

Fonksiyonlar



Suhap SAHİN
Onur GÖK

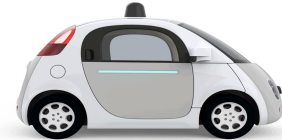
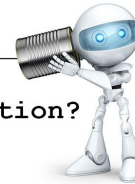
Fonksiyonlar

Easy
1x

```
#include<stdio.h>
void main(){
    printf("Merhaba Dünya");
}
```

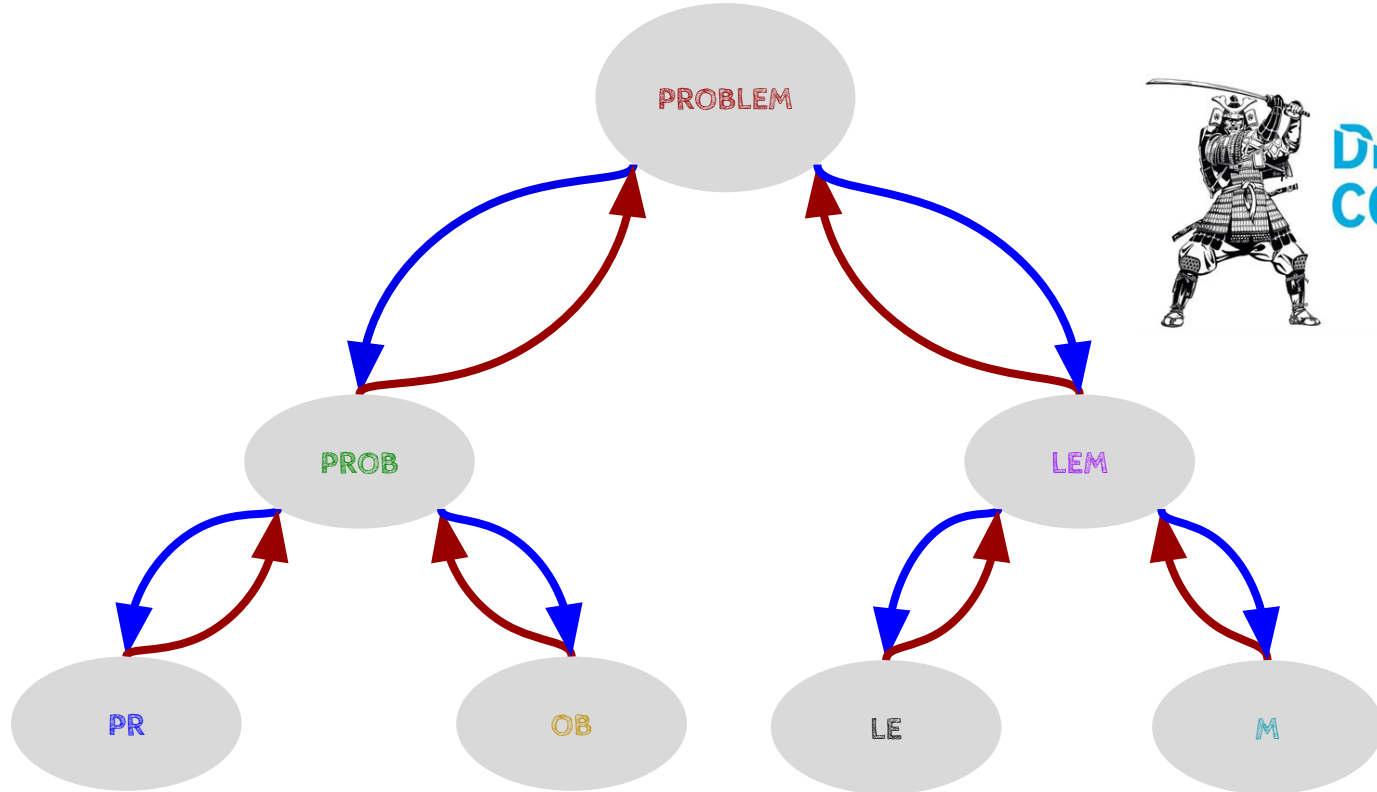


Speech
Recognition?



Hard
 ∞ x

Fonksiyonlar



DIVIDE AND
CONQUER

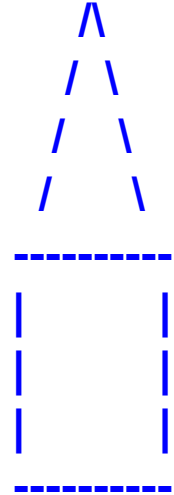
Fonksiyonlar



```
#include<stdio.h>
```

```
int main(    )
```

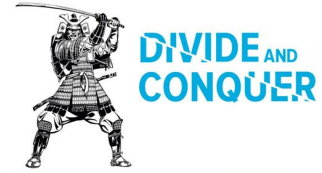
```
{
```



```
    return 0;
```

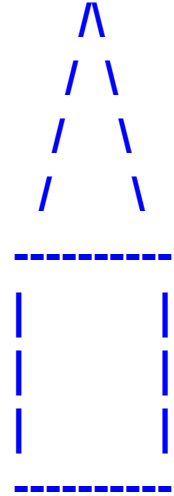
```
}
```

Fonksiyonlar



```
#include<stdio.h>
int main(    )
{
    printf( "  /\  \n" );
    printf( " /  \ \n" );
    printf( " /   \ \n" );
    printf( " /    \ \n" );
    printf( "-----\n" );
    printf( "|      |\n" );
    printf( "|      |\n" );
    printf( "|      |\n" );
    printf( "-----\n" );

    return 0;
}
```



Fonksiyonlar



DIVIDE AND CONQUER

```
#include<stdio.h>

int main(    )

{

printf( "   /\ \n" );

printf( " / \ \n" );

printf( "/  \n" );

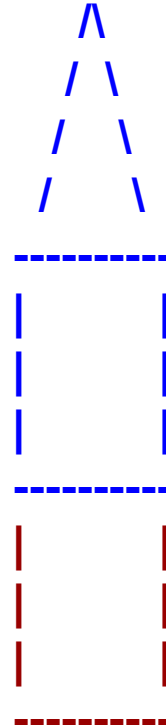
printf( "\n\n" );

printf( "|\n" );

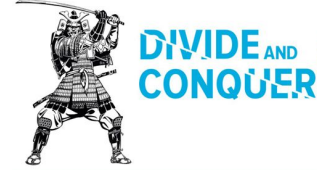
printf( "-----\n" );

return 0;

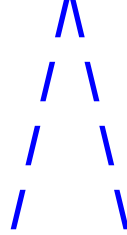
}
```



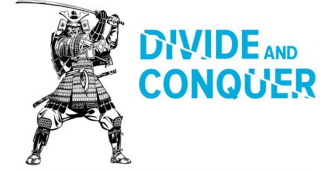
Fonksiyonlar



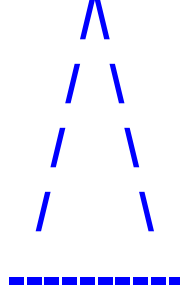
ÇATI



Fonksiyonlar



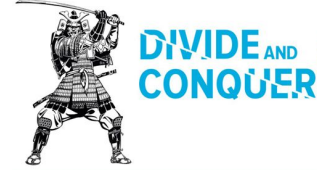
ÇATI



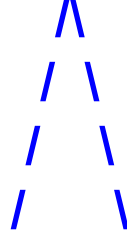
TABAN



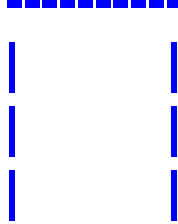
Fonksiyonlar



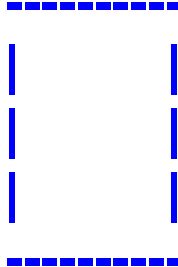
ÇATI



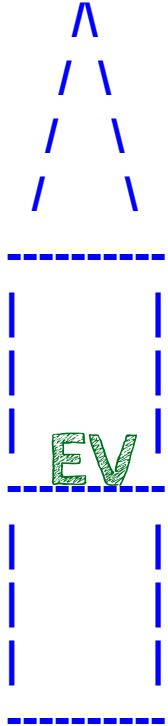
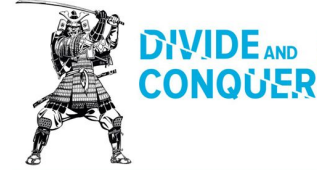
TABAN



DUVAR



Fonksiyonlar



=

ÇATI

+

TABAN

+

DUVAR

Fonksiyonlar

```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

```
{
```

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

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

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

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

```
}
```



DIVIDE AND
CONQUER

Fonksiyonlar

```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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



DIVIDE AND
CONQUER

Fonksiyonlar

```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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

```
void taban_ciz( )
```

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



DIVIDE AND
CONQUER

Fonksiyonlar



```
#include<stdio.h>
void catiyi_ciz( )
{
    printf( "   /\   \n" );
    printf( "  /  \  \n" );
    printf( " /    \ \n" );
    printf( "/      \ \n" );
}
void duvar_ciz( )
{
    printf( "|      |\n" );
    printf( "|      |\n" );
    printf( "|      |\n" );
}
void taban_ciz( )
{
    printf( "-----\n" );
}
```

