Programozás I. gyakorlat

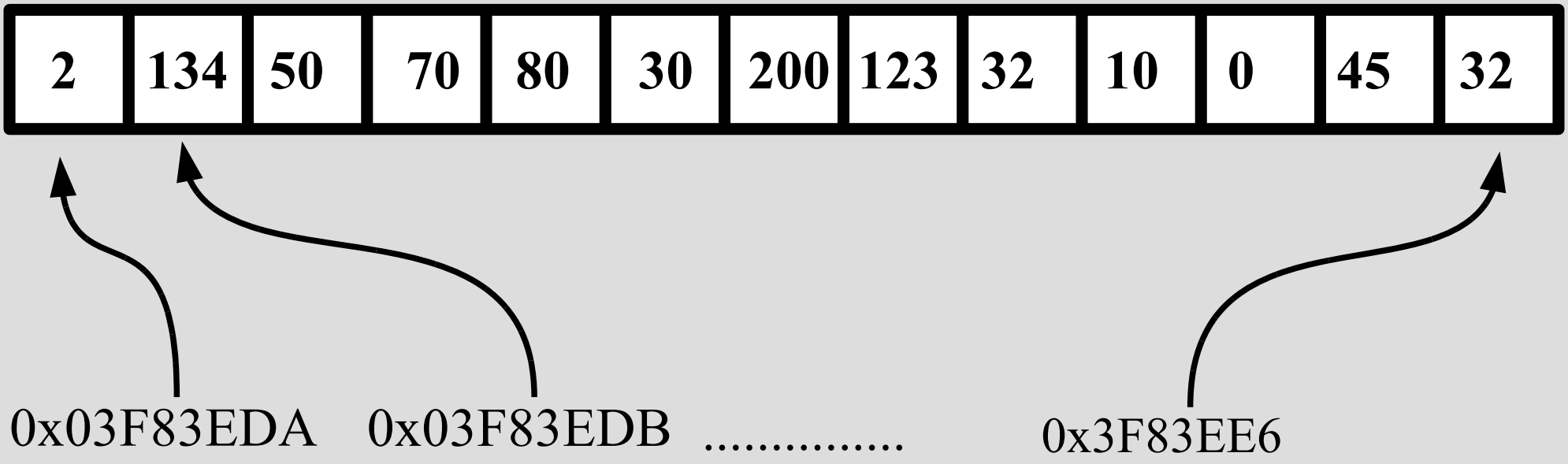
Mutatók

Memória elérése

Címbusz

Adatbusz

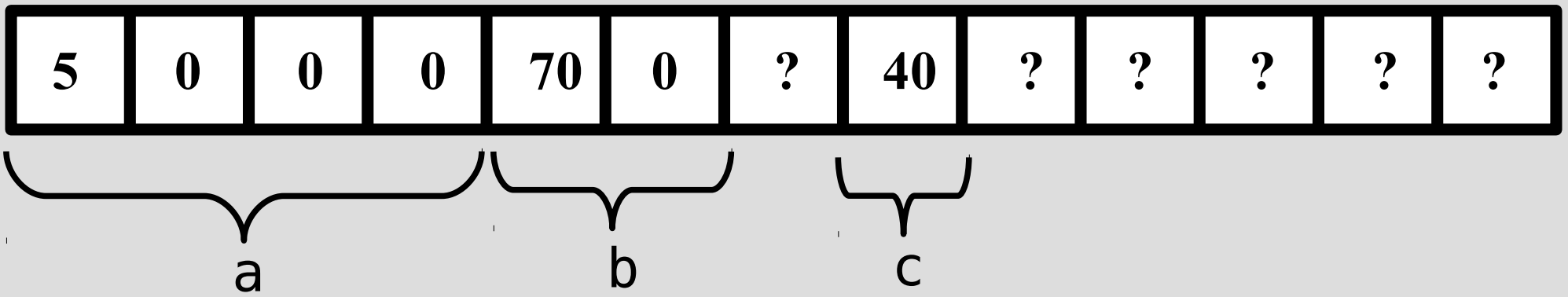
Memória elérése



Mutatók

```c
#include <stdio.h>

int main() {
   int a = 5;
   short b = 70;
   char c = 40;
   printf("%p\n%p\n%p\n", &a, &b, &c);
   return 0;
}
```

