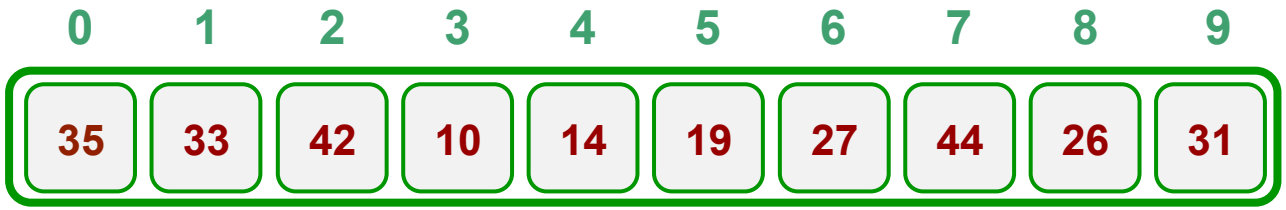
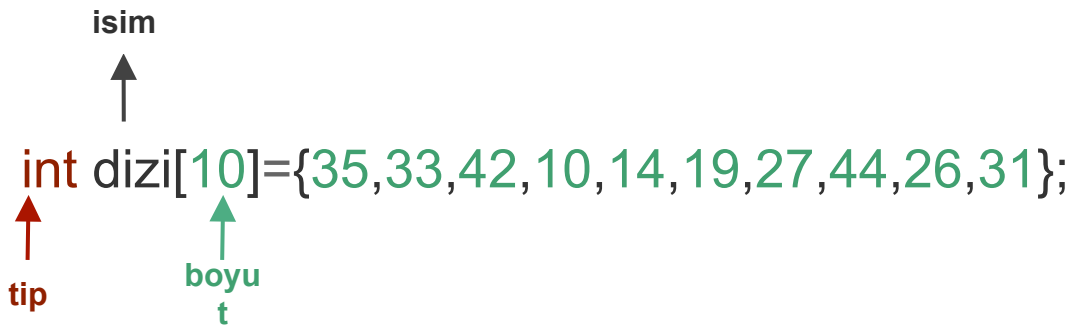
Diziler

Suhap SAHIN
Onur GÖK

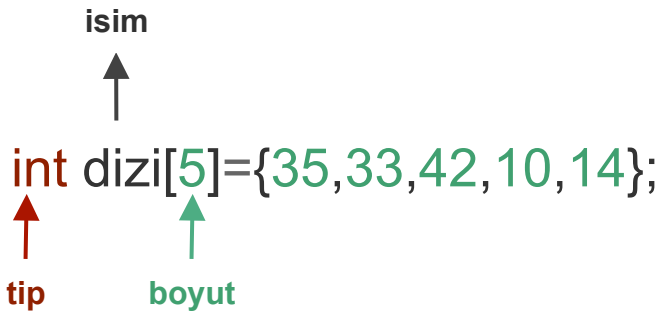
Dizi Tanımı

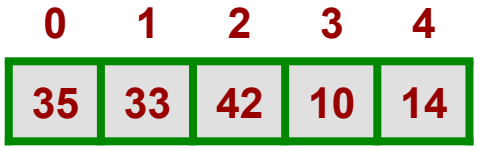
Dizi Gösterimi





Dizi Gösterimi





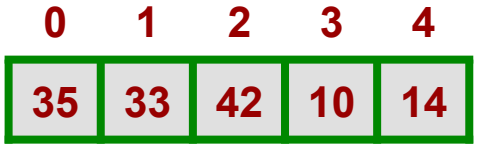
index: 0’dan baslar

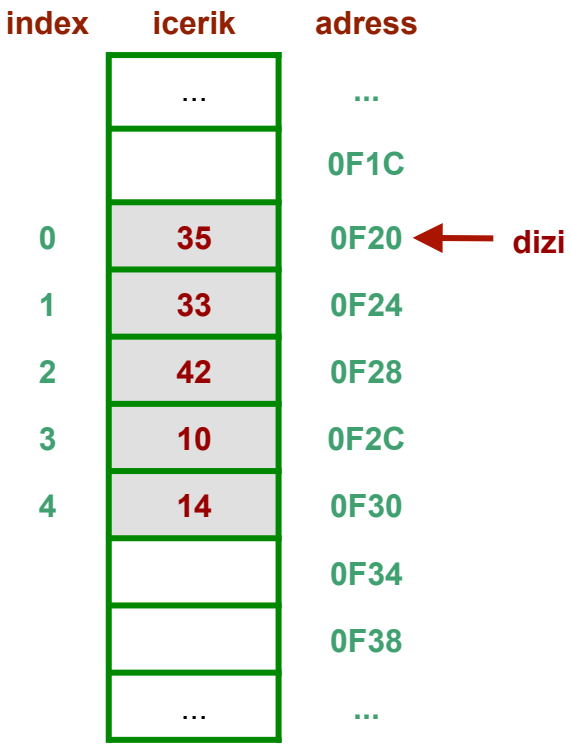
Dizinin Boyutu: Sakladıgı eleman kadardır