```
int main( )
{
    catiyi_ciz( );
```



```
    return 0;
}
```

Fonksiyonlar



```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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

```
void taban_ciz( )
```

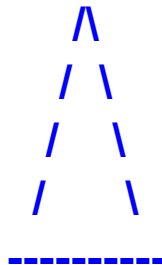
```
{  
    printf( "-----\n" );  
}
```

```
int main( )
```

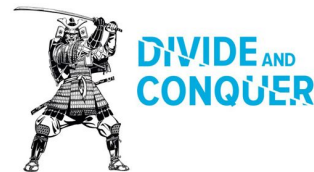
```
{  
    catiyi_ciz( );  
    taban_ciz( );
```

```
    return 0;
```

```
}
```



Fonksiyonlar



```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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

```
void taban_ciz( )
```

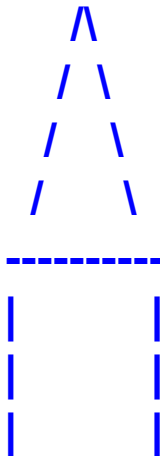
```
{  
    printf( "-----\n" );  
}
```

```
int main( )
```

```
{  
    catiyi_ciz( );  
    taban_ciz( );  
    duvar_ciz( );  
}
```

```
return 0;
```

```
}
```



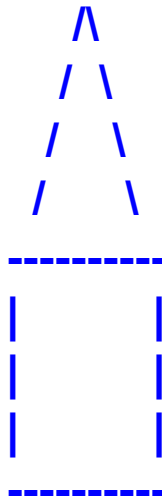
Fonksiyonlar



```
#include<stdio.h>
void catiyi_ciz( )
{
    printf( "  /\  \n" );
    printf( " /  \ \n" );
    printf( "/  \ \ \n" );
    printf( "/   \ \ \n" );
}
void duvar_ciz( )
{
    printf( "|      |\n" );
    printf( "|      |\n" );
    printf( "|      |\n" );
}
void taban_ciz( )
{
    printf( "-----\n" );
}
```

```
int main( )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );

    return 0;
}
```



Fonksiyonlar



DIVIDE AND
CONQUER

```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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

```
void taban_ciz( )
```

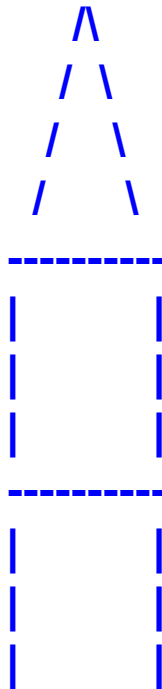
```
{  
    printf( "-----\n" );  
}
```

```
int main( )
```

```
{  
    catiyi_ciz( );  
    taban_ciz( );  
    duvar_ciz( );  
    taban_ciz( );  
    duvar_ciz( );  
}
```

```
return 0;
```

```
}
```



Fonksiyonlar



DIVIDE AND
CONQUER

```
#include<stdio.h>
```

```
void catiyi_ciz( )
```

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

```
void duvar_ciz( )
```

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

```
void taban_ciz( )
```

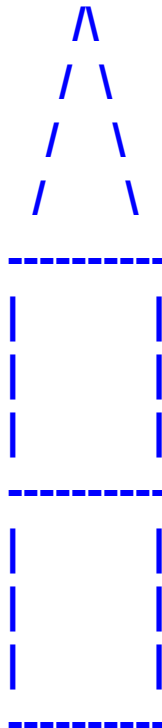
```
{  
    printf( "-----\n" );  
}
```

```
int main( )
```

```
{  
    catiyi_ciz( );  
    taban_ciz( );  
    duvar_ciz( );  
    taban_ciz( );  
    duvar_ciz( );  
    taban_ciz( );  
}
```

```
return 0;
```

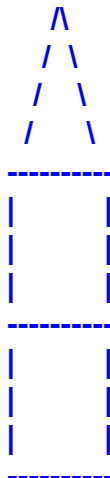
```
}
```



Fonksiyonlar



```
#include<stdio.h>
void catiyi_ciz( )
{
    printf( "   /\n" );
    printf( "  /\n" );
    printf( " /\n" );
    printf( "/\n" );
}
void duvar_ciz( )
{
    printf( "| |\n" );
    printf( "| |\n" );
    printf( "| |\n" );
}
void taban_ciz( )
{
    printf( "-----\n" );
}
int main( )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
}
```



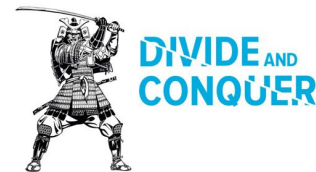
```
#include<stdio.h>
int main( )
{
    printf( "   /\n" );
    printf( "  /\n" );
    printf( " /\n" );
    printf( "/\n" );
    printf( "-----\n" );
    printf( "| |\n" );
    printf( "| |\n" );
    printf( "| |\n" );
    printf( "-----\n" );
    printf( "| |\n" );
    printf( "| |\n" );
    printf( "| |\n" );
    printf( "-----\n" );
}
```

```
return 0;
}
```

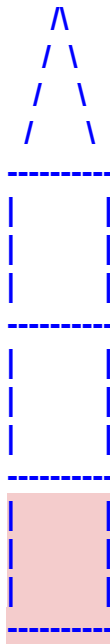
```
return 0;
```

```
}
```

Fonksiyonlar

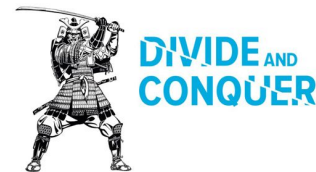


```
#include<stdio.h>
void catiyi_ciz( )
{
    printf( "   /\n   ");
    printf( "  /  \n  ");
    printf( " /   \n");
    printf( "/    \n");
}
void duvar_ciz( )
{
    printf( "|      |\n");
    printf( "|      |\n");
    printf( "|      |\n");
}
void taban_ciz( )
{
    printf( "-----\n");
}
int main( )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    return 0;
}
```

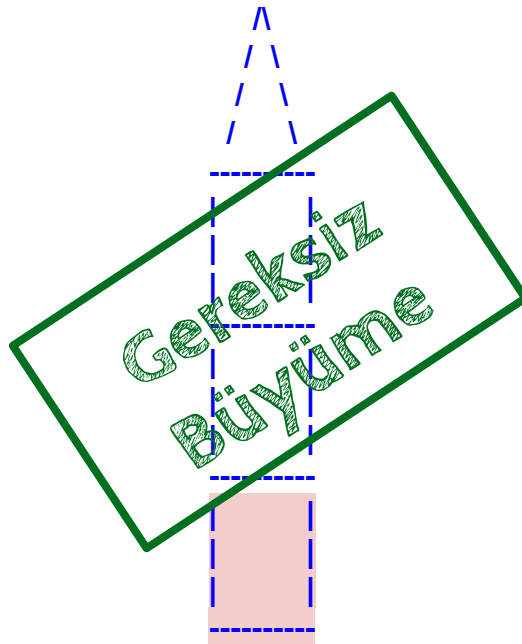


```
#include<stdio.h>
int main( )
{
    printf( "   /\n   ");
    printf( "  /  \n  ");
    printf( " /   \n");
    printf( "/    \n");
    printf( "-----\n");
    printf( "|      |\n");
    printf( "|      |\n");
    printf( "|      |\n");
    printf( "-----\n");
    printf( "|      |\n");
    printf( "|      |\n");
    printf( "|      |\n");
    printf( "-----\n");
    return 0;
}
```

Fonksiyonlar



```
#include<stdio.h>
void catiyi_ciz( )
{
    printf( "   /\n" );
    printf( "  / \n" );
    printf( " /  \n" );
    printf( "/   \n" );
}
void duvar_ciz( )
{
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
}
void taban_ciz( )
{
    printf( "-----\n" );
}
int main( )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    return 0;
}
```



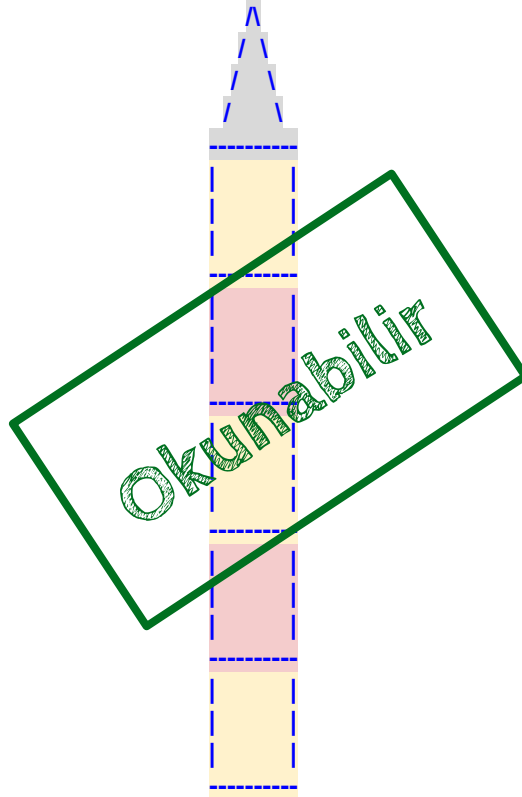
```
#include<stdio.h>
int main( )
{
    printf( "   /\n" );
    printf( "  / \n" );
    printf( " /  \n" );
    printf( "/   \n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    return 0;
}
```