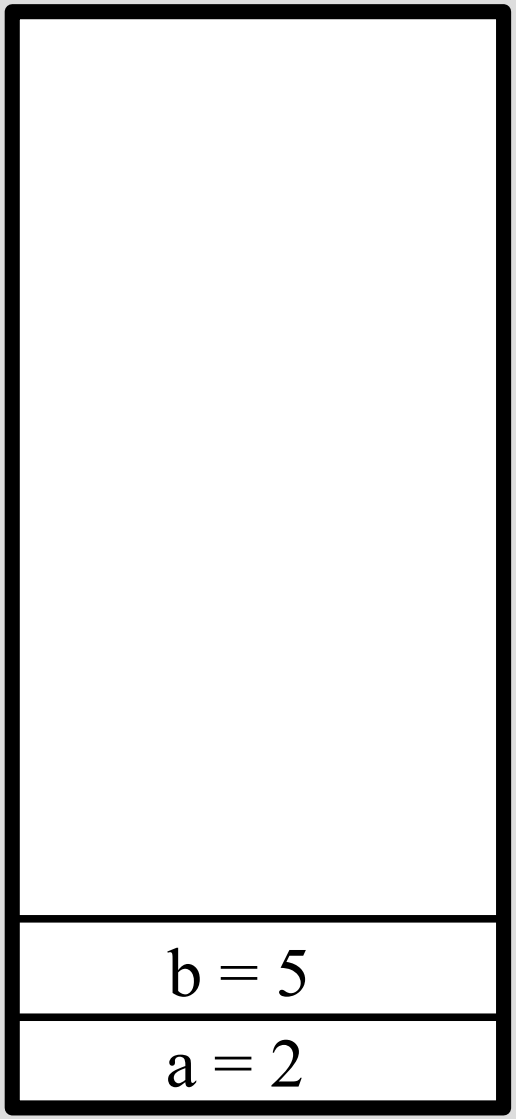


Mutatók

```c
#include <stdio.h>

int main() {
   int a = 5;
   int * ptra = &a;
   printf("%d\n", a);
   printf("%p\n", ptra);
   printf("%d\n", *ptra);
   return 0;
}
```

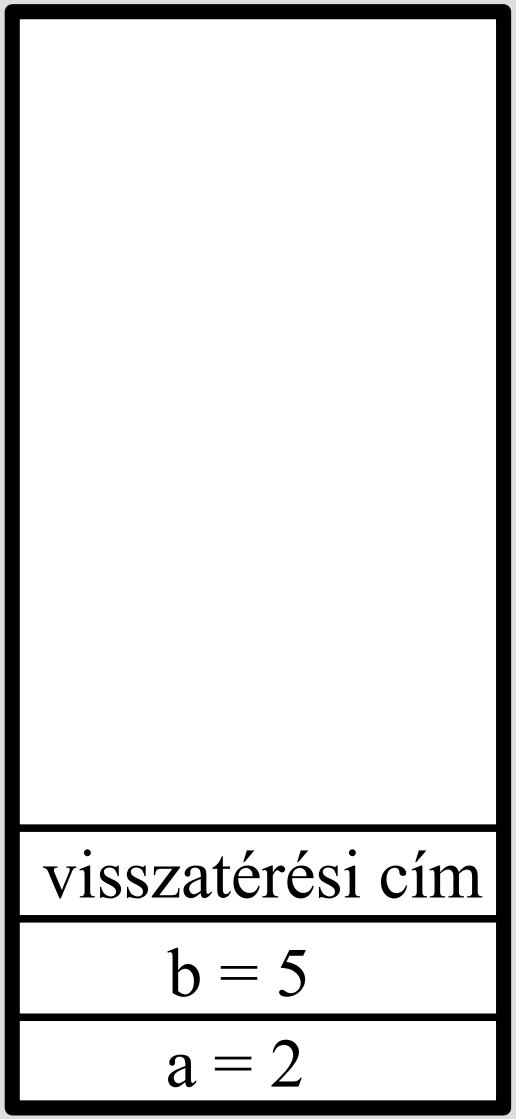
Stack (verem)




```c
#include <stdio.h>

int main() {
   int a = 2, b = 5;
   return 0;
}
```