Erisim: Dizile elemanına erisim için index numarası kullanılır

Bellek yerlesimi

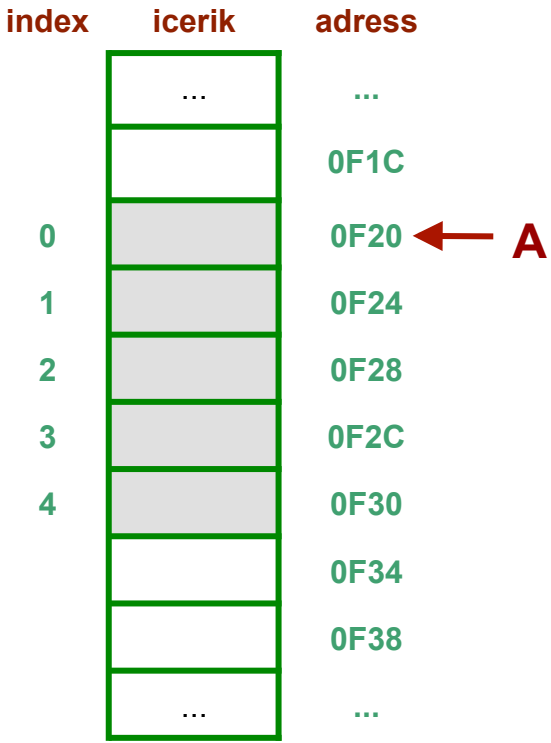
```
int dizi[5]={35,33,42,10,14};
```





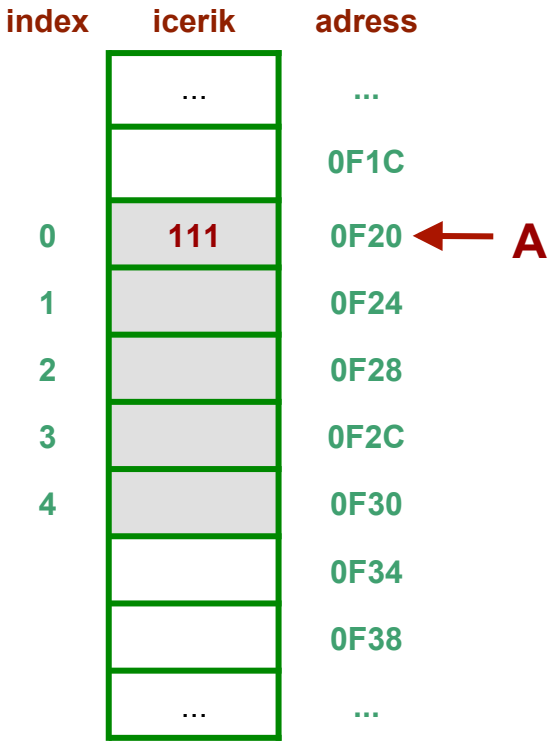
Dizi Tanımlama

```
#include <stdio.h>
void main() {
    int A[5];




}
```



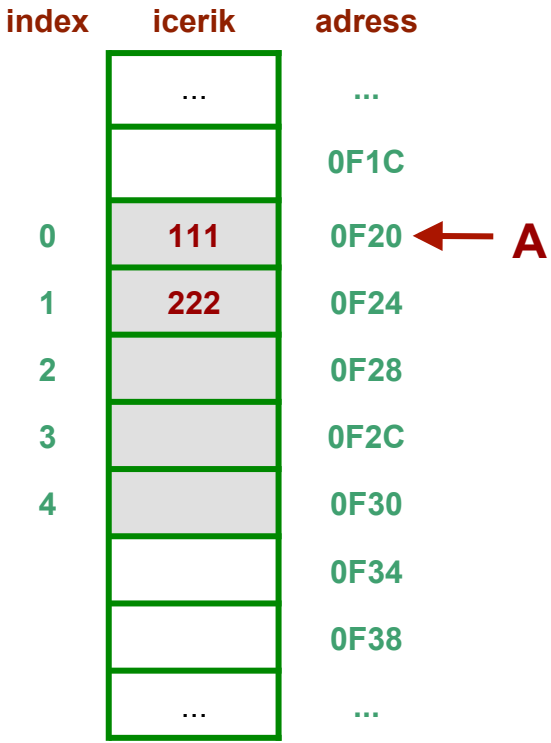
Dizi Tanımlama

```c
#include <stdio.h>
void main() {
    int A[5];
    A[0] = 111;
    printf("A dizisinin 1. elemani: %d\n", A[0]);



}
```



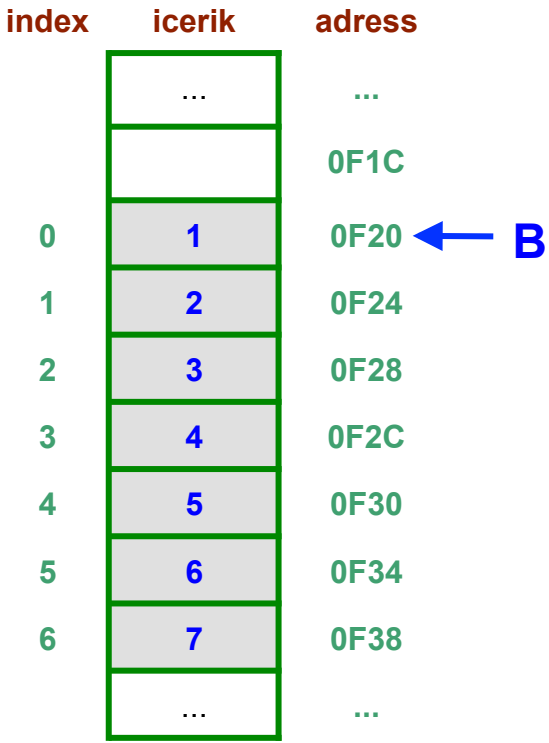
Dizi Tanımlama

```c
#include <stdio.h>
void main() {
    int A[5];
    A[0] = 111;
    printf("A dizisinin 1. elemani: %d\n", A[0]);
    A[1] = 222;
    printf("A dizisinin 2. elemani: %d\n", A[1]);



}
```



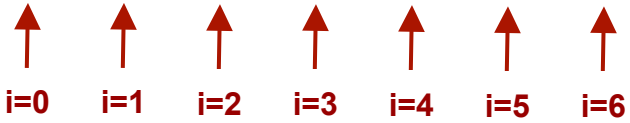
Dizi Tanımlama

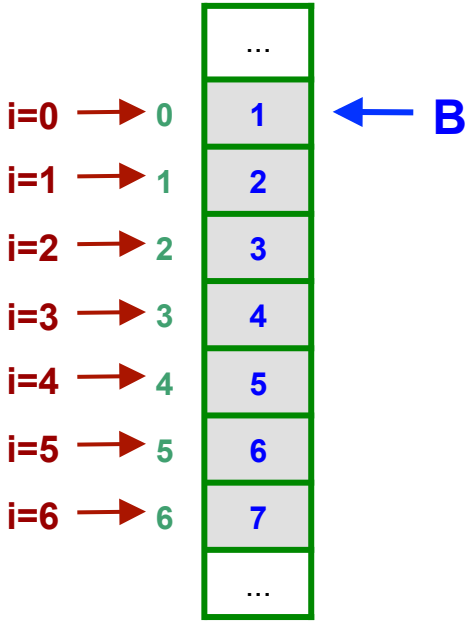
```c
#include <stdio.h>
void main() {
    int A[5];
    A[0] = 111;
    printf("A dizisinin 1. elemani: %d\n", A[0]);
    A[1] = 222;
    printf("A dizisinin 2. elemani: %d\n", A[1]);
    int B[7] = {1,2,3,4,5,6,7};



}
```



Dizi içinde dolasma

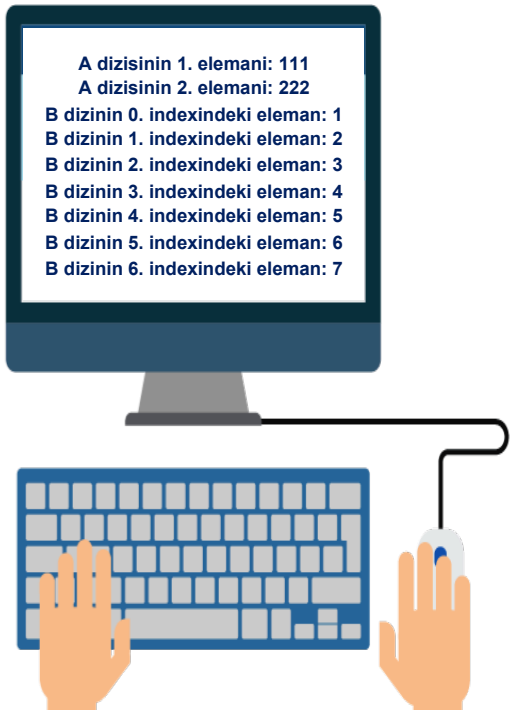
```
int B[7]={1,  2,  3,  4,  5,  6,  7};
```