Fonksiyonlar



DIVIDE AND
CONQUER

```
#include<stdio.h>
void catiyi_ciz( void )
{
    printf( "  /\n" );
    printf( " /  \n" );
    printf( "/   \n" );
    printf( "/   \n" );
}
void duvar_ciz( void )
{
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
}
void taban_ciz( void )
{
    printf( "-----\n" );
}
int main( void )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    return 0;
}
```



```
#include<stdio.h>
int main( void )
{
    printf( "  /\n" );
    printf( " /  \n" );
    printf( "/   \n" );
    printf( "/   \n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    return 0;
}
```

Fonksiyonlar



DIVIDE AND CONQUER

```
#include<stdio.h>
void catiyi_ciz( void )
{
    printf( "  /\n  " );
    printf( " /  \n" );
    printf( " /  \n" );
    printf( "/  \n" );
}
void duvar_ciz( void )
{
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "|  \n" );
}
void taban_ciz( void )
{
    printf( "-----\n" );
}
int main( void )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    return 0;
}
```

taban çizirim

fonksiyon çağırırım

her is yapılır

```
#include<stdio.h>
int main( void )
{
    printf( "  /\n  " );
    printf( " /  \n" );
    printf( " /  \n" );
    printf( "/  \n" );
    printf( "-----\n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "-----\n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "-----\n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "-----\n" );
    printf( "|  \n" );
    printf( "|  \n" );
    printf( "-----\n" );
    return 0;
}
```


Fonksiyonlar



DIVIDE AND CONQUER

```
#include<stdio.h>
void catiyi_ciz( void )
{
    printf( "  /\n" );
    printf( " /  \n" );
    printf( "/   \n" );
    printf( "/   \n" );
}
void duvar_ciz( void )
{
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
}
void taban_ciz( void )
{
    printf( "-----\n" );
}
int main( void )
{
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    return 0;
}
```

taban çizirim

fonksiyon çağırırım

her is yapılır

Procedural
abstraction

```
#include<stdio.h>
int main( void )
{
    printf( "  /\n" );
    printf( " /  \n" );
    printf( "/   \n" );
    printf( "/   \n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    printf( "|   |\n" );
    printf( "|   |\n" );
    printf( "-----\n" );
    return 0;
}
```


Fonksiyonlar



DIVIDE AND CONQUER

```
#include<stdio.h>
void catiyi_ciz( void )
{
    printf( "  /\n  " );
    printf( " /  \n " );
    printf( " /  \n " );
    printf( " /  \n " );
}
```

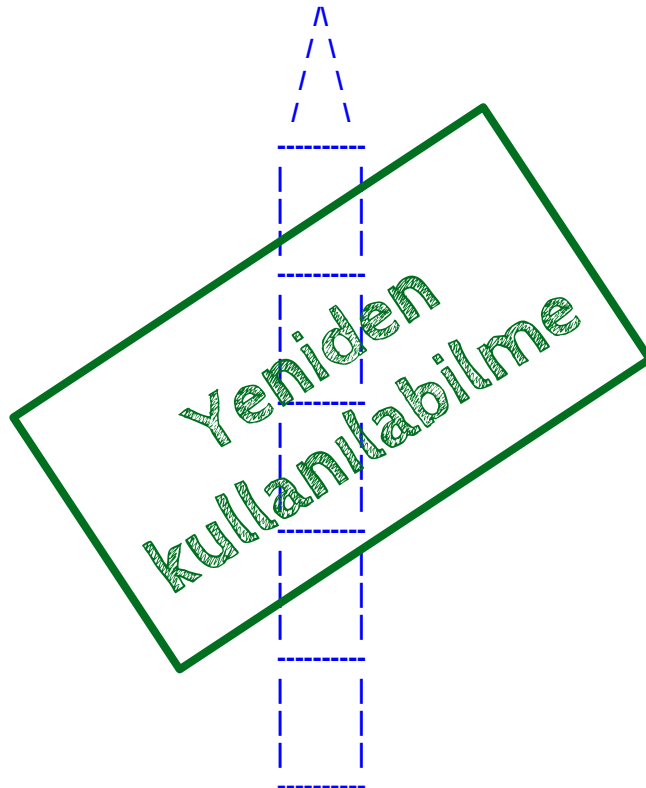
```
void duvar_ciz( void )
{
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
}
```

```
void taban_ciz( void )
{
    printf( "-----\n" );
}
int main( void )
{
```

```
    catiyi_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
    duvar_ciz( );
    taban_ciz( );
```

```
    return 0;
}
```

1



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

```
    printf( "  /\n  " );
    printf( " /  \n " );
    printf( " /  \n " );
    printf( " /  \n " );
    printf( "-----\n" );
```

```
1    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "-----\n" );
```

```
2    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "-----\n" );
```

```
3    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "-----\n" );
```

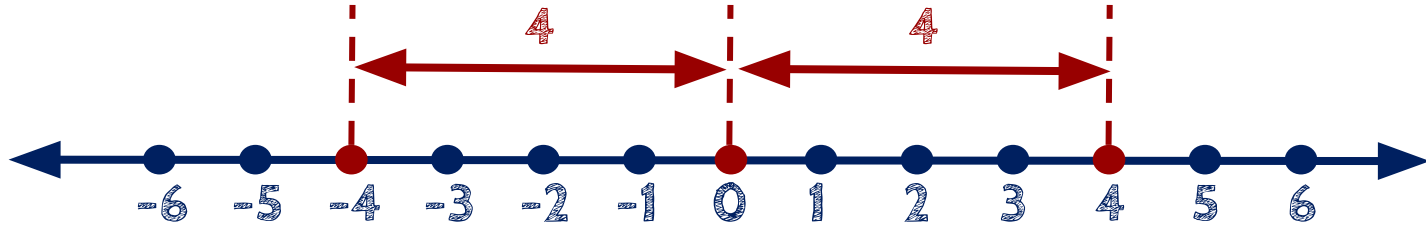
```
4    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "-----\n" );
```

```
5    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "|  |\n" );
    printf( "-----\n" );
```

```
    return 0;
```

```
}
```

Mutlak Deger



$$|-4| = |4|$$

Mutlak Deger

```
#include <stdio.h>
#include <stdlib.h>

int main( ) {
    int sayi, sonuc;
    printf("sayi girin:");
    scanf("%d", &sayi);

    return 0;
}
```

main()

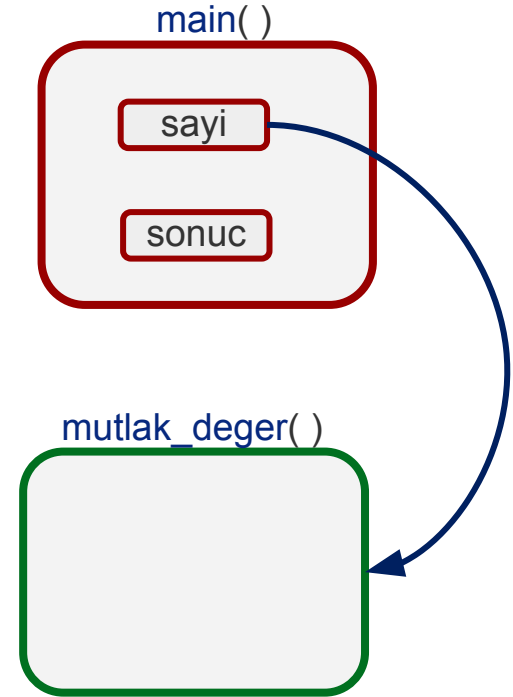
sayi

sonuc

Mutlak Deger

```
#include <stdio.h>
#include <stdlib.h>
```

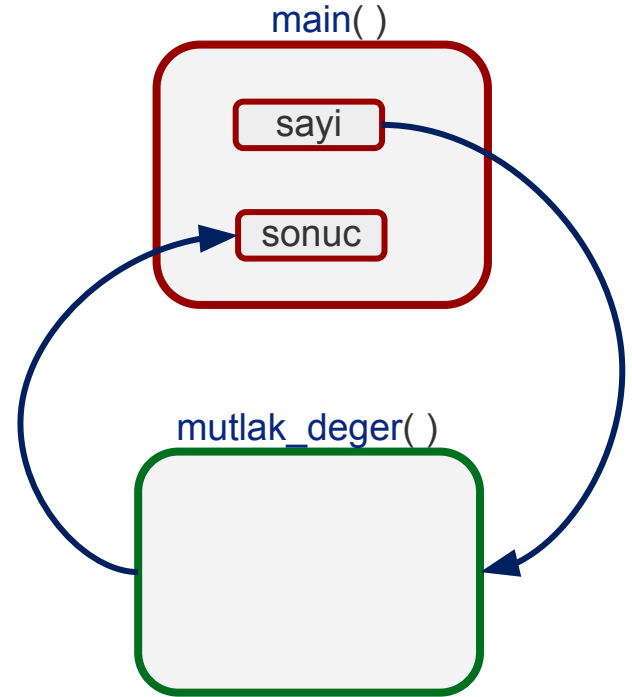
```
int main( ) {
    int sayi, sonuc;
    printf("sayi girin:");
    scanf("%d", &sayi);
        mutlak_deger(sayi);
    printf("mutlak deger: %d\n", sonuc);
    return 0;
}
```