Stack (verem)

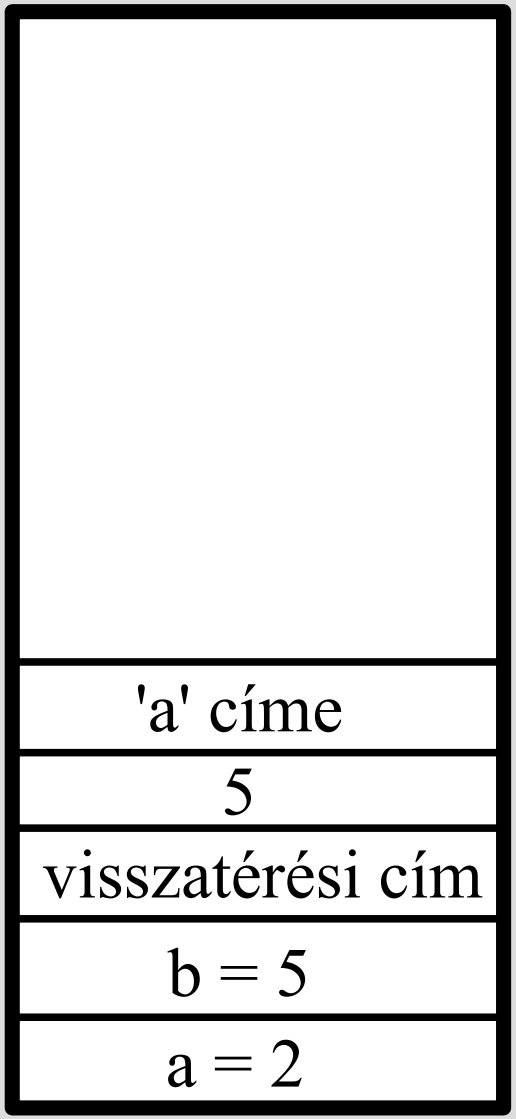



```c
#include <stdio.h>

void fv(int * p1, int p2) {
   int l = 0;
   l = *p1 + p2;
   *p1 = 10;
   printf("%d\n", l);
}

int main() {
   int a = 2, b = 5;
   fv(&a, b);
   return 0;
}
```

Stack (verem)

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   int l = 0;
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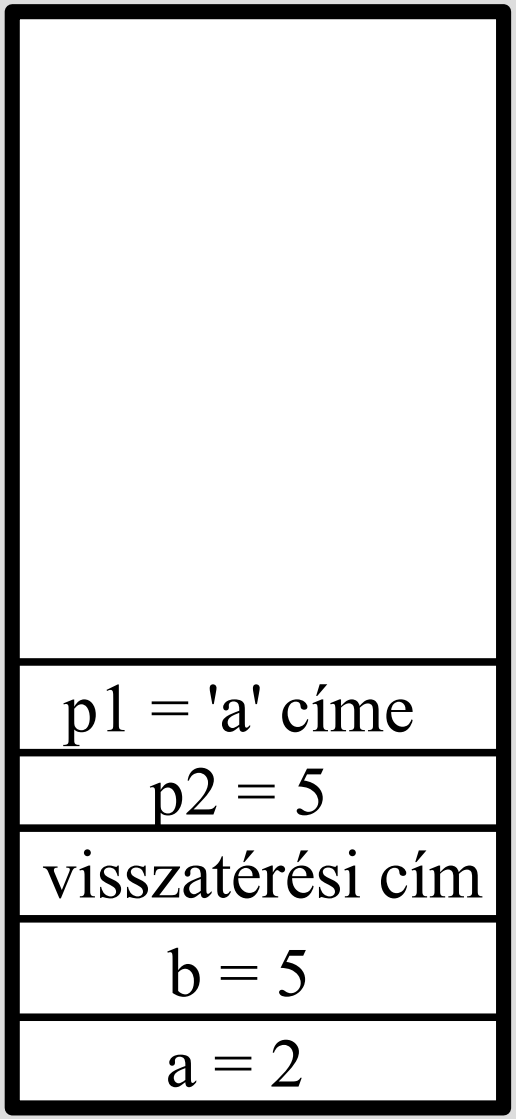