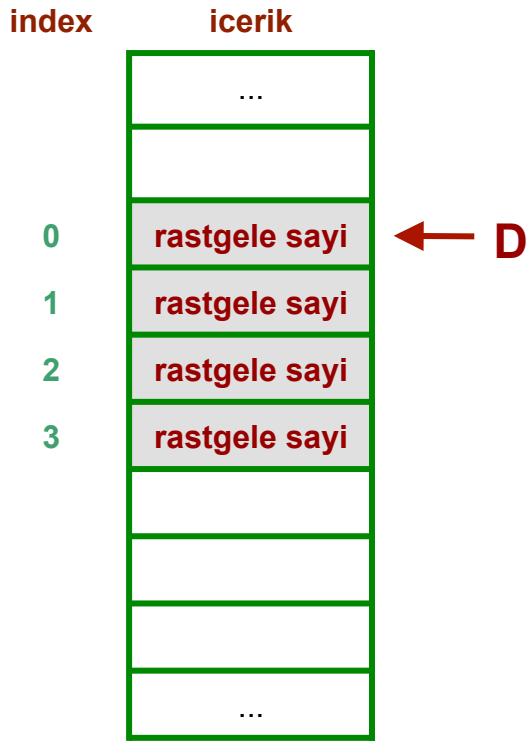


Dizi Tanımlama

```c
#include <stdio.h>
void main() {
    int A[5];
    A[0] = 111;
    printf("A dizisinin 1. elemani: %d\n", A[0]);
    A[1] = 222;
    printf("A dizisinin 2. elemani: %d\n", A[1]);
    int B[7] = {1,2,3,4,5,6,7};
    int i;
    for (i = 0 ; i < 7 ; i++)
        printf("B dizinin %d. indexindeki eleman: %d\n", i, B[i]);
}
```



rastgele sayilar [0,100)



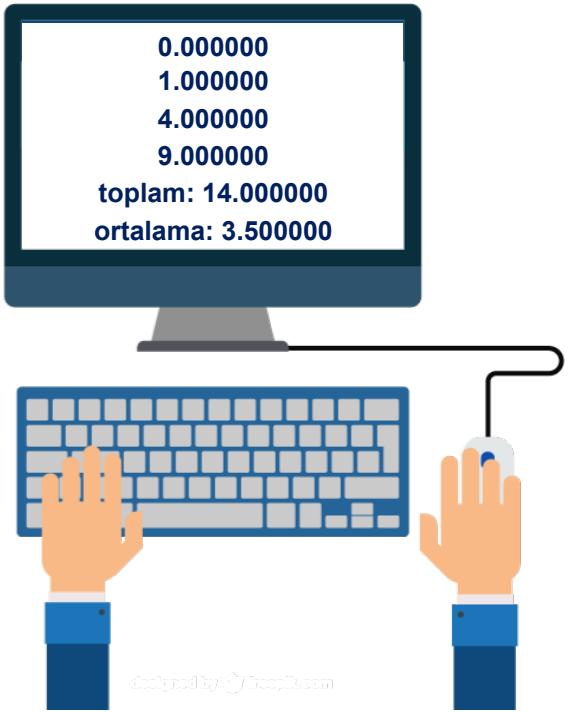
rastgele sayilar [0,100)

```
#include <time.h>
void main() {
        int D[4];
        srand(time(NULL));
        int i;
        printf("--- Rastgele 4 sayı üretiliyor [0,100) ----\n");
        for (i = 0 ; i < 4 ; i++) {
                D[i] = rand() % 100;
        }
        printf("--- Üretilen sayılar bir dizide saklandı ----\n");
        for (i = 0 ; i < 4 ; i++) {
                printf("Üretilen  %d. sayı = %d\n",i+1,D[i]);
        }
}
```

sayıların karesi [0,4)

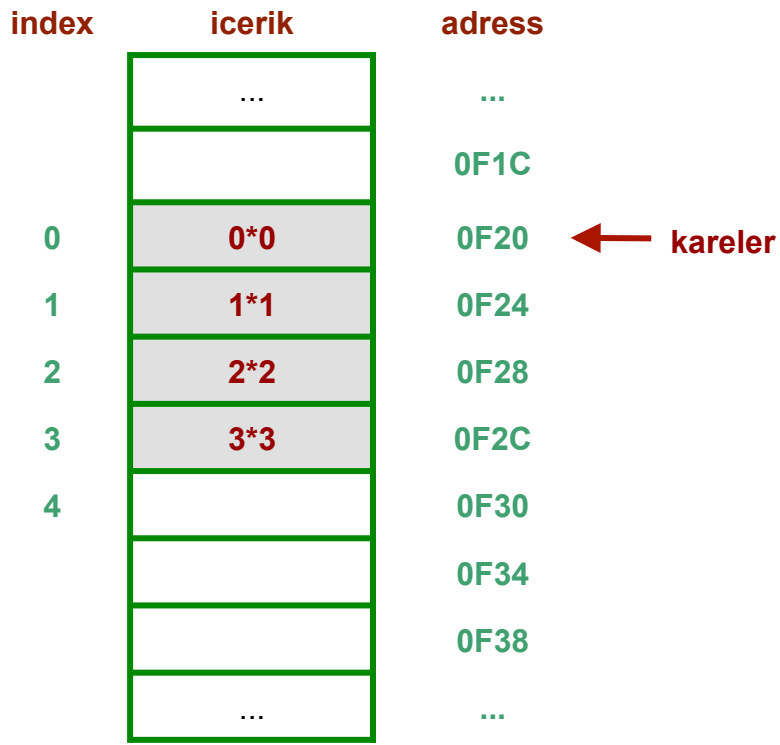
index	icerik
	...
0	0*0
1	1*1
2	2*2
3	3*3
4	
	...

