Friday Feb 19, 2021

Today:
- recap questions ✓
- ex4-2, pointer to pointer
- dynamic 2D arrays (kind of)

Recap Qs
- ex4-3 (please git pull first)

HW3 - due Tues Feb 23 by 11pm

slido.com
jhuicp01

1)

draw pictures!

```
// Example code
int arr[] = { 94, 69, 35, 72, 9 };
int *p = arr;
int *q = p + 3;
int *r = q - 1;
printf("%d %d %d\n", *p, *q, *r);
ptrdiff_t x = q - p;
ptrdiff_t y = r - p;
ptrdiff_t z = q - r;
printf("%d %d %d\n", (int)x, (int)y, (int)z);
ptrdiff_t m = p - q;
printf("%d\n", (int)m);
int c = (p < q);
int d = (q < p);
printf("%d %d\n", c, d);
```

94 72 35

3 2 1

-3

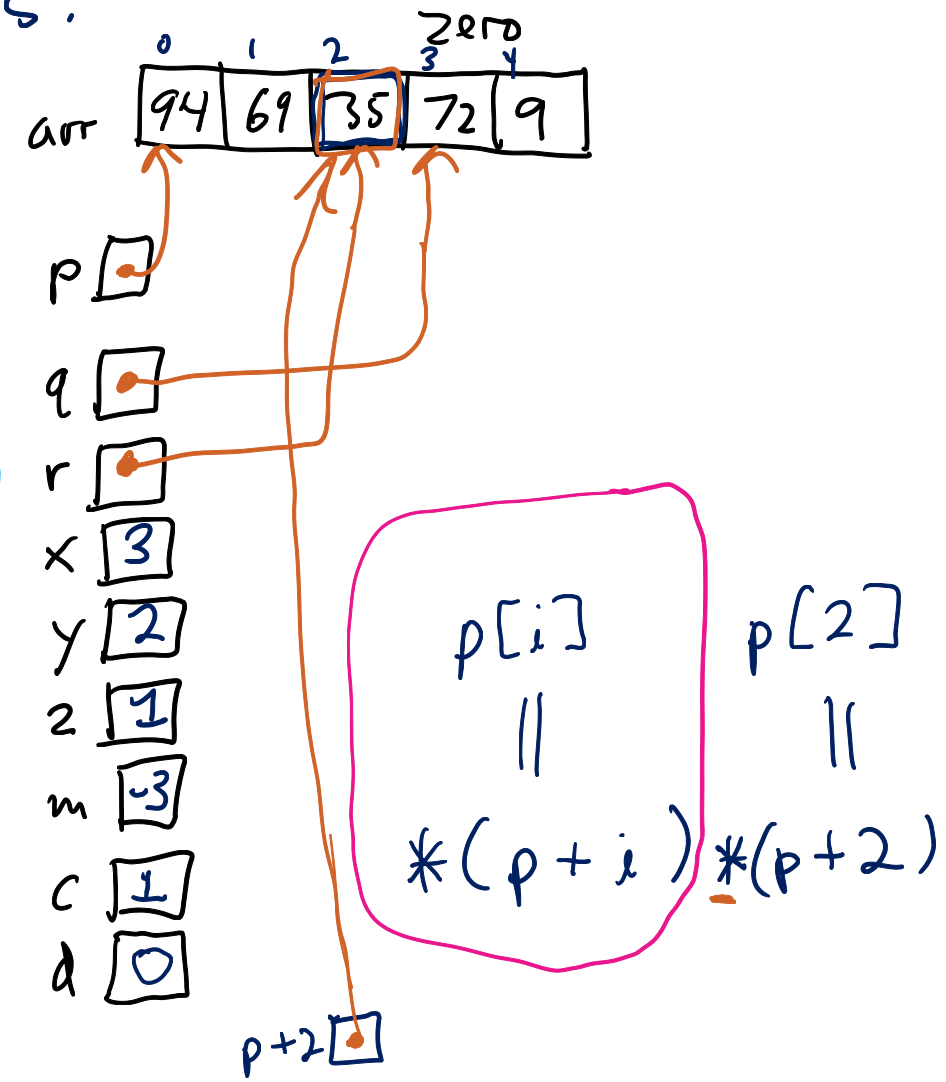
1 0

-q -3 → q = p + 3

-9 -3 → -3 = p - q

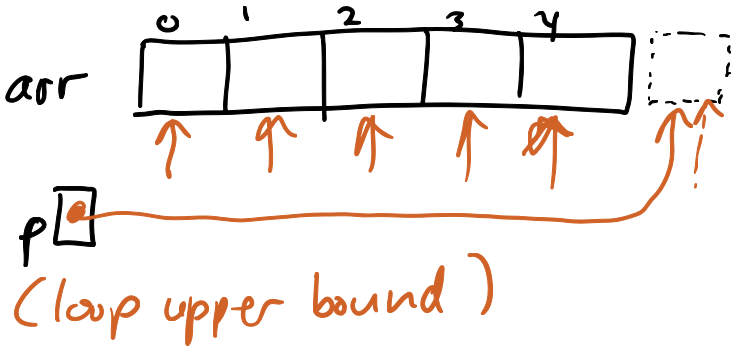
3 = q - p

} q > p



2) yes

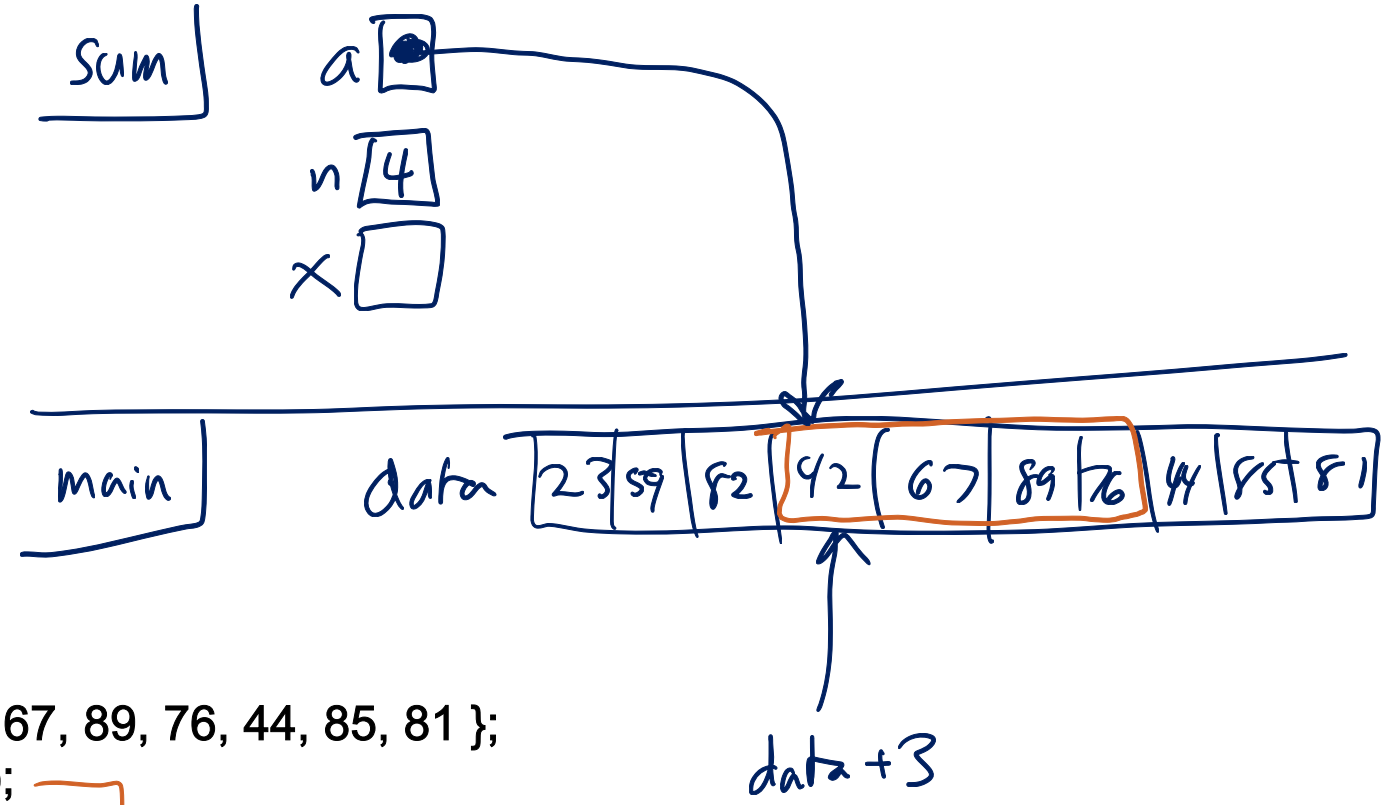
3) no



4)

```
int sum(int a[], int n) {
  int x = 0;
  for (int i = 0; i < n; i++) {
    x += a[i];
  }
  return x;
}

int main(void) {
  int data[] = { 23, 59, 82, 42, 67, 89, 76, 44, 85, 81 };
  int result = sum(data + 3, 4);
  printf("result=%d\n", result);
  return 0;
}
```