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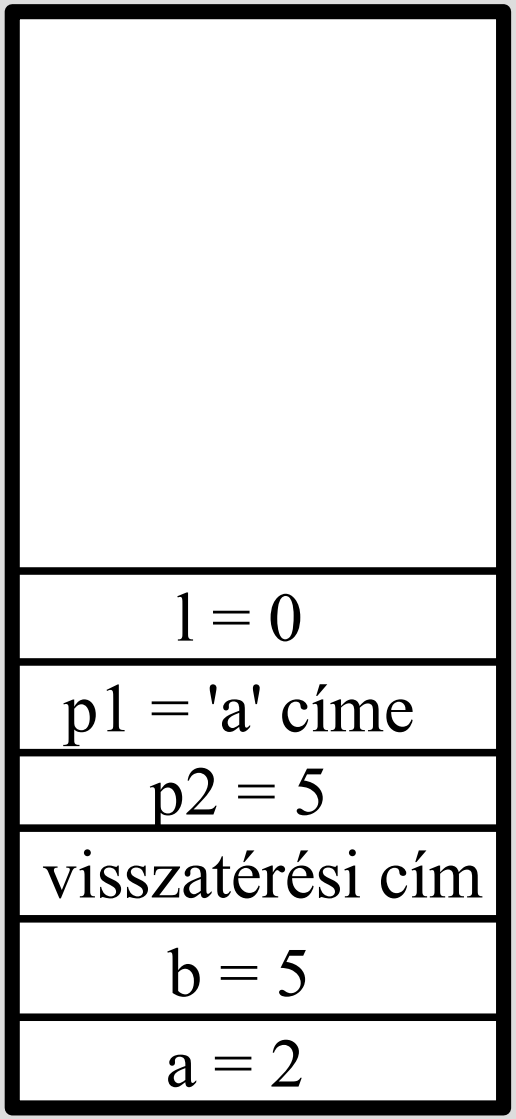


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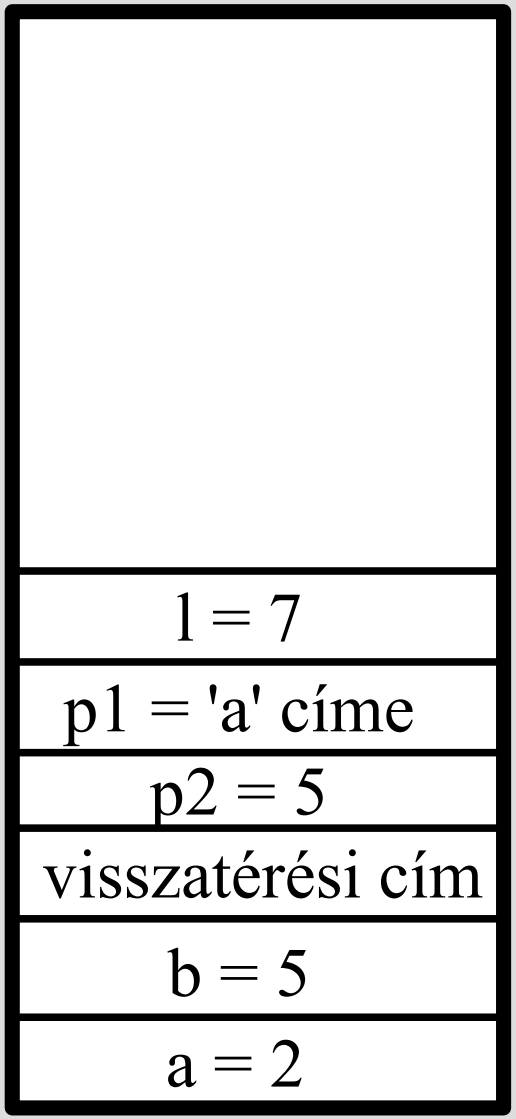
Stack (verem)