kareler



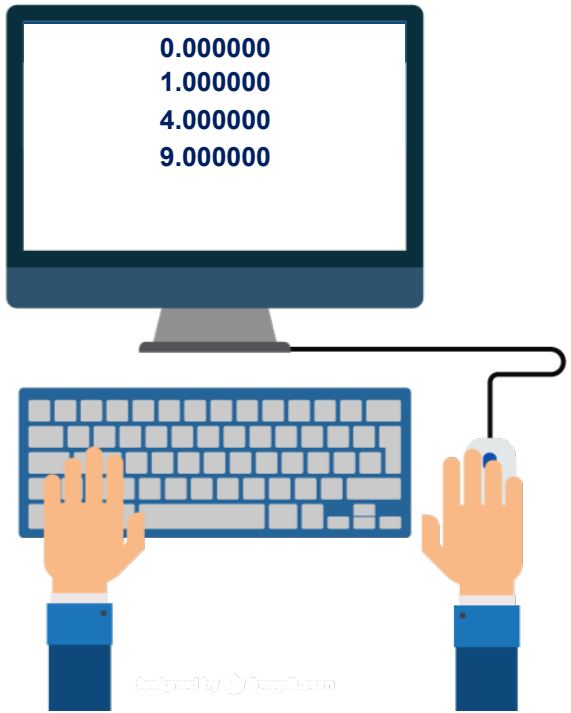
sayıların karesi [0,4)

```
#include <stdio.h>
void main() {
        int i;
        float kareler[4];
        for (i = 0 ; i < 4 ; i++) {
                kareler[i] = i*i;
        }

}
```



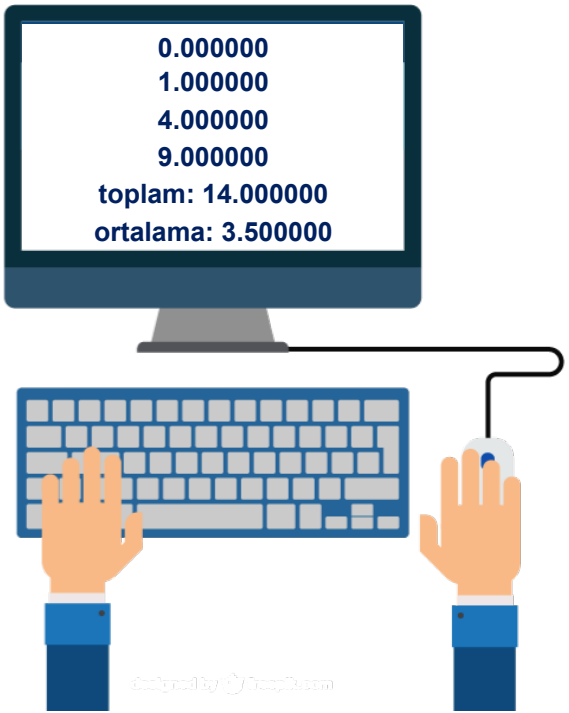
sayıların karesi [0,4)

```
#include <stdio.h>
void main() {
        int i;
        float kareler[4];
        for (i = 0 ; i < 4 ; i++) {
                kareler[i] = i*i;
        }
        for (i = 0 ; i < 4 ; i++) {
                printf("%f\n", kareler[i]);
        }

}
```



sayıların karesi [0,4)

```
#include <stdio.h>
void main() {
        int i;
        float kareler[4];
        for (i = 0 ; i < 4 ; i++) {
                kareler[i] = i*i;
        }
        for (i = 0 ; i < 4 ; i++) {
                printf("%f\n", kareler[i]);
        }
        float toplam = 0;
        for (i = 0 ; i < 4 ; i++)
                toplam += kareler[i];
        float ortalama = toplam / 4.0;
        printf("toplam: %f\n", toplam);
        printf("ortalama: %f\n",
ortalama);
}
```

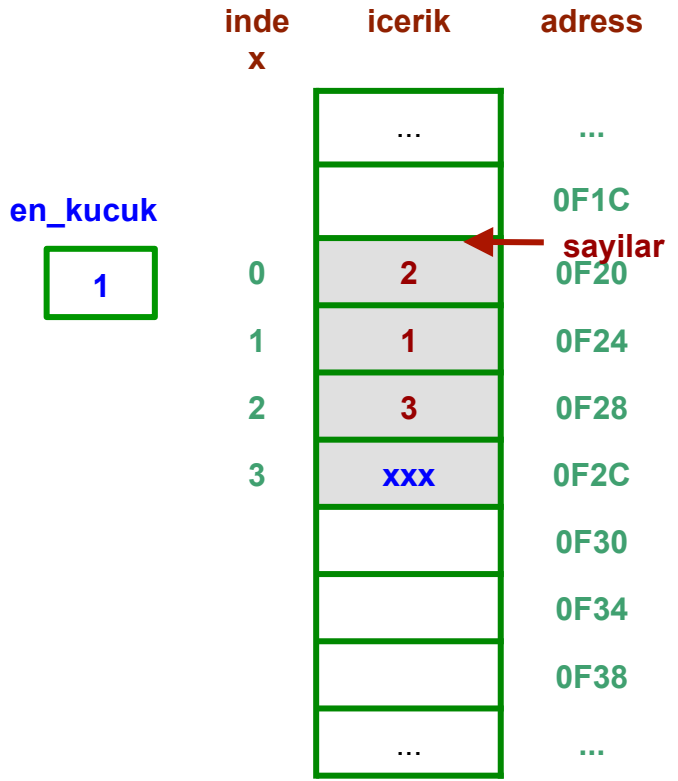


Dizideki en küçük sayı

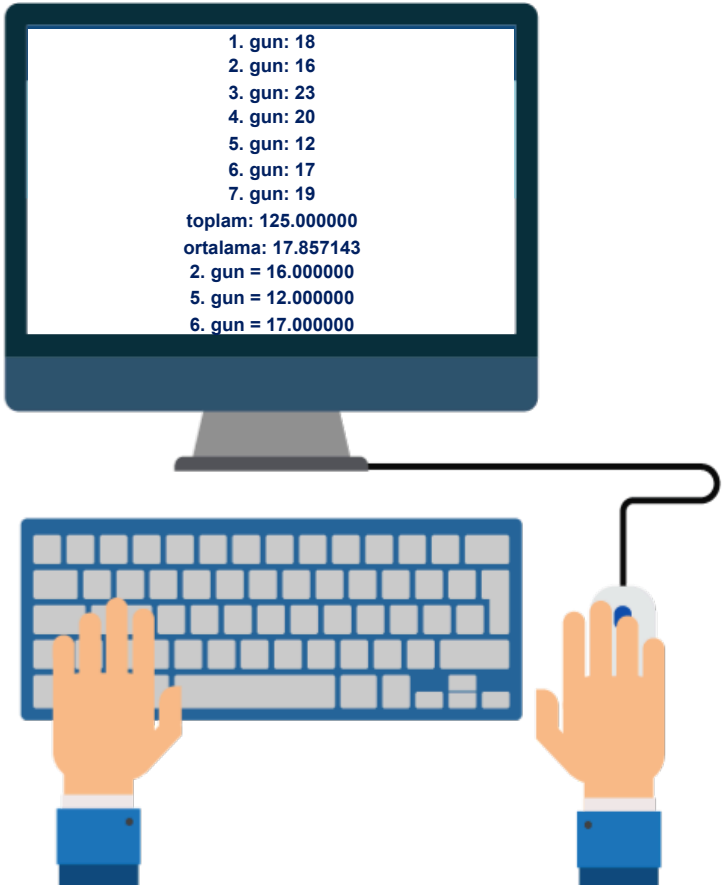
index	icerik	adress	
	...	...	
		0F1C	← sayilar
0	scanf	0F20	
1	scanf	0F24	
2	scanf	0F28	
3	xxx	0F2C	
		0F30	
		0F34	
		0F38	
	...	...	