Mutlak Deger

```
#include <stdio.h>
#include <stdlib.h>
```

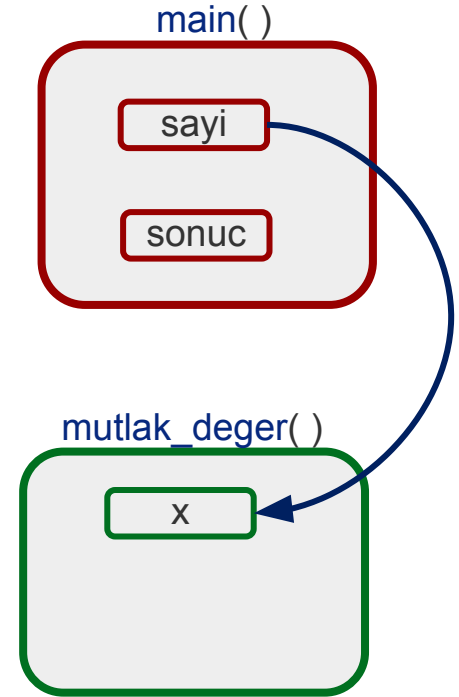
```
int main( ) {
    int sayi, sonuc;
    printf("sayi girin:");
    scanf("%d", &sayi);
    sonuc = mutlak_deger(sayi);
    printf("mutlak deger: %d\n", sonuc);
    return 0;
}
```



Mutlak Deger

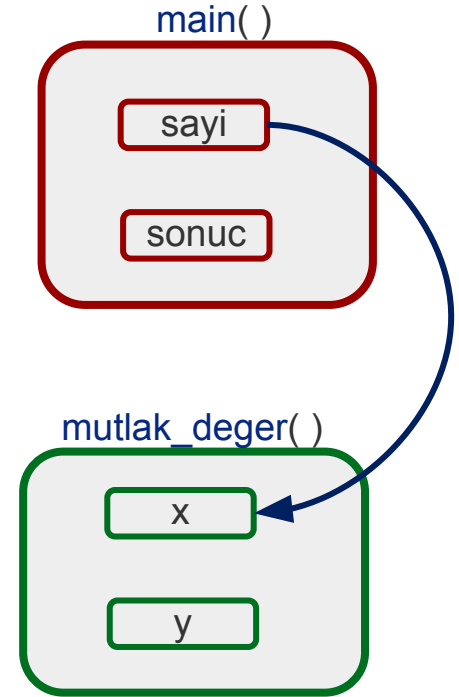
```
int mutlak_deger( int x ) {
```

```
}
```



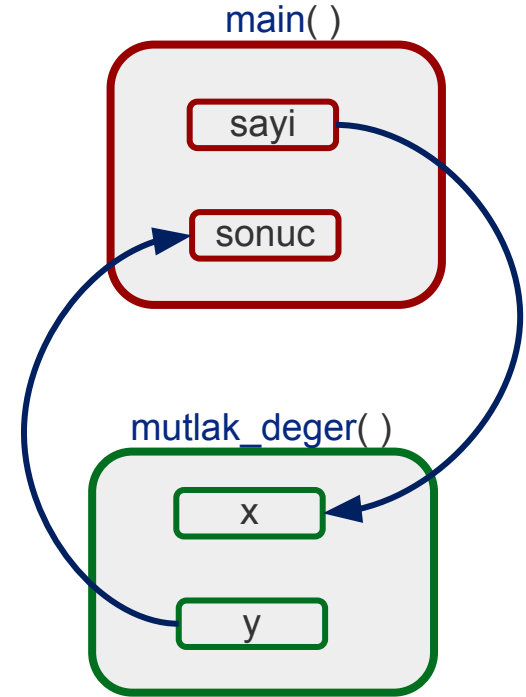
Mutlak Deger

```
int mutlak_deger( int x ) {  
    int y;  
    if (x >= 0)  
        y = x;  
    else  
        y = -1 * x;  
}
```



Mutlak Deger

```
int mutlak_deger( int x ) {  
    int y;  
    if (x >= 0)  
        y = x;  
    else  
        y = -1 * x;  
    return y;  
}
```



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
```

yaz()

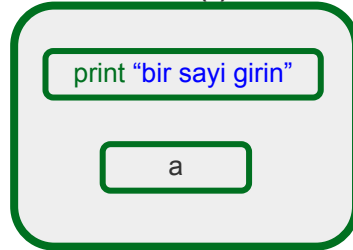
sayi

print sayi

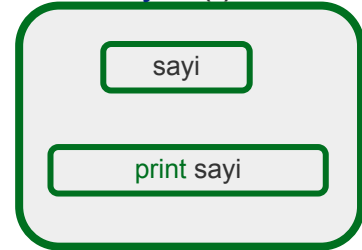
printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
```

oku()



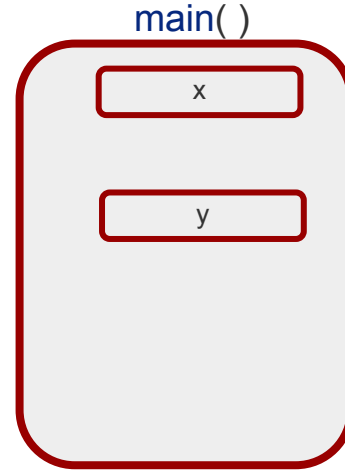
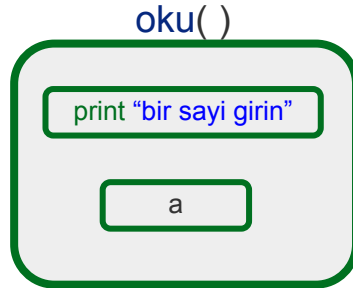
yaz()



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;

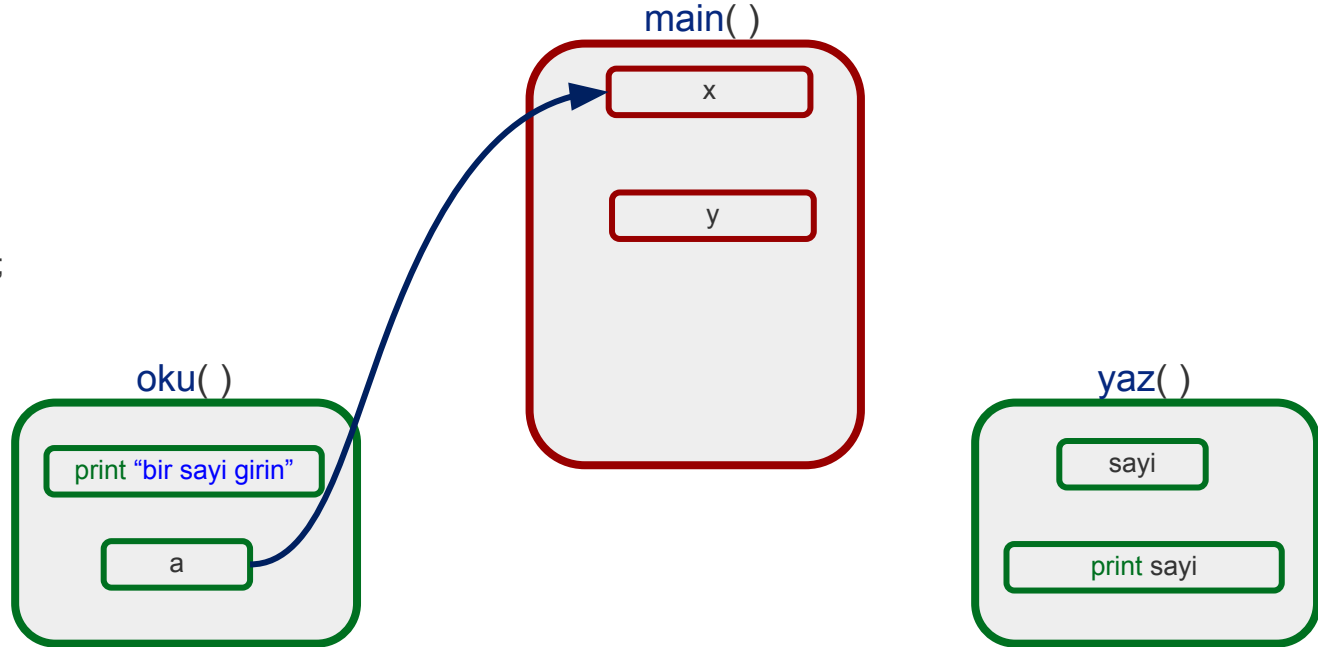
    return 0;
}
```



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;
    x = oku();

    return 0;
}
```