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#include <stdio.h>

void fv(int * p1, int p2) {
   int l = 0;
   l = *p1 + p2;
   *p1 = 10;
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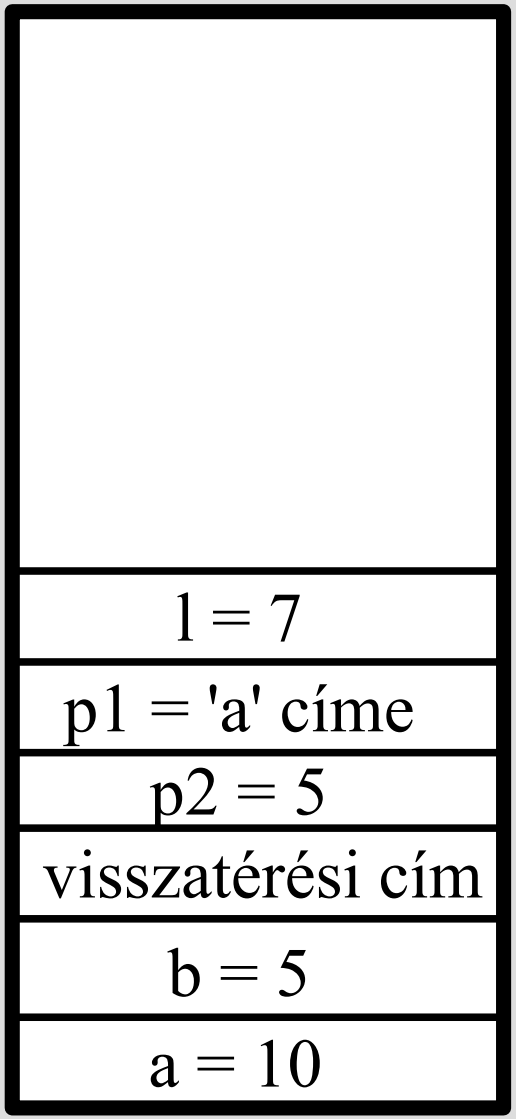
Stack (verem)

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void fv(int * p1, int p2) {
   int l = 0;
   l = *p1 + p2;
   *p1 = 10;
   printf("%d\n", l);
}