Dizideki en küçük sayı

```
#include <stdio.h>
void main() {
        int sayilar[4];
        int i, N;
        do {
                printf("kac sayi gireceksiniz? (max:4) ");
                scanf("%d", &N);
        } while (N > 4);
        for (i = 0 ; i < N ; i++) {
                printf("sayi girin: ");
                scanf("%d", &sayilar[i]);
        }
        int en_kucuk = sayilar[0];
        for (i = 1 ; i < N ; i++) {
                if (sayilar[i] < en_kucuk) {
                        en_kucuk = sayilar[i];
                }
        }
        printf("en kucuk eleman: %d\n", en_kucuk);
}
```



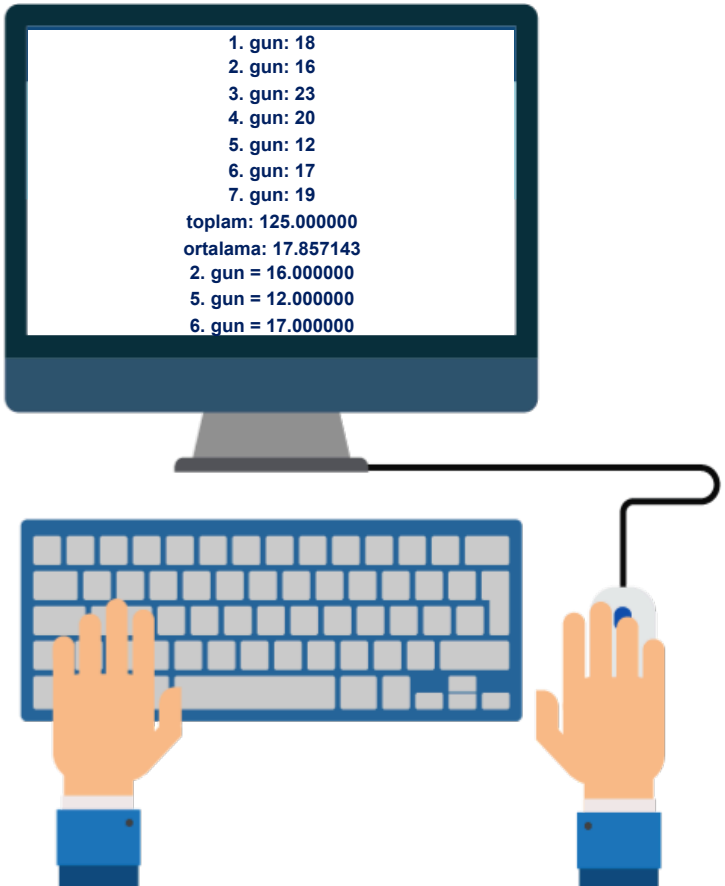
Ortalama sıcaklık



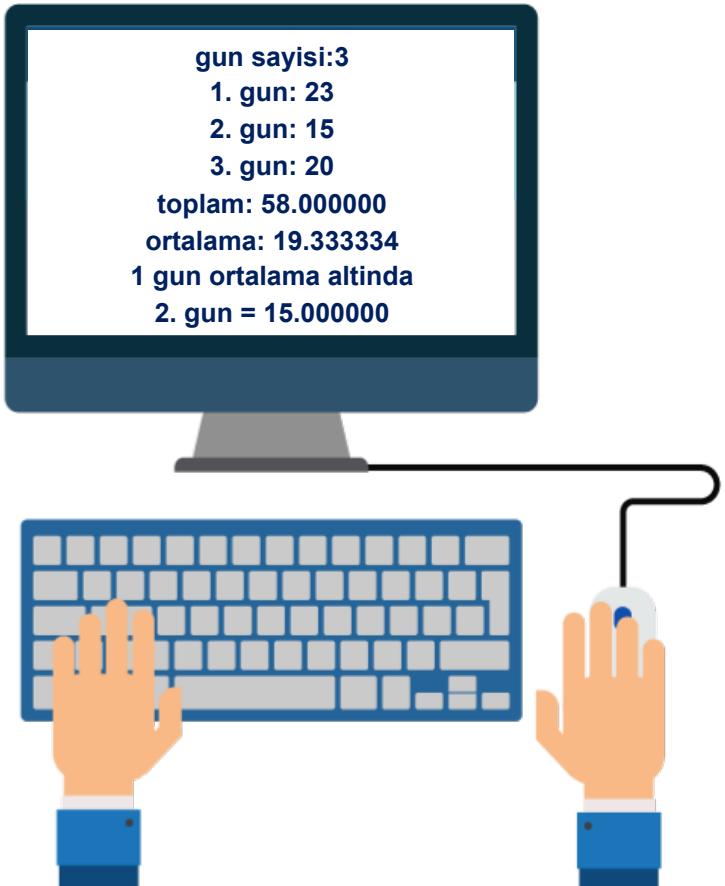
index	icerik	adress	
	...	...	
		0F1C	← sicakliklar
0	18	0F20	
1	16	0F24	
2	23	0F28	
3	20	0F2C	
4	12	0F30	
5	17	0F34	
6	19	0F38	
	...	...	

Ortalama sıcaklık

```c
#include <stdio.h>
float dizi_toplam(float d[], int eleman_say) {
    int i;
    float toplam = 0;
    for (i = 0 ; i < eleman_say ; i++) {
        toplam += d[i];
    }
                    return toplam;
}
void main() {
    float sicakliklar[7];
    int i;
    for (i = 0 ; i < 7 ; i++) {
        printf("%d. gun: ", i+1);
        float x;
        scanf("%f", &x);
        sicakliklar[i] = x;
    }
    float toplam = dizi_toplam(sicakliklar, 7);
    printf("toplam: %f\n", toplam);
    float ortalama = toplam / 7.0;
    printf("ortalama: %f\n", ortalama);
    for (i = 0 ; i < 7 ; i++) {
        if (sicakliklar[i] < ortalama) {
            printf("%d. gun = %f\n", i+1, sicakliklar[i]);
        }
    }
}
```