printf & scanf

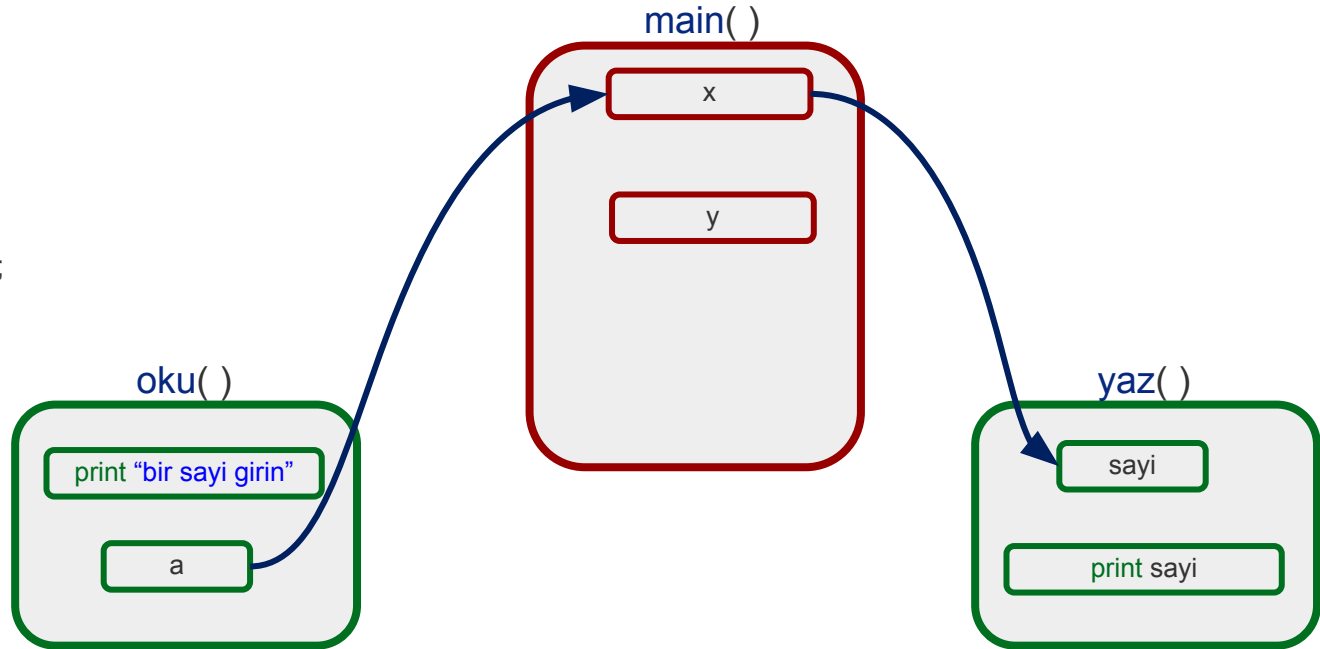
```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
```

```
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
```

```
int main() {
    int x, y;
    x = oku();
    yaz(x);
```

```
    return 0;
```

```
}
```



printf & scanf

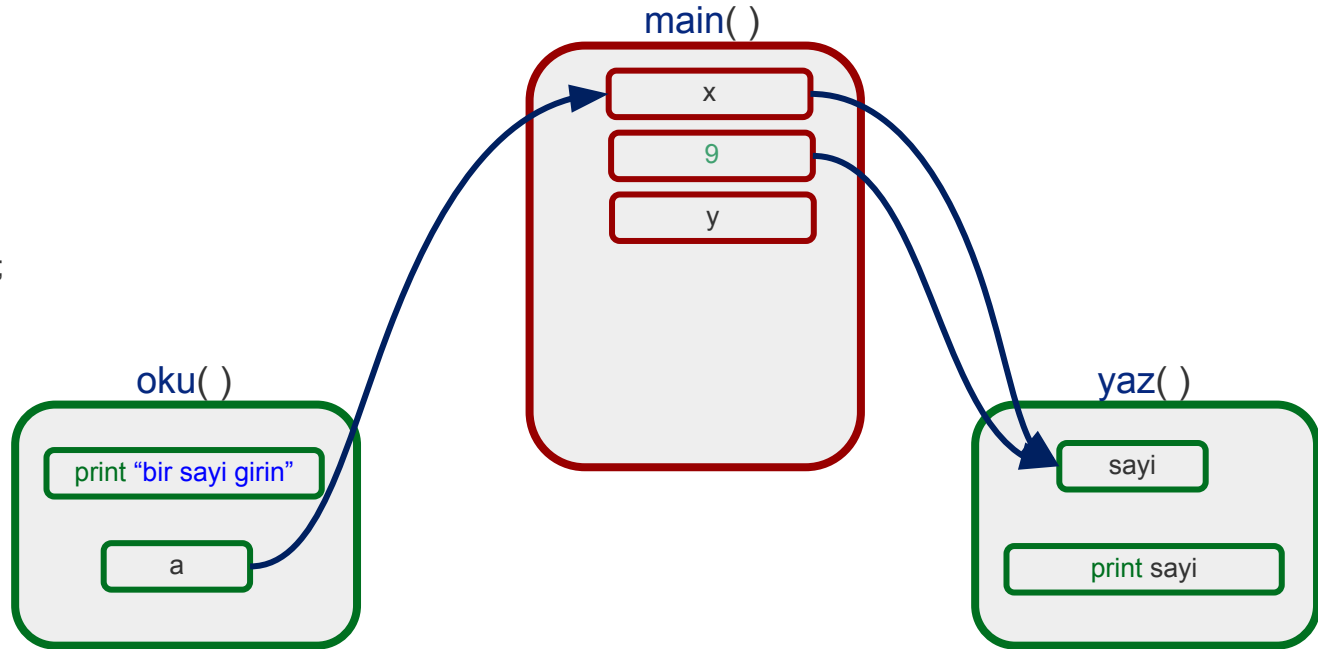
```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
```

```
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
```

```
int main() {
    int x, y;
    x = oku();
    yaz(x);
    yaz(9);

```

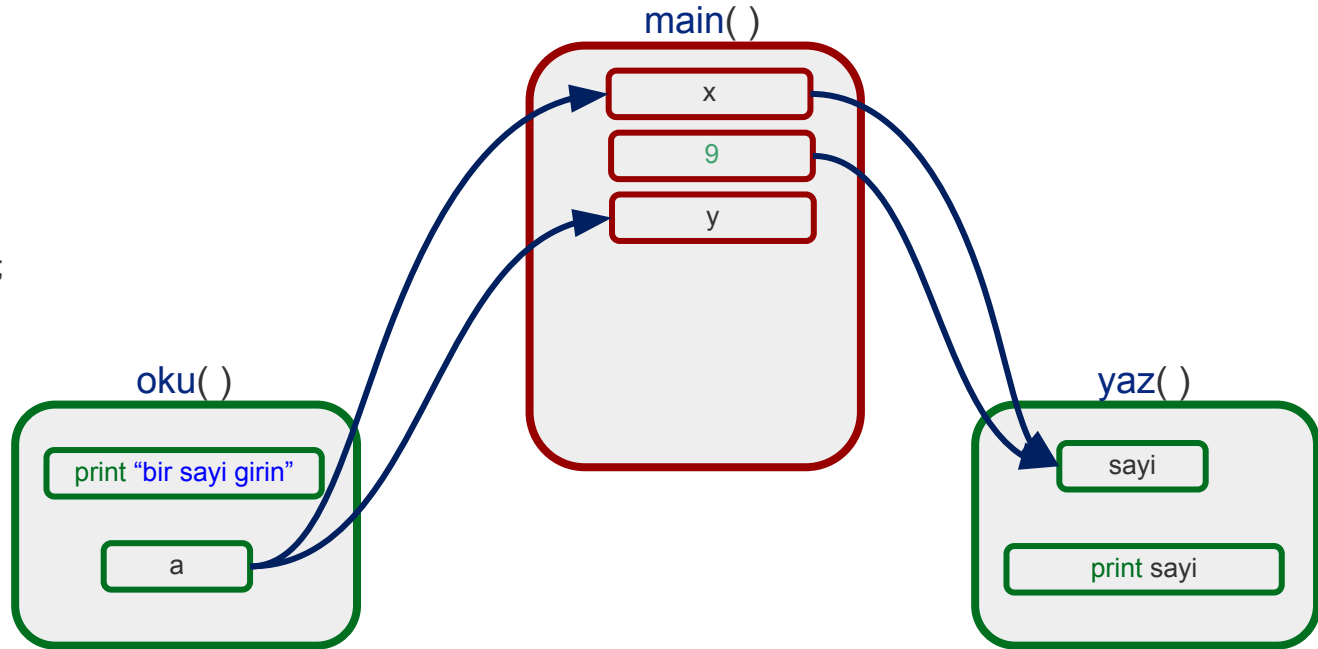
```
    return 0;
}
```



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;
    x = oku();
    yaz(x);
    yaz(9);
    y = oku();

