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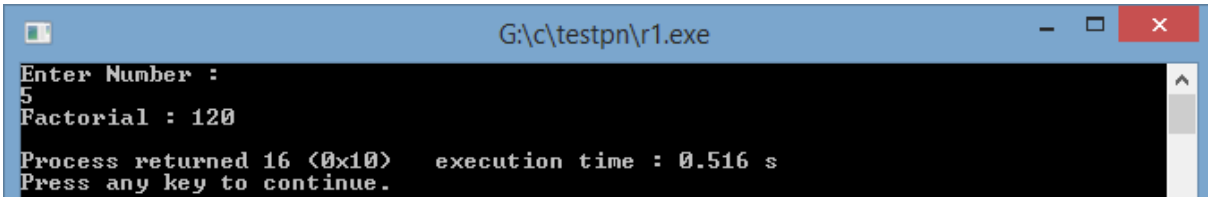
Write a recursive function to find the factorial of a given number.

```
#include<stdio.h>

main()
{
	int i,num,ans;

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

	ans=my_fact_rev(num);

	printf("Factorial : %d\n",ans);
}

int my_fact_rev(int num)
{
	if(num)
	{
	return num *my_fact_rev(num-1);
	}
	else
	return 1;
}
```

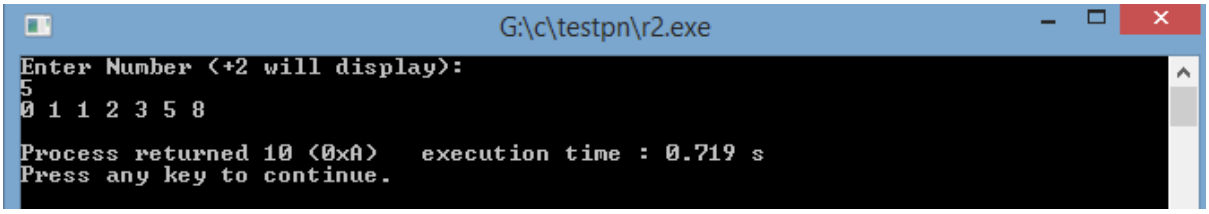
```
int tmy_fact_rev(int num)
{
        static int i=1,t=1;

        if(i <= num)
        {
        t = t * i;
        i++;
        my_fact_rev(num);
        return t;
        }
        else
        return t;

}
```



Write a recursive function to print the 'n' fibonacci series numbers.

```
#include<stdio.h>
void my_fibbo_rec(int);
main()
{
	int num;

	printf("Enter Number (+2 will display): \n");
	scanf("%d",&num);

	printf("0 1 ");
	my_fibbo_rec(num);
	printf("\n");
}

void my_fibbo_rec(int n)
{
	static int i=1,j=0,k=1,l;

	if(i<=n)
	{
	l=j+k;
	j=k;
	k=l;
```

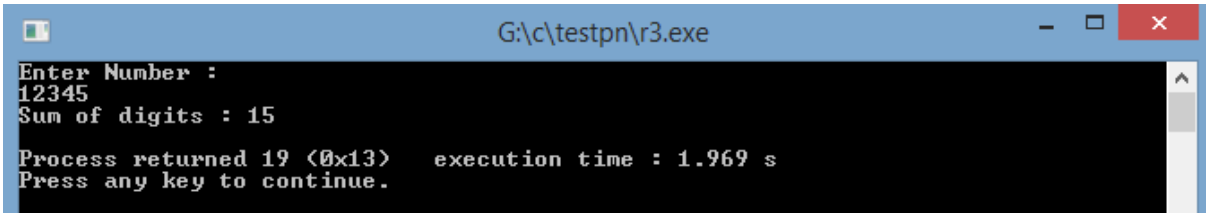
```
        printf("%d ",l);
        i++;
        my_fibbo_rec(n);
        }
}
```



Write a recursive function to find the sum of digits of a given number.

```
#include<stdio.h>
int my_sum_rec(int);

main()
{
	int num,ans;

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

	ans=my_sum_rec(num);
	printf("Sum of digits : %d\n",ans);
}

int my_sum_rec(int num)
{
	static int s=0;
	if(num)
	{
	s = s + num % 10;
	num=num/10;
	my_sum_rec(num);
```

```
        return s;
        }
}
```


G:\c\testpn\r3.exe
Enter Number :
12345
Sum of digits : 15
Process returned 19 (0x13)   execution time : 1.969 s
Press any key to continue.

