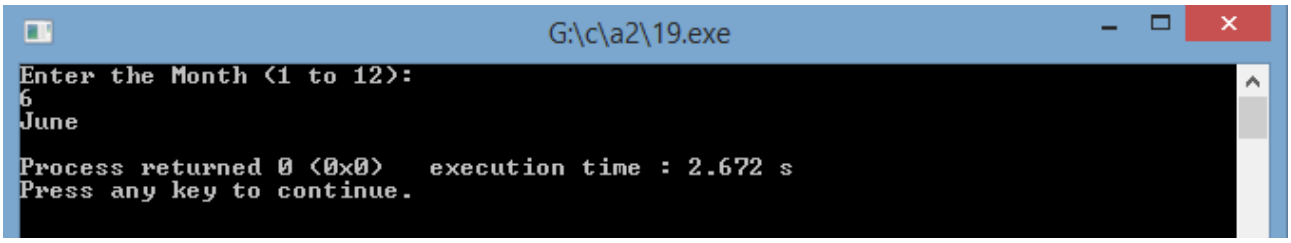
```
#include<stdio.h>


main()
{
        unsigned int a,b,c,max;
        printf("Enter Three Numbers\n");
        scanf("%d %d %d",&a,&b,&c);
        printf("A:%u\tB:%u\tC:%u\n",a,b,c);
        max = (a>b)?(a>c) ? a : c : ((b>c)? b:c);
         printf("%d is maximum\n",max);
        if(a>b && a>c)
        {
                printf("A is Biggest Number.\n");
        }
        else if(b>a && b>c)
        {
        printf("B is Biggest Number.\n");
        }
        else
        {
        printf("C is Biggest Number.\n");
        }
}
```


G:\c\a2\18.exe
Enter Three Numbers
12
34
7
A:12   B:34   C:7
34 is maximum
B is Biggest Number.
Process returned 0 (0x0)   execution time : 1.563 s
Press any key to continue.

19) Accept a month in digit from the user. Display the month in words. If number is not between 1 and 12 display message "Invalid Month". (Use 'switch')

```
#include<stdio.h>


main()
{
        int month,choice;


        printf("Enter the Month (1 to 12): \n");
        scanf("%d",&month);


        switch(month)
        {
        case 1: printf("January\n");
                break;
        case 2: printf("February\n");
                break;
        case 3: printf("March\n");
                break;
        case 4: printf("April\n");
                break;
        case 5: printf("May\n");
                break;
        case 6: printf("June\n");
```

```
            break;
        case 7: printf("July\n");
            break;
        case 8: printf("August\n");
            break;
        case 9: printf("September\n");
            break;
        case 10: printf("October\n");
            break;
        case 11: printf("November\n");
            break;
        case 12: printf("December\n");
            break;
        default: printf("Invalid Month\n");
            break;
        }
}
```



20) Write a C program to find the given number is Perfect number or not?

Note : Perfect number means sum of it's divisers exept that num is equalent to the Same number.

Ex : i/p num = 6.

6 diviesers are = 1,2,3, & 6.

sum = 1+2+3

sum = 6. So here 6 is perfect number.

```
#include<stdio.h>

main()
{
    int l,i,j,k,num,s=0;

    for(j=1;j<=10000;j++)
    {
    k=j;
    l=j;

    for(i=1;i<k;i++)
    {
        if(k%i==0)
        s=s+i;
    }
```

```
        if(s==k)
                printf("%d ",j);
        s=0;
        }
        printf("\n");
}
```