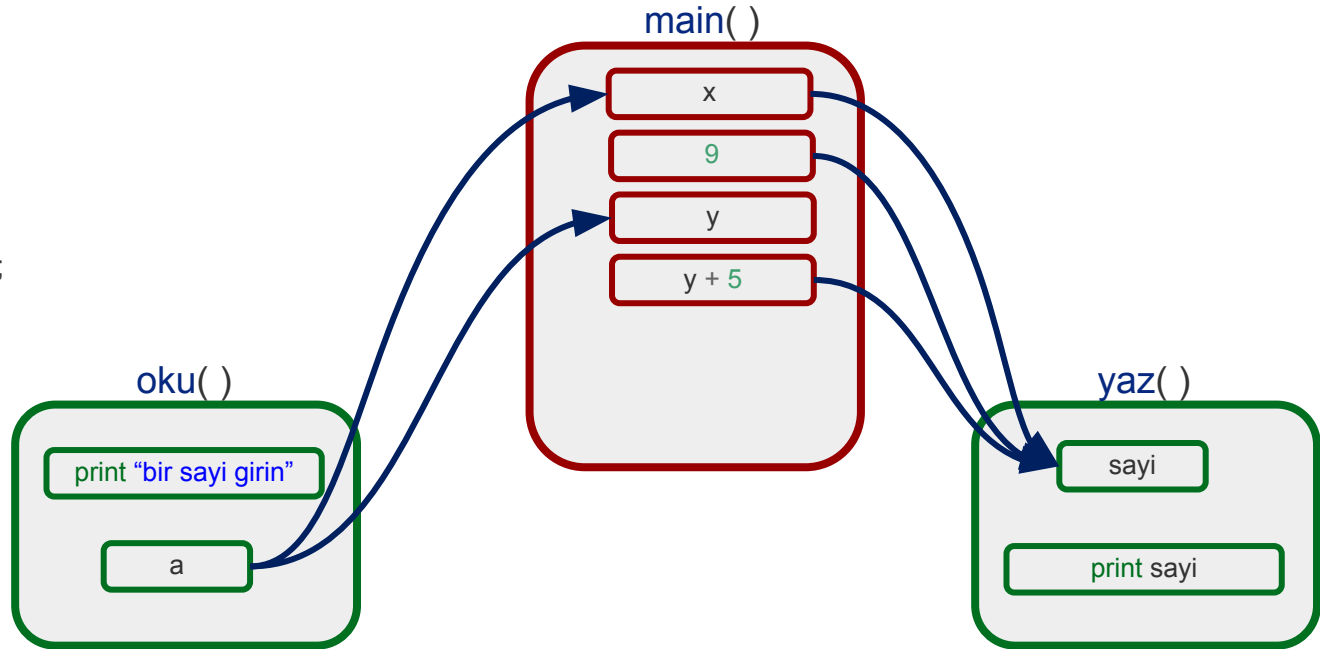
    return 0;
}
```



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;
    x = oku();
    yaz(x);
    yaz(9);
    y = oku();
    yaz(y + 5);

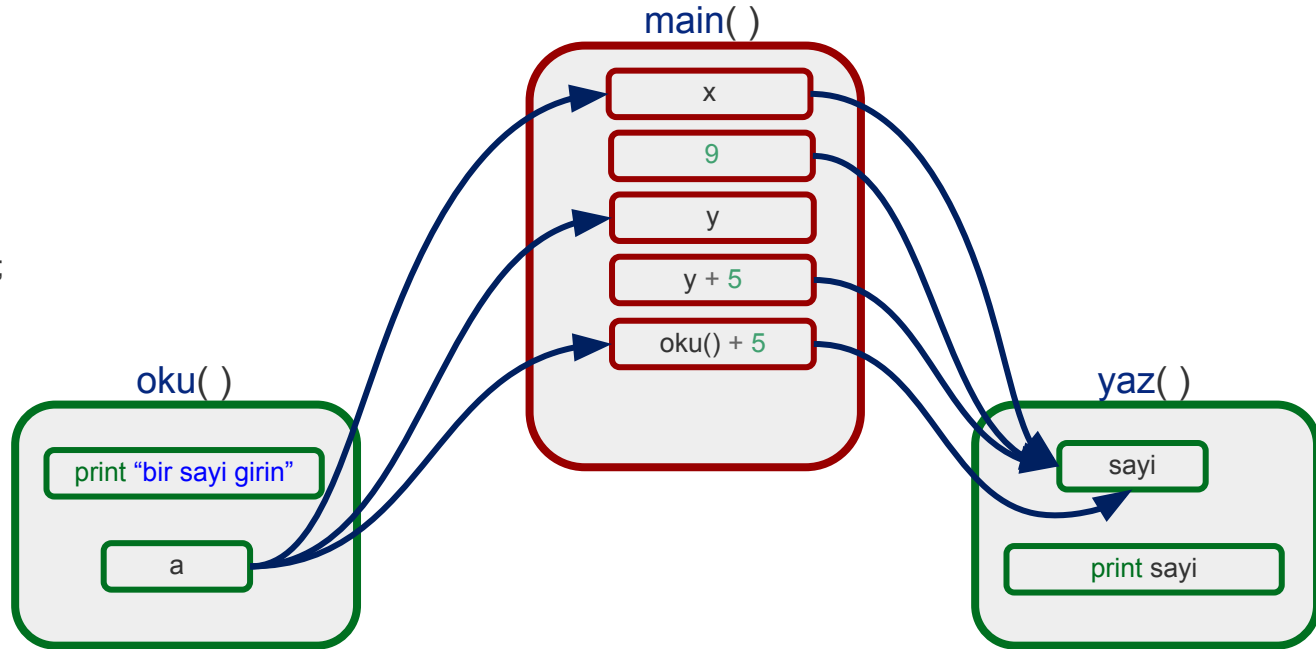
    return 0;
}
```



printf & scanf

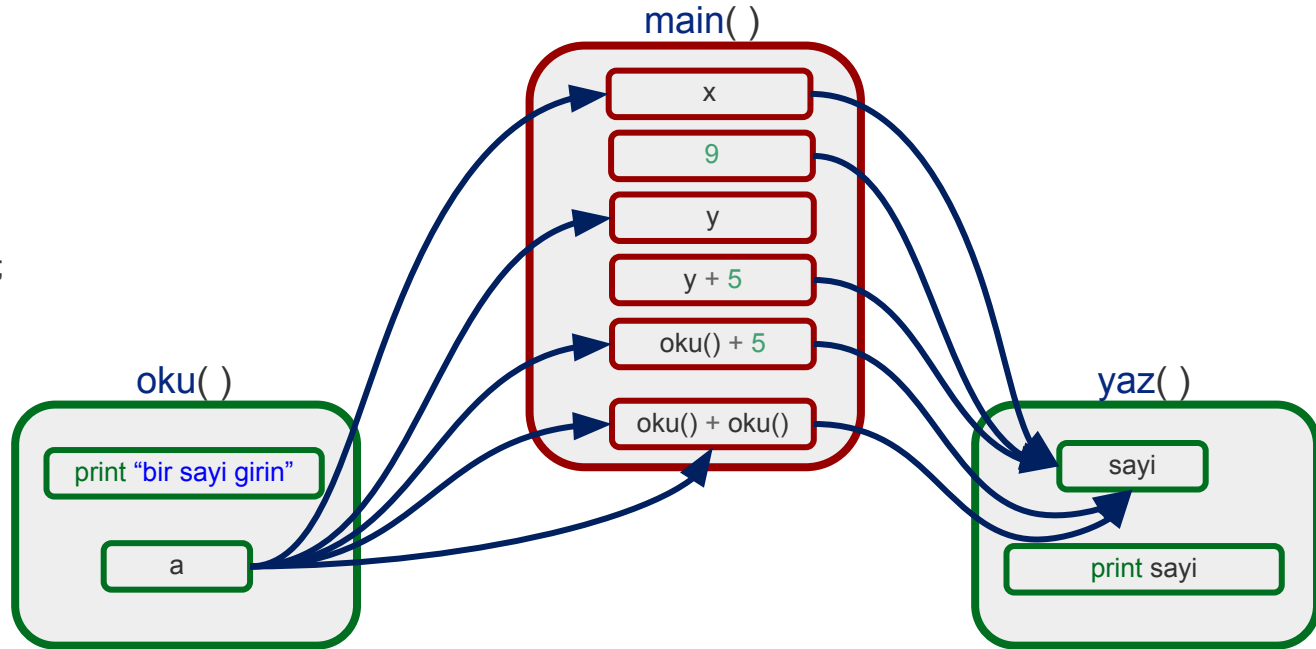
```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;
    x = oku();
    yaz(x);
    yaz(9);
    y = oku();
    yaz(y + 5);
    yaz( oku() + 5);

    return 0;
}
```



printf & scanf

```
#include <stdio.h>
#include <stdlib.h>
void yaz(int sayi) {
    printf("%d\n", sayi);
}
int oku() {
    int a;
    printf("bir sayi girin:");
    scanf("%d", &a);
    return a;
}
int main() {
    int x, y;
    x = oku();
    yaz(x);
    yaz(9);
    y = oku();
    yaz(y + 5);
    yaz( oku() + 5);
    yaz( oku() + oku() );
    return 0;
}
```



Ucgen

analiz:

1. satir 1 tane x
2. satir 2 tane x
3. satir 3 tane x
4. satir 4 tane x
5. satir 5 tane x
6. satir 6 tane x
7. satir 7 tane x
8. satir 8 tane x
9. satir 9 tane x

x

xx

xxx

x

xx

x

xx

xxx

xxxx



DIVIDE AND
CONQUER

Ucgen

analiz:

1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x

x

xx

xxx

x

xx

x

xx

xxx

xxxxx



DIVIDE AND
CONQUER

Ucgen

analiz:

1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x
1. satirda	1 tane x
2. satirda	2 tane x

x

xx

xxx

x

xx

x

xx

xxx

xxxxx



DIVIDE AND
CONQUER

Ucgen

analiz:

1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x
1. satirda	1 tane x
2. satirda	2 tane x
1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x
4. satirda	4 tane x

x

xx

xxx

x

xx

x

xx

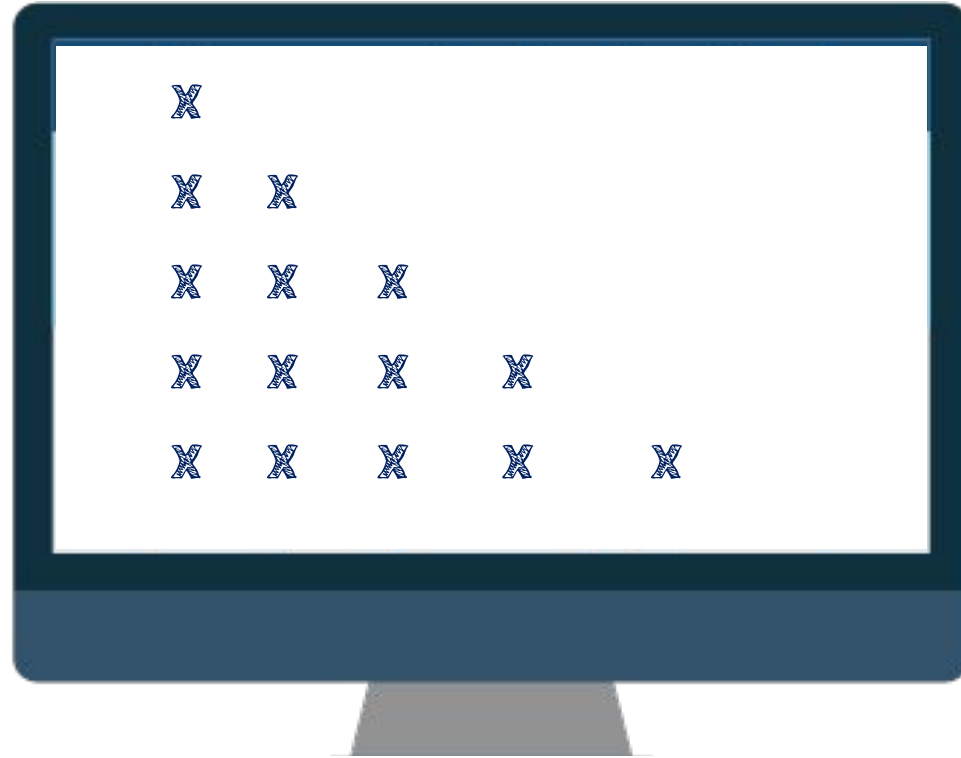
xxx

xxxxx



DIVIDE AND
CONQUER

Hatırlatma



Hatırlatma

```
#include <stdio.h>
```

```
int main() {
```

```
    int i, j;
```

```
    for (i = 1 ; i <= 5 ; i++) {
```

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

```
    }
```

```
    return 0;
```

```
}
```

satir =5

sutun = 5

x					i=1;	j=1;	x=1
x	x				i=2;	j=1, j=2;	x=2
x	x	x			i=3;	j=1, j=2, j=3	x=3
x	x	x	x		i=4;	j=1, j=2, j=3, j=4	x=4
x	x	x	x	x	i=5;	j=1, j=2, j=3, j=4, j=5	x=5

Hatırlatma

```
#include <stdio.h>
```

```
int main() {
```

```
    int i, j;
```

```
    for (i = 1 ; i <= 5 ; i++) {
```

```
        for (j = 1 ; j <= i ; j++) {
```

```
            printf("x");
```

```
        }
```

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

```
    }
```

```
    return 0;
```

```
}
```

satir =5

sutun = 5

x					i=1;	j=1;	x=1
x	x				i=2;	j=1, j=2;	x=2
x	x	x			i=3;	j=1, j=2, j=3	x=3
x	x	x	x		i=4;	j=1, j=2, j=3, j=4	x=4
x	x	x	x	x	i=5;	j=1, j=2, j=3, j=4, j=5	x=5

Ucgen

```
#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}
```

```
x
xx
xxx
x
xx
x
xx
xxx
xxxxx
```



DIVIDE AND CONQUER

Ucgen

```
#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

int main() {
    ucgen_ciz(3);

    return 0;
}
```

```
x
xx
xxx
x
xx
x
xx
xxx
xxxxx
```



DIVIDE AND CONQUER

Ucgen

```
#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

int main() {
    ucgen_ciz(3);
    ucgen_ciz(2);

    return 0;
}
```

```
x
xx
xxx
x
xx
x
xx
xxx
xxxxx
```



DIVIDE AND CONQUER

Ucgen

```
#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

int main() {
    ucgen_ciz(3);
    ucgen_ciz(2);
    ucgen_ciz(4);
    return 0;
}
```

```
x
xx
xxx
x
xx
x
xx
xxx
xxxxx
```



**DIVIDE AND
CONQUER**

Ucgen

analiz:

1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x
4. satirda	4 tane x

x

xx

xxx

xxxx

xxx

xx

x



DIVIDE AND
CONQUER

Ucgen

analiz:

1. satirda	1 tane x
2. satirda	2 tane x
3. satirda	3 tane x
4. satirda	4 tane x
1. satirda	3 tane x
2. satirda	2 tane x
3. satirda	1 tane x

x

xx

xxx

xxxx

xxx

xx

x



DIVIDE AND
CONQUER

```
#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}
```

```
int main() {
    ucgen_ciz(4);

    return 0;
}
```

Ucgen

X

XX

XXX

XXXX

XXX

XX

X



DIVIDE AND
CONQUER

```

#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

void ters_ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {

        printf("\n");
    }
}

int main() {
    ucgen_ciz(4);
    ters_ucgen_ciz(3);
    return 0;
}

```

Ucgen

X

XX

XXX

XXXX

XXX

XX

X



DIVIDE AND
CONQUER

```

#include <stdio.h>
#include <stdlib.h>
void ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

void ters_ucgen_ciz(int x) {
    int i, j;
    for (i = 1 ; i <= x ; i++) {
        for (j = 1 ; j <= x-i+1 ; j++) {
            printf("*");
        }
        printf("\n");
    }
}

int main() {
    ucgen_ciz(4);
    ters_ucgen_ciz(3);
    return 0;
}

```

Ucgen

X

XX

XXX

XXXX

XXX

XX

X



DIVIDE AND
CONQUER

Double Equality

```
#include <stdio.h>
#include <stdlib.h>
int main() {
    double x = 1.2;
    double y = 5.3;
    double z = y - 4.1;

    return 0;
}
```



Double Equality

```
#include <stdio.h>
#include <stdlib.h>
int main() {
    double x = 1.2;
    double y = 5.3;
    double z = y - 4.1;
    if ( z == x)
        printf("esit\n");
    else
        printf("esit degil\n");
    return 0;
}
```



Double Equality

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int main() {  
    double x = 1.2;  
    double y = 5.3;  
    double z = y - 4.1;
```

```
    return 0;
```

```
}
```

HATA PAYI

0.0001

Double Equality

```
#include <stdio.h>
#include <stdlib.h>
```

```
int main() {
    double x = 1.2;
    double y = 5.3;
    double z = y - 4.1;
    if ( esit_mi(x, z, 0.0001) == 1)
        printf("esit\n");
    else
        printf("esit degil\n");
    return 0;
}
```

HATA PAYI

0.0001

Double Equality

```
#include <stdio.h>
#include <stdlib.h>
int esit_mi(double A, double B, double hata_payi) {
    if (fabs(A - B) < hata_payi) {
        return 1;
    } else {
        return 0;
    }
}
int main() {
    double x = 1.2;
    double y = 5.3;
    double z = y - 4.1;
    if ( esit_mi(x, z, 0.0001) == 1)
        printf("esit\n");
    else
        printf("esit degil\n");
    return 0;
}
```

HATA PAYI

0.0001

Asal Sayı

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

23 asal mıdır?

23 $\leq 4 \times 4$

23 $\geq P \times P$

2 $\leq 23/2$

3 $\leq 23/3$

23 $\geq 4 \times 4$

4 $\leq 23/4$

5 $\leq 23/5$



2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 ...

Asal Sayı

```
#include <stdio.h>
#include <stdlib.h>
int asal_mi(int sayi) {
    int j,i=sayi;
    for(j = 2; j <= (i/j); j++)
        if(!(i%j)) break;
    if(j > (i/j)) return 1;
    return 0;
}
```

$$\underline{23 \leq 4 \times 4}$$

$$j \quad 2 \leq \quad (i/j) \quad 23/2$$

$$j \quad 3 \leq \quad (i/j) \quad 23/3$$

$$j \quad 4 \leq \quad (i/j) \quad 23/4$$

$$j \quad 5 \leq \quad \text{X} \quad (i/j) \quad 23/5$$

Asal Sayı