Ortalama altındaki sıcaklık

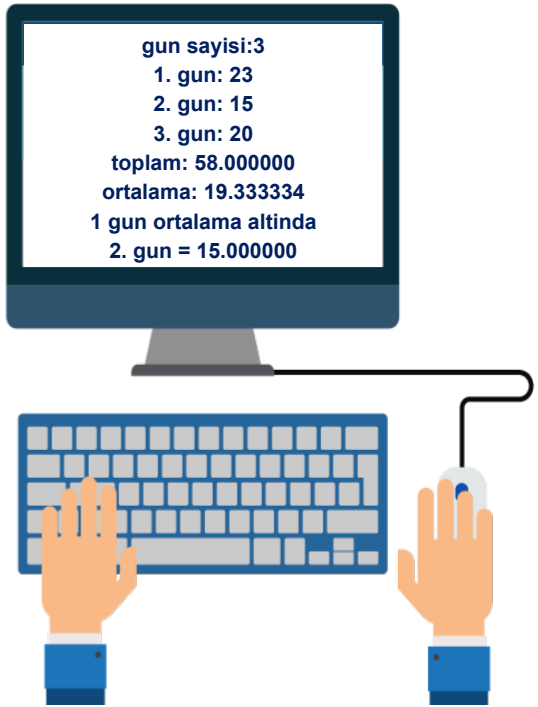


index	icerik	adress
0	23	0F1C
1	15	0F20
2	20	0F24
3	xxx	0F28
4	xxx	0F2C
5	xxx	0F30
6	xxx	0F34
7	xxx	0F38
8	xxx	0F40
9	xxx	0F44

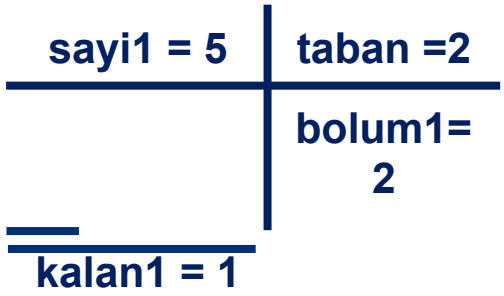
sicaklikla r

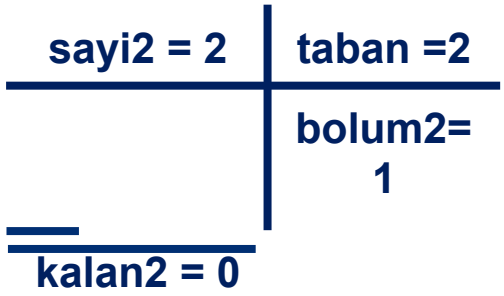
Ortalama altındaki sıcaklık

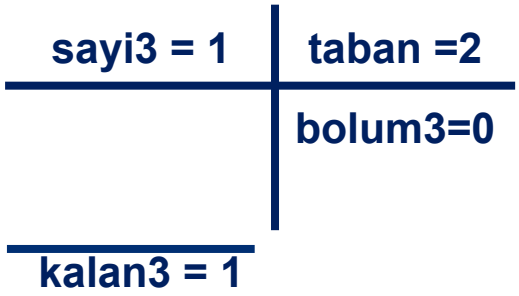
```
#include <stdio.h>
float dizi_toplam(float d[], int eleman_say);
void main() {
                float sicakliklar[10];
                int N, i;
                printf("gun sayisi:");
                scanf("%d", &N);
                for ( i = 0 ; i < N ; i++) {
                                printf("%d. gun: ", i+1);
                                scanf("%f", &sicakliklar[i]);
                }
                float toplam = dizi_toplam(sicakliklar, N);
                printf("toplam: %f\n", toplam);
                float ortalama = toplam / (float)N;
                printf("ortalama: %f\n", ortalama);
                int sayac = 0;
                for (i = 0 ; i < N ; i++)
                                if (sicakliklar[i] < ortalama)
                                                sayac++;
                printf("%d gun ortalama altinda\n", sayac);
                for (i = 0 ; i < N ; i++)
                                if (sicakliklar[i] < ortalama)
                                                printf("%d. gun =
%f\n", i+1, sicakliklar[i]);
}
float dizi_toplam(float d[], int eleman_say) {
                int i;
                float toplam = 0;
                for (i = 0 ; i < eleman_say ; i++)
                                toplam += d[i];
                return toplam;
}
```



Örnek: Taban çevrimi







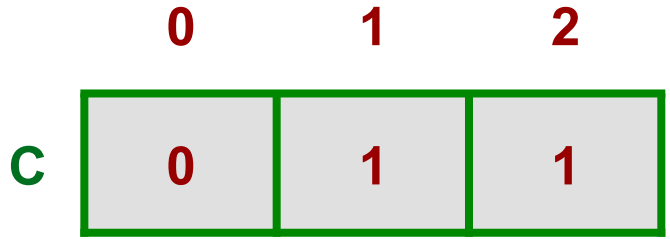

```
kalan1 = sayi1 % taban
```

```
sayi2 = sayi1 / taban
kalan2 = sayi2 % taban
```

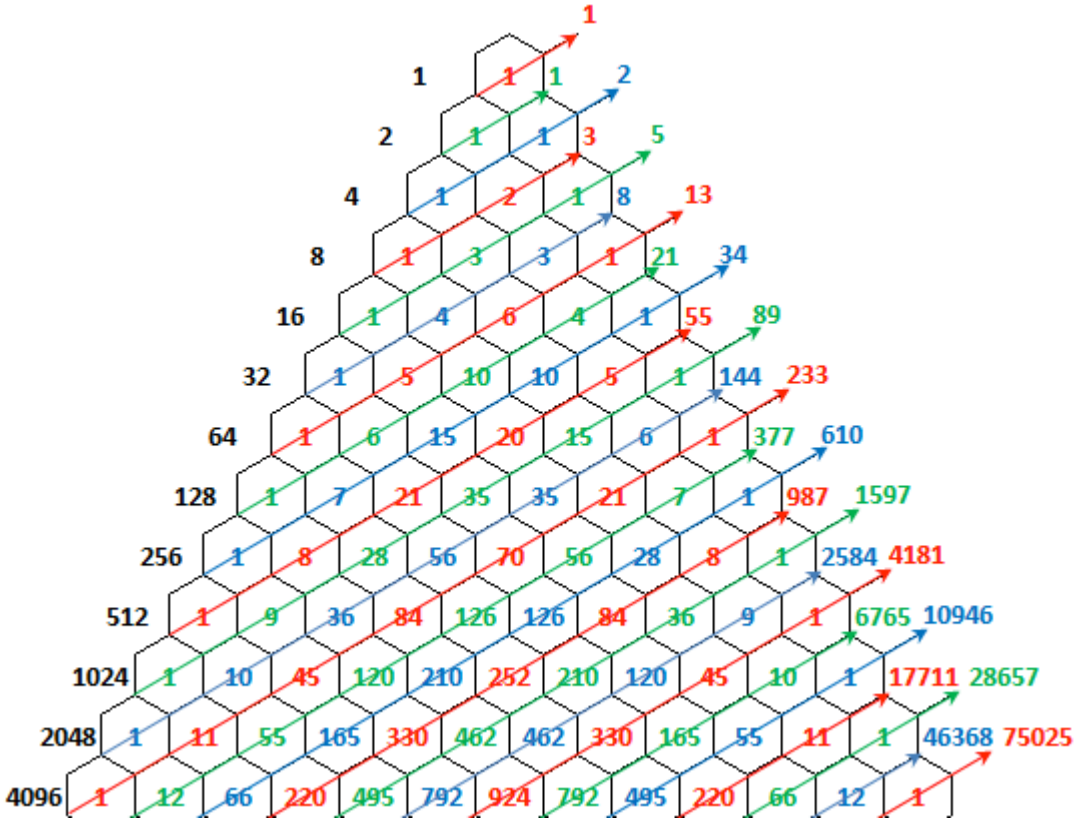
```
sayi3 = sayi2 / taban
kalan3 = sayi3 % taban
```