5)

Suppose we have variables/declarations

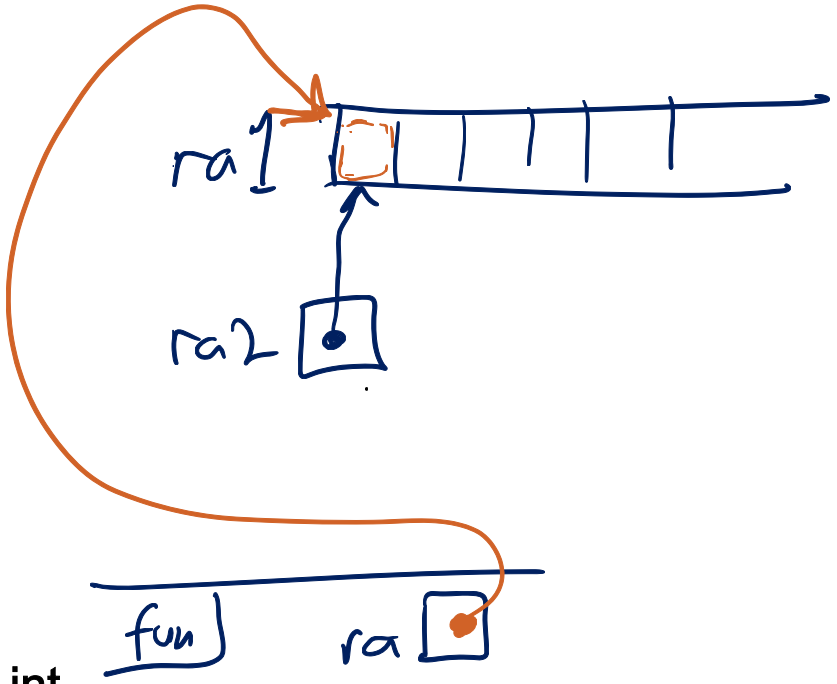
```
int ra1[10] = { 1, 2, 3};
int * ra2 = ra1;

int fun(int *ra);
```

Will fun(ra1); compile? ✓ yes

Will fun(ra2); compile? ✓ yes

What if we change the function declaration to int fun(const int ra[]);? ✓ yes



|| equivalent

```
int fun(int *ra) {
```

```
int fun(const int *ra) {
```

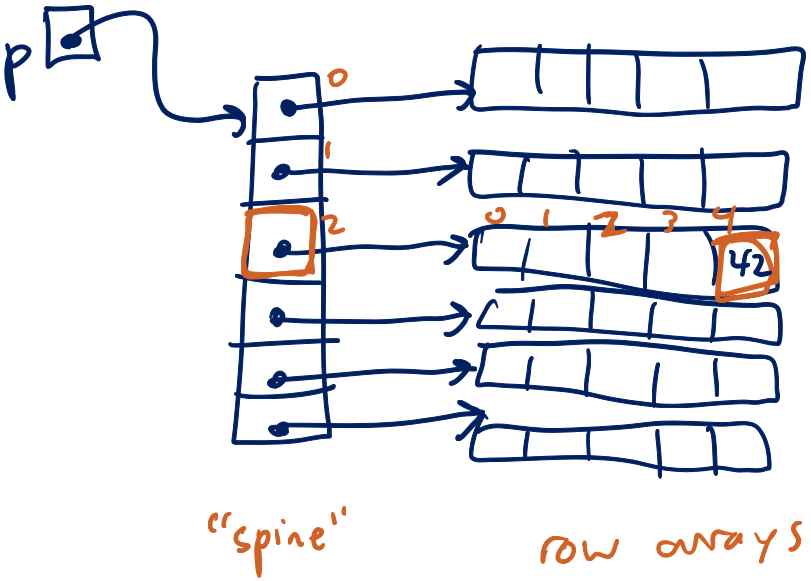
?

~~ra[0] = 42;~~

"const" = "read only"

"dynamic 2D arrays"

```
int **p;
```




```
p[2][4] = 42;
```