```
#include <stdio.h>
#include <stdlib.h>
int asal_mi(int sayi) {
    int j,i=sayi;
    for(j = 2; j <= (i/j); j++)
        if(!(i%j)) break;
    if(j > (i/j)) return 1;
    return 0;
}
int main() {
    int a, b;
    printf("iki sayi girin: ");
    scanf("%d %d", &a, &b);
    int sayi;

    return 0;
}
```



DIVIDE AND
CONQUER

Asal Sayı

```
#include <stdio.h>
#include <stdlib.h>
int asal_mi(int sayi) {
    int j,i=sayi;
    for(j = 2; j <= (i/j); j++)
        if(!(i%j)) break;
    if(j > (i/j)) return 1;
    return 0;
}
int main() {
    int a, b;
    printf("iki sayi girin: ");
    scanf("%d %d", &a, &b);
    int sayi;
    for (sayi = a ; sayi <= b ; sayi++) {
        int sonuc = asal_mi(sayi);
        if (sonuc == 1) printf("asal: %d\n", sayi);
    }
    return 0;
}
```



DIVIDE AND
CONQUER

main & fonksiyon

```
#include <stdio.h>
```

```
int main() {  
    int a = 10;  
    printf("gonderilmeden once -> %d\n\n", a);  
  
    return 0;  
}
```

main()

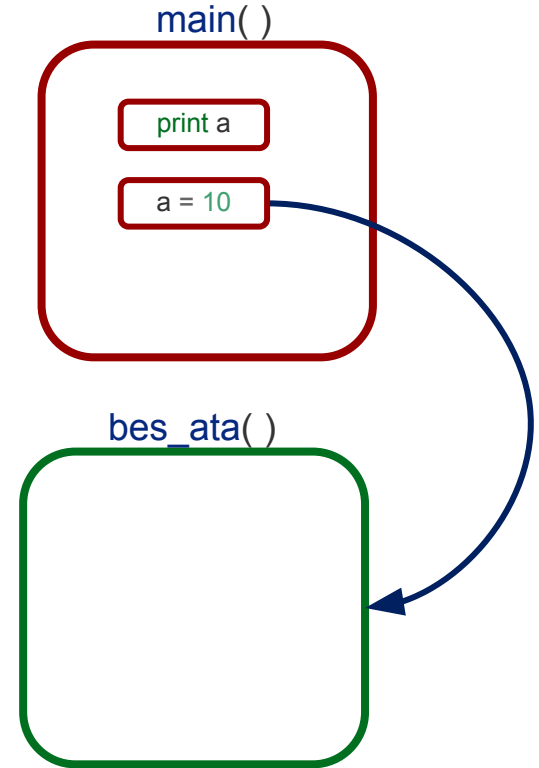
print a

a = 10

main & fonksiyon

```
#include <stdio.h>
```

```
int main() {  
    int a = 10;  
    printf("gonderilmeden once -> %d\n\n", a);  
    bes_ata(a);  
  
    return 0;  
}
```



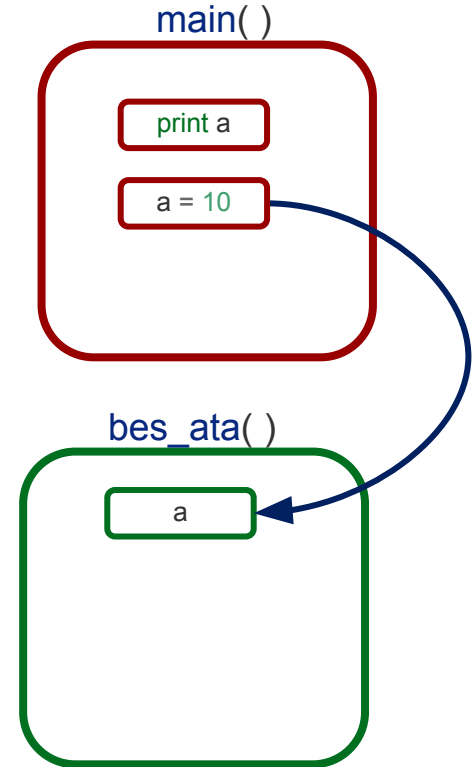
main & fonksiyon

```
#include <stdio.h>
void bes_ata(int a) {

}
```

```
int main() {
    int a = 10;
    printf("gonderilmeden once -> %d\n\n", a);
    bes_ata(a);

    return 0;
}
```

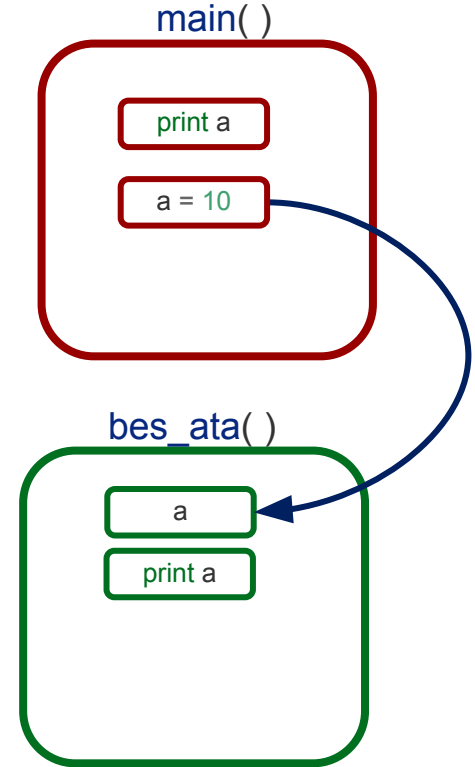


main & fonksiyon

```
#include <stdio.h>
void bes_ata(int a) {
    printf("alınan -> %d\n", a);
}
```

```
int main() {
    int a = 10;
    printf("gonderilmeden once -> %d\n\n", a);
    bes_ata(a);

    return 0;
}
```

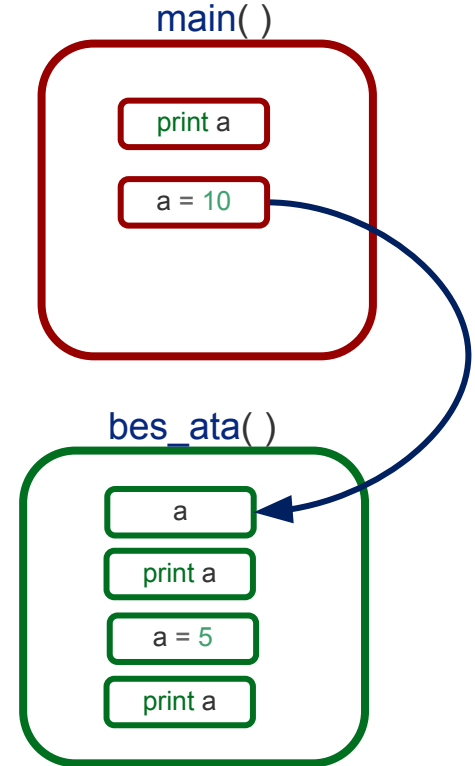


main & fonksiyon

```
#include <stdio.h>
void bes_ata(int a) {
    printf("alınan -> %d\n", a);
    a = 5;
    printf("degistirildi -> %d\n\n\n", a);
}

int main() {
    int a = 10;
    printf("gonderilmeden once -> %d\n\n\n", a);
    bes_ata(a);

    return 0;
}
```

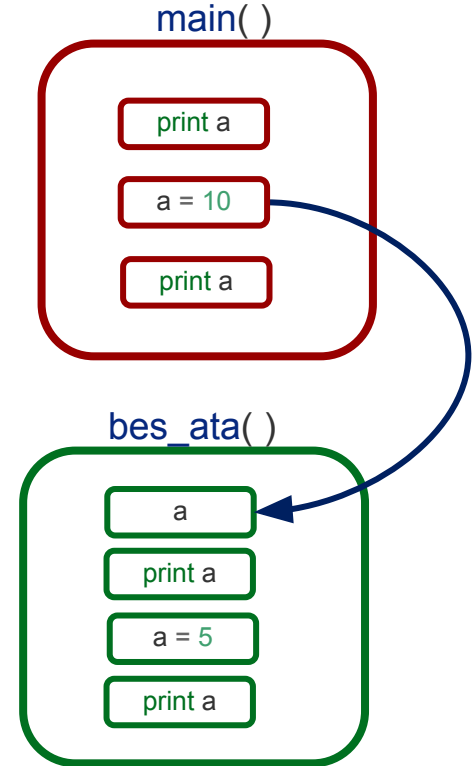


main & fonksiyon

```
#include <stdio.h>

void bes_ata(int a) {
    printf("alınan -> %d\n", a);
    a = 5;
    printf("degistirildi -> %d\n\n", a);
}

int main() {
    int a = 10;
    printf("gonderilmeden once -> %d\n\n", a);
    bes_ata(a);
    printf("gonderildikten sonra -> %d\n\n", a);
    return 0;
}
```



Sorular