Örnek: Taban çevrimi

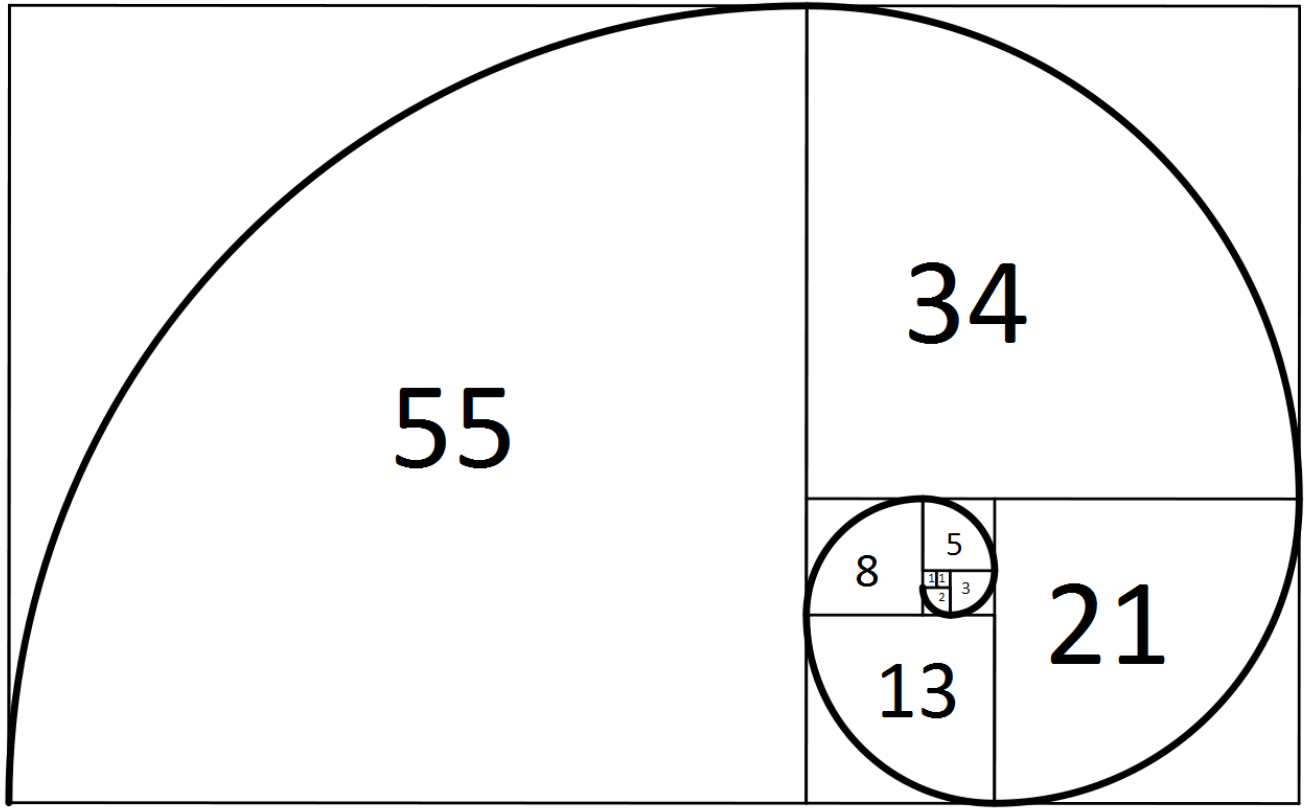
```c
#include <stdio.h>
void main()
{
    int sayi, taban, k;
    sayi = 6;
    taban = 2;
    int C[3];
    int i =0;
    while(sayi>0){
        kalan = sayi % taban;
        sayi = sayi / taban;
        C[i] = kalan;
        i = i+1;
    }
    for(i=2;i >-1;i--){
        printf("%d",C[i]);
    }
}
```