Write a recursive function to reverse the given number.

```
#include<stdio.h>
int my_sum_rec(int);

main()
{
	int num,ans;

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

	ans=my_sum_rec(num);
	printf("Reverse of digits : %d\n",ans);
}

int my_sum_rec(int num)
{
	static int s=0;
	if(num)
	{
	s = 10*s + num % 10;
	num=num/10;
	my_sum_rec(num);
```

```
        return s;
        }
}
```


G:\c\testpn\r4.exe
Enter Number :
12345
Reverse of digits : 54321
Process returned 26 (0x1A)   execution time : 2.250 s
Press any key to continue.

Write a recursive function to that displays all the proper divisors of a given number except that and returns their sum.

Ex: 1,3,5,9,15 & 45 are the proper divisors of 45.

sum = 1+3+5+9+15

sum = 33

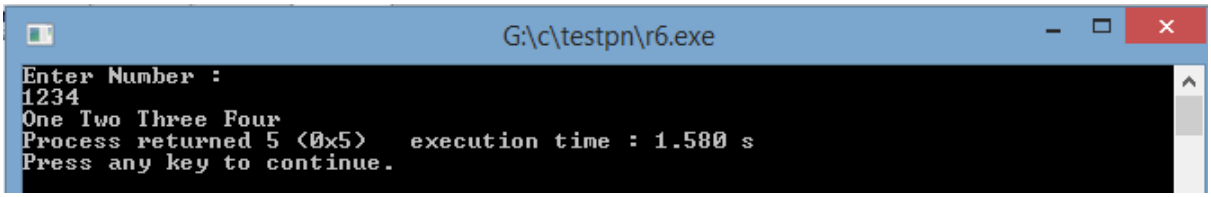
```
#include<stdio.h>
int my_per_rec(int);

main()
{
	int num,ans;
	printf("Enter number : \n");
	scanf("%d",&num);

	ans = my_per_rec(num);
	printf("\nTotal : %d\n",ans);
}

int my_per_rec(int num)
{
	static int i=1,s=0;

	if(i < num)
```

```
        {
        if(num % i == 0)
        {
                s = s + i;
                printf("%d ",i);
        }
        i = i + 1;
        my_per_rec(num);
        return s;

        }
}
```

Write a recursive function that displays a positive integer in words.
For ex: if the integer is 3412 then it is displayed as three four one two.

```
#include<stdio.h>
void my_call(int);

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

        printf("Enter Number : \n");
        scanf("%d",&s);
        my_call(s);
}

void my_call(int num)
{
        int i;

        if(num)
        {
        i = num%10;
        my_call(num/10);
        switch(i)
```

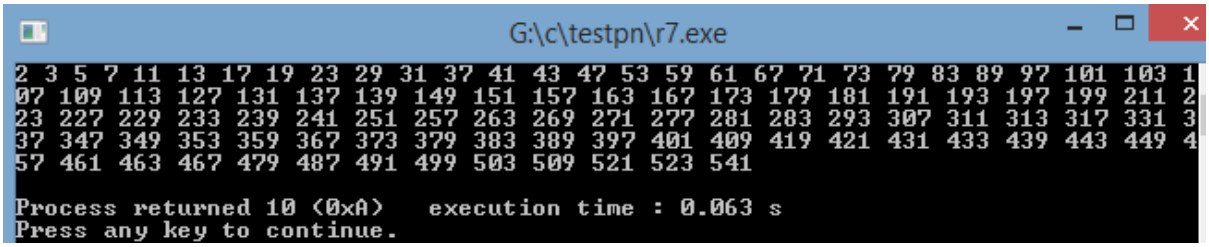
```
        {
                case 0:printf("Zero ");
                break;
                case 8:printf("Eight ");
                break;
                case 9:printf("Nine ");
                break;
                case 7:printf("Seven ");
                break;
                case 1:printf("One ");
                break;
                case 2:printf("Two ");
                break;
                case 3:printf("Three ");
                break;
                case 4:printf("Four ");
                break;
                case 5:printf("Five ");
                break;
                case 6:printf("Six ");
                break;
        }
        }
}
```


G:\c\testpn\r6.exe
Enter Number :
1234
One Two Three Four
Process returned 5 (0x5)   execution time : 1.580 s
Press any key to continue.