int main() {
   int a = 2, b = 5;
   fv(&a, b);
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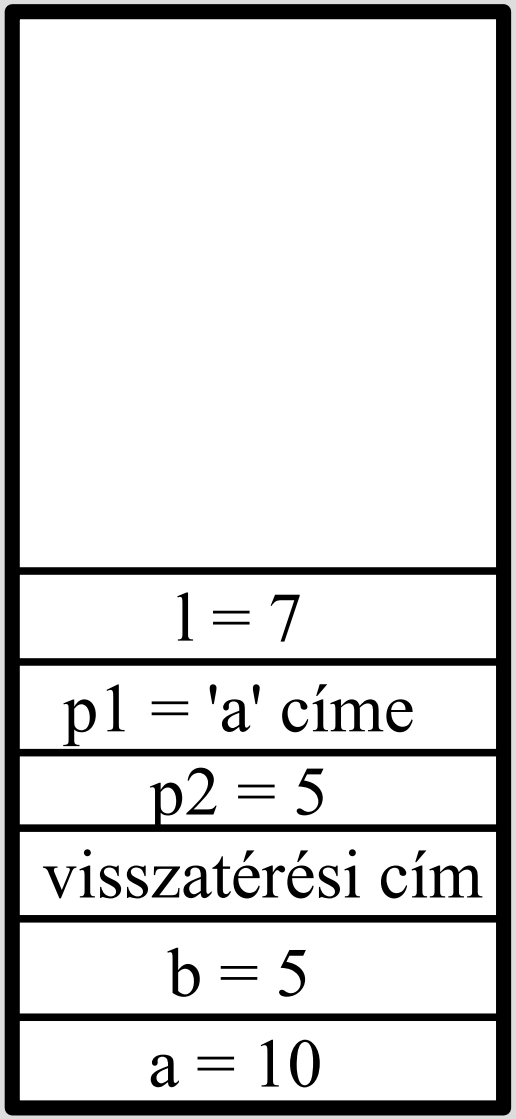
}
```

Stack (verem)




```c
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void fv(int * p1, int p2) {
   int l = 0;
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   int a = 2, b = 5;
   fv(&a, b);
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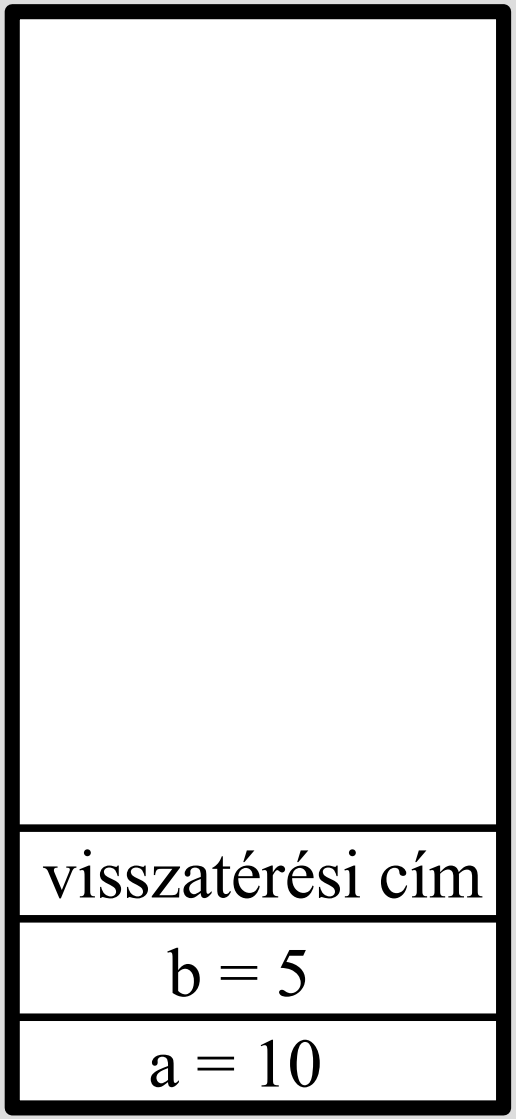