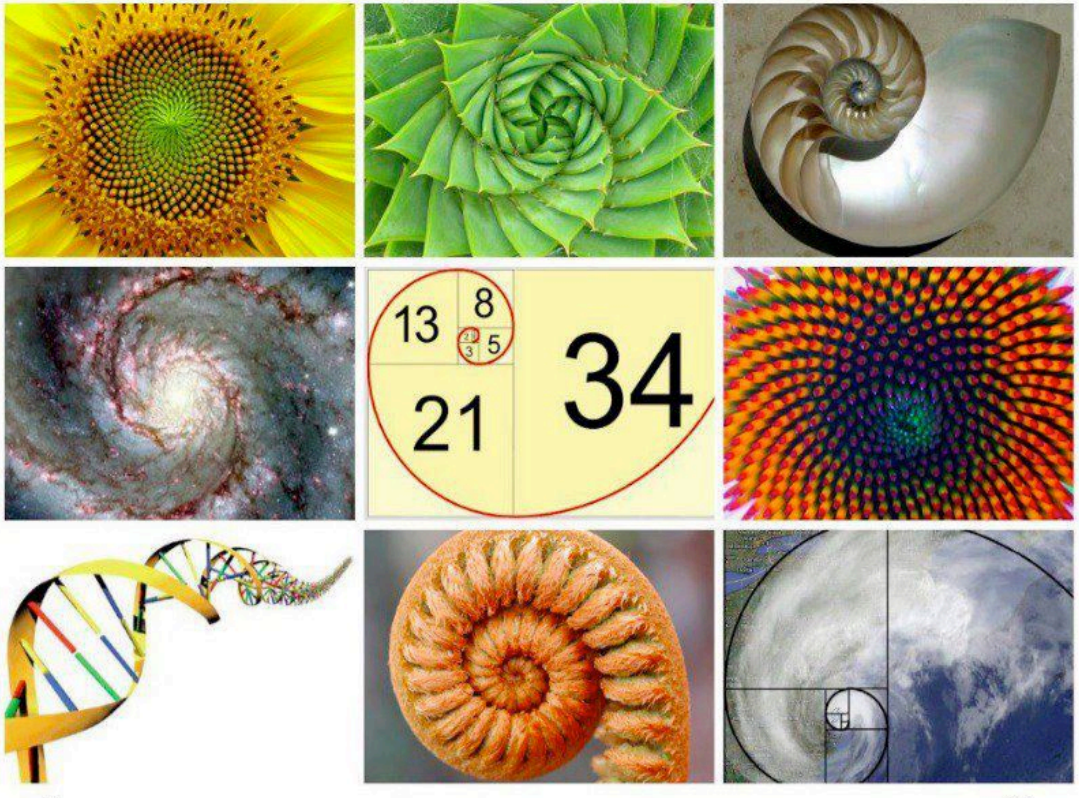
Örnek: Fibonacci Sayıları



Örnek: Fibonacci Sayıları



Örnek: Fibonacci Sayıları

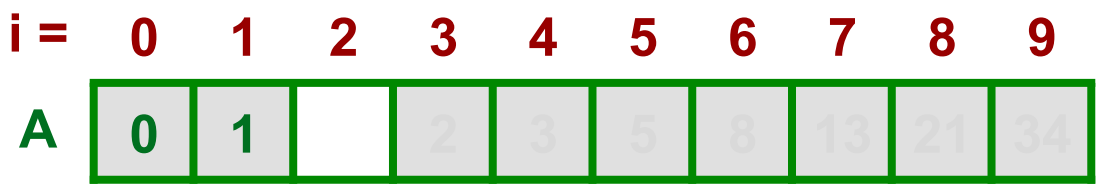


Örnek: Fibonacci Sayıları

```
int A[10]={0,1,1,2,3,5,8,13,21,34};
```

Örnek: ilk 10 fibonacci sayıları

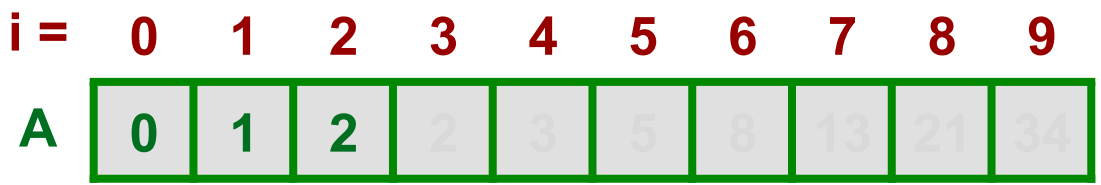
```
#include <stdio.h>
void main()
{
    int A[10];
    A[0]=0;
    A[1]=1;
    int i;
    for(i=2;i<10;i++){
        A[i] = A[i-1]+A[i-2];
    }
    for(i=0;i <10;i++){
        printf("%d,",A[i]);
    }
}
```



A[i=2] = A[i=1] +A[i=0]

Örnek: ilk 10 fibonacci sayıları

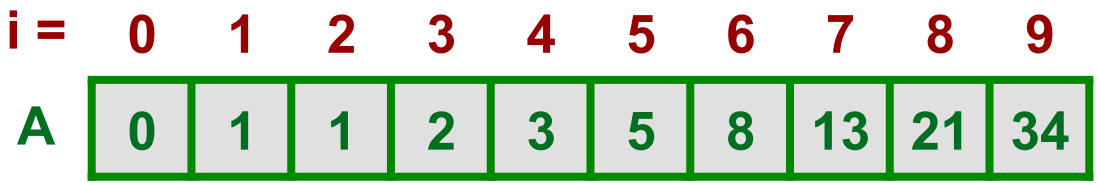
```c
#include <stdio.h>
void main()
{
    int A[10];
    A[0]=0;
    A[1]=1;
    int i;
    for(i=2;i<10;i++){
        A[i] = A[i-1]+A[i-2];
    }
    for(i=0;i <10;i++){
        printf("%d,",A[i]);
    }
}
```



A[i=2] = A[i=1] +A[i=0]

Örnek: ilk 10 fibonacci sayıları

```c
#include <stdio.h>
void main()
{
    int A[10];
    A[0]=0;
    A[1]=1;
    int i;
    for(i=2;i<10;i++){
        A[i] = A[i-1]+A[i-2];
    }
    for(i=0;i <10;i++){
        printf("%d,",A[i]);
    }
}
```



A[i=2] = A[i=1] +A[i=0]

Örnek: Diziyi tersine çevir

Örnek: Diziyi tersine çevir

```
int A[4]={1,3,2,4};
```

```
int A[4]={1,3,2,4};
```

```
int A[4]={4,3,2,1};
```

```
int A[4]={4,2,3,1};
```

Örnek: Diziyi tersine çevir

```
#include <stdio.h>
void main()
{
    int N,S,gecici;
    N=4;
    int A[]={1,3,2,4};
    S=N/2;
    int i;
    for(i=0;i<S;i++){
        gecici=A[i];
        A[i]=A[N-i-1];
        A[N-i-1]=gecici;
    }
    for(i=0;i <N;i++){
        printf("%d,",A[i]);
    }
}
```

Örnek: En küçük ve en büyük

Örnek: En küçük ve en büyük

```c
#include <stdio.h>
void main()
{
    int N,max,min;
    N=4;
    int A[]={1,3,2,4};
    min = A[0];
    max = A[0];
    int i;
    for(i=0;i<N;i++){
        if(A[i]>max){
            max = A[i];
        }else if(A[i]<min){
            min = A[i];
        }
    }
    printf("%d %d",min, max);
}
```

Örnek: Dizi1 + Dizi2

```
    int A[5] = {1,2,3,4,5};
+   int B[5] = {9,0,0,3,7};
-------------------------
  int C[6] = {1,0,2,3,8,2};
```

```
elde =1;      A[4] =5;
            + B[4] =7;
              ------
              C[5] =2;
```

```
C[i+1] = (A[i] + B[i] +elde) %10;
elde = (A[i] + B[i] +elde)/10;
```

Örnek: Dizi1 + Dizi2

```c
#include <stdio.h>
void main()
{
    int N,T,elde;
    N=5;
    int A[]={1,2,3,4,5};
    int B[]={9,0,0,3,7};
    int C[6];
    elde = 0;
    int i;
    for(i=N-1;i>-1;i--){
        gecici = A[i] + B[i] +elde;
        C[i+1] = gecici %10;
        elde = gecici/10;
    }
    C[0]=elde;
    for(i=0;i<N+1;i++){
        printf("%d",C[i]);
    }
}
```

Sorular