Write a recursive function to print first 100 prime numbers.

```
#include<stdio.h>

int my_prime_rec(int,int);

main()
{
	int a,i,j=2,c=0;

	for(i=1;c<100;i++)
	{
	a = my_prime_rec(i,j);
	if(a==i)
	{
	printf("%d ",i);
	c++;
	}
	}
	printf("\n");
}

int my_prime_rec(int n,int j)
{
	//static int i=2,t=0;
```

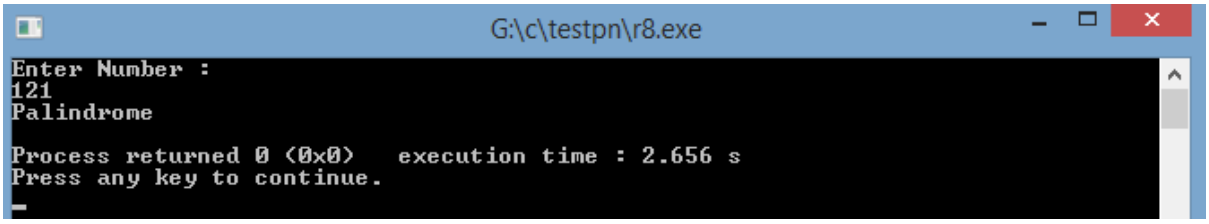
```
        if(j<n)
        {
        if(n % j == 0)
        return j;

        j=j+1;
        my_prime_rec(n,j);
        }
}
```



Write a recursive function to print the palindrome numbers in a given numbers.

```
#include<stdio.h>
int my_palin_rec(int);


main()
{
        int num,ans;


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


        ans=my_palin_rec(num);
        if(ans == num)
        printf("Palindrome\n");
        else
        printf("Not...\n");
}



int my_palin_rec(int num)
{
        static int s=0;
```

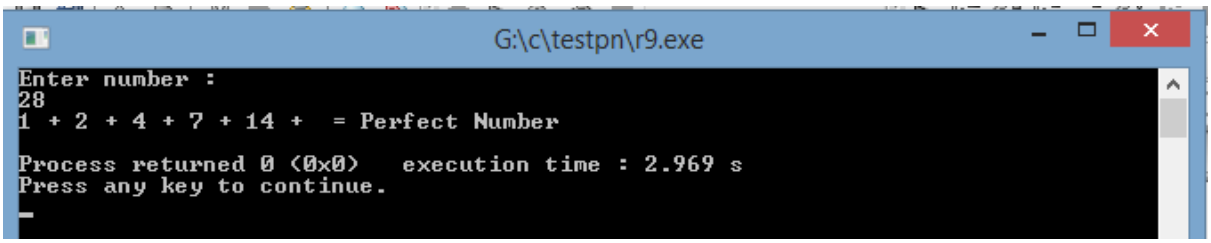
```
        if(num)
        {
        s = 10*s + num % 10;
        num=num/10;
        my_palin_rec(num);
        return s;
        }
}
```



Write a recursive function that finds whether a number is perfect or not.

```
#include<stdio.h>
int my_per_rec(int);

main()
{
        int num,ans;
        printf("Enter number : \n");
        scanf("%d",&num);

        ans = my_per_rec(num);
        if(ans==num)
        printf(" = Perfect Number\n");
        else
        printf("\nNot...\n");
}

int my_per_rec(int num)
{
        static int i=1,s=0,max=0;

        if(i < num)
```

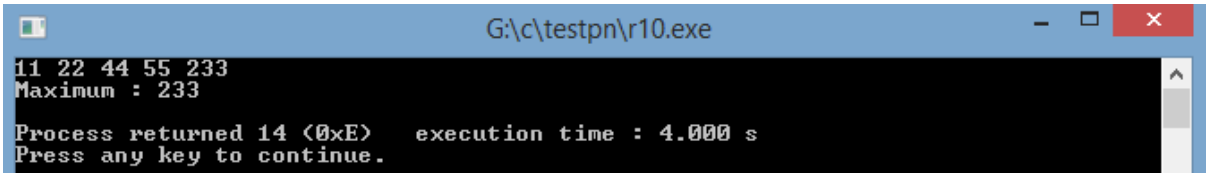
```
        {
        if(num % i == 0)
        {
                s = s + i;
                printf("%d + ",i);
        }
        i = i + 1;
        my_per_rec(num);
        return s;

        }
}
```



Write a recursive function to find the largest element in a given Unsorted array.

```
#include<stdio.h>
int max_rec(int*,int);
main()
{
	int a[5],i,ele,max;

	ele = sizeof(a)/sizeof(a[0]);
	for(i=0;i<ele;i++)
	{
	scanf("%d",&a[i]);
	}

	max = max_rec(a,ele);
	printf("Maximum : %d\n",max);
}

int max_rec(int*p,int ele)
{
	static int i=1,maxx=0;

	if(i<=ele)
	{
```