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void fv(int * p1, int p2) {
   int l = 0;
   l = *p1 + p2;
   *p1 = 10;
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   int a = 2, b = 5;
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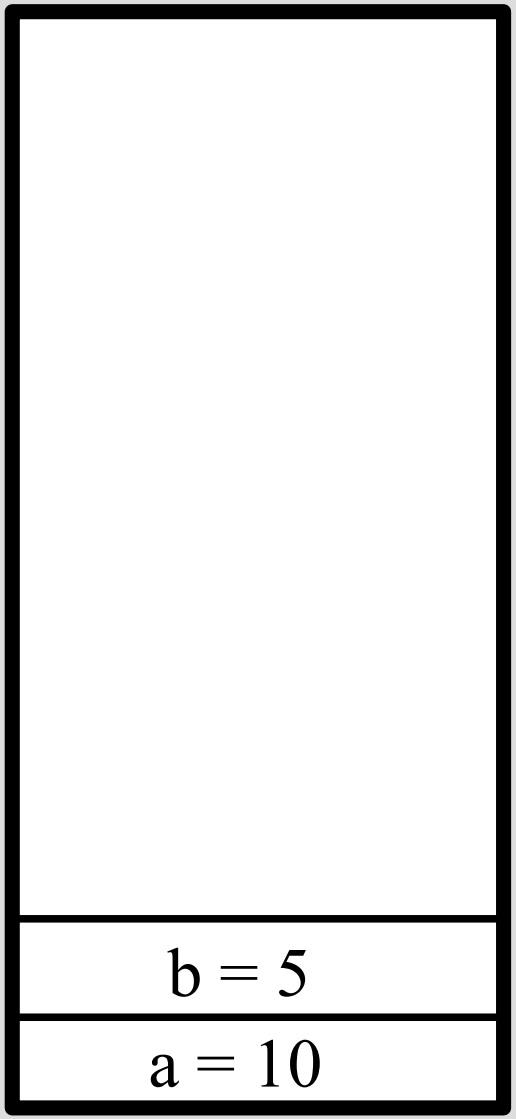


```c
#include <stdio.h>

void fv(int * p1, int p2) {
   int l = 0;
   l = *p1 + p2;
   *p1 = 10;
   printf("%d\n", l);
}

int main() {
   int a = 2, b = 5;
   fv(&a, b);
   return 0;
}
```

Feladat

- Írj függvényt, amely egy, a main függvényben lévő változó értékét módosítja!

Megoldás

```c
#include <stdio.h>

void fv(int * a) {
   *a = 30;
}

int main() {
   int valami = 5;
   printf("%d\n", valami);
   fv(&valami);
   printf("%d\n", valami);
   return 0;
}
```

Feladat

- Írj függvényt, amely két változó értékeit felcseréli!

Megoldás

```c
#include <stdio.h>

void csere(int * a, int * b) {
   int temp = *a;
   *a = *b;
   *b = temp;
}

int main() {
   int elso = 5, masodik = 10;
   csere(&elso, &masodik);
   printf("%d %d\n", elso, masodik);
   return 0;
}
```

Tömb

```c
#include <stdio.h>

int main() {
   int tomb[5];
   int i;
   int * ptr = tomb;
   for (i = 0; i < 5; i++) {
      *ptr = i;
      ptr++;
   }
   for (i = 0; i < 5; i++)
      printf("%d\n", tomb[i]);
   return 0;
}
```

Feladat

- Írj programot, amely mutatók segítségével dönti el egy stringről, hogy palindrom-e!

Megoldás

```
#include <stdio.h>

int main() {
   int palindrom = 1;
   char * str = "indulagorogaludni";
   char * ptr = str;
   while (*ptr != 0)
      ptr++;
   ptr--;
```

Megoldás

```
   while (str < ptr && palindrom) {
      if (*str != *ptr)
         palindrom = 0;
      str++;
      ptr--;
   }
   if (palindrom)
      printf("Palindrom\n");
   else
      printf("Nem palindrom\n");
   return 0;
}
```

Kérdés

- Mi a különbség?

```c
#include <stdio.h>

int main() {
   char * str1 = "ez egy string";
   char str2[] = "ez is egy string";

   return 0;
}
```

Kérdés

- Melyik sor hibás?

```c
#include <stdio.h>

int main() {
   char * str1 = "ez egy string";
   char str2[] = "ez is egy string";

   str1++;              // A
   str2++;              // B
   str1[0] = 't';       // C
   str2[0] = 't';       // D
   return 0;
}
```