

PATTERN PROGRAMMING

/*CLASS WORK -- programm 1

1

11

111

1111

*/

#include<stdio.h>

int fun(int n){

 if(n>0){

 fun(n-1);

 printf("1");

 }

}

int num(int n){

 if(n>0){

 num(n-1);

 }

 fun(n);

 printf("\n");

}

```
int main(){  
    num(4);  
    return 0;  
}
```

=====

OUTPUT:--

```
1  
11  
111  
1111
```

Process exited after 6.786 seconds with return value 0

Press any key to continue . . .

/*CLASS WORK -- programm 2

```
1  
11  
111  
1111
```

```
*/  
  
#include<stdio.h>  
  
int space(int num);  
  
int print(int num);  
  
int newline(int n);  
  
int n=4,o=3,f=0;  
  
int main()  
{  
    space(o);  
    return 0;  
}  
  
int space(int num)  
{  
    if(num>0)  
    {  
        printf(" ");  
        return space(num-1);  
    }  
  
    if(num==0)  
    {  
        print(f+1);  
    }  
}
```

```
    }  
    else  
    return;  
}  
  
int print(int num)  
{  
    if(num>0 && num<=n)  
    {  
        printf("*");  
        return print(num-1);  
    }  
    if(num==0)  
    {  
        newline(n);  
    }  
    else  
    return;  
}  
  
int newline(int n)  
{  
    if(n!=0)
```

```
        {printf("\n");  
        space(n-f++ -2);}  
  
        else  
  
        return;  
  
}
```

=====

OUTPUT:-

```
*  
  
**  
  
***  
  
****
```

Process exited after 6.413 seconds with return value 0

Press any key to continue . . .

/*CLASS WORK -- programm 3

1111

111

11

1

```
*/  
  
#include<stdio.h>  
  
int l=1,num=4;  
  
int print(int n);  
  
int newline(int n);  
  
int space(int n);  
  
int main()  
{  
    print(num);  
    return 0;  
}  
  
int print(int n)  
{  
    if(n>0)  
    {  
        printf("*");  
        return print(n-1);  
    }  
  
    if(n==0)  
        return newline(l);  
  
    return;  
}
```

```
}  
  
int newline(int n)  
{  
    if(n<4)  
    {printf("\n");  
    return space(l++);  
    }return;  
}
```

```
int space(int n)  
{  
    if(n==0)  
    return print(--num);  
    printf(" ");  
    return space(n-1);  
}
```

=====

OUTPUT:-

**

*

Process exited after 2.094 seconds with return value 0

Press any key to continue . . .

/*CLASS WORK -- programm 4

1111

111

11

1

*/

#include<stdio.h>

int num=4;

int sub=0;

int print(int n)

{

if(n==0)

return newline(num-1);

if(n>0)

{

printf("* ");

return print(n-1);


```

    }
}
int newline(int num)
{
    if(num>0)
    {
        printf("\n");
        return print(num-sub++);
    }
    return;
}
int main()
{
    print(4);
    return 0;
}

```

```

=====
=====

```

OUTPUT:-

```

* * * *
* * *
* *

```

*

Process exited after 22.38 seconds with return value 0

Press any key to continue . . .

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