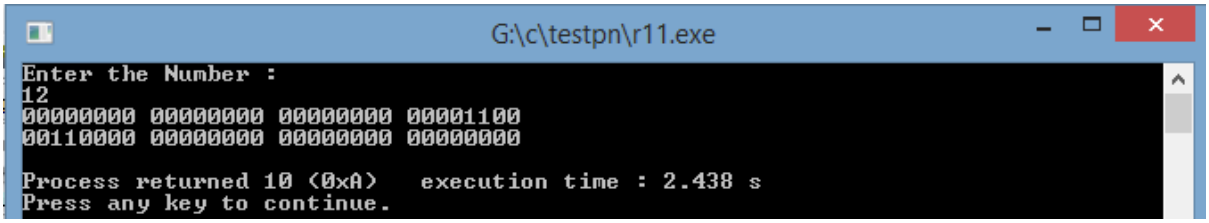
```
        if((*p) > maxx)
        maxx = *p;
        i++;
        max_rec(p+1,ele);
        return maxx;
        }
}
```



Write a recursive function to reverse the bits of a given number.

```
#include<stdio.h>
void rev(int*);
main()
{
	int num,i,k;
	printf("Enter the Number : \n");
	scanf("%d",&num);
	for(i=31;i>=0;i--)
	{
	printf("%d",num>>i&1);
	if(!(i%8))
	printf(" ");
	}
	printf("\n");
	rev(&num);
	for(i=31;i>=0;i--)
	{
	printf("%d",num>>i&1);
	if(!(i%8))
	printf(" ");
	}
	printf("\n");
}
```

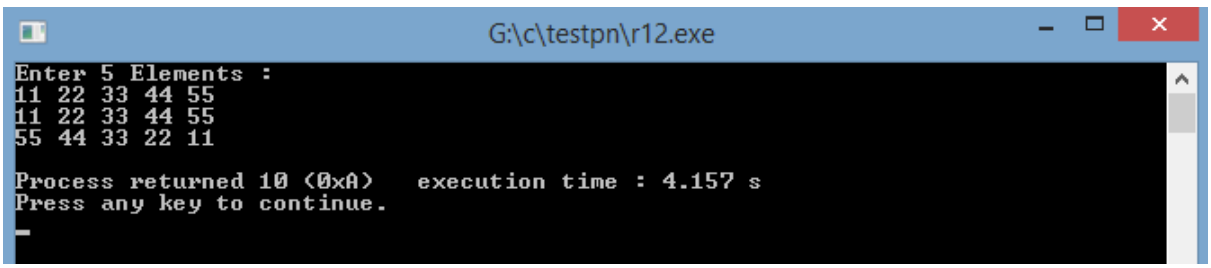
```
void rev(int*p)
{
	static int i=0,j=31,k;
	if(i<j)
	{
	if((*p >> i & 1) != (*p >> j & 1))
	{
		*p = *p ^ 1 << i;
		*p = *p ^ 1 << j;
	}
	i++;
	j--;
	rev(p);
	}
}
```



Write a recursive function to reverse the elements of a given array.

```
#include<stdio.h>
void my_ar(int*,int*);
main()
{
	int a[5],ele,i,*s;

	ele=sizeof(a)/sizeof(a[0]);

	printf("Enter %d Elements : \n",ele);
	for(i=0;i<ele;i++)
	{
	scanf("%d",&a[i]);
	}

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

	s=a+ele-1;
	my_ar(a,s);
	for(i=0;i<ele;i++)
```

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

}

void my_ar(int *p,int *q)
{
        int t;

        if(p < q)
        {
        t=*p;
        *p=*q;
        *q=t;
        my_ar(p+1,q-1);
        }
}
```



Write a recursive function to reverse the string. (Note : not just reverse printing character by character)

```
#include<stdio.h>
void str_rev(char *,char *);
main()
{
        char s[30],ch,*q;
        int i,j,len;
        printf("Enter String : \n");
        scanf("%s",s);

        printf("Originl : %s\n",s);
        for(i=0;s[i];i++);

        //len=i-1;

        q = s+i-1;

        str_rev(s,q);

        /*for(i=0,j=(strlen(s)-1);i<j;i++,j--)
        {
        ch=s[i];
        s[i]=s[j];
```

```
        s[j]=ch;
        }*/
        printf("Reverse : %s\n",s);
}

void str_rev(char*p, char *q)
{
        char c;
        if(p<q)
        {
        c = *p;
        *p = *q;
        *q = c;
        str_rev(p+1,q-1);
        }
}
```