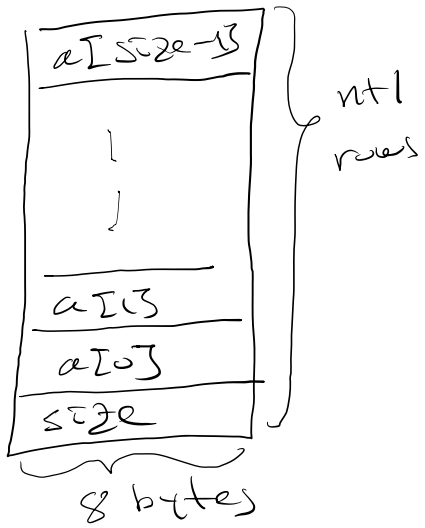
Array Manipulation

① create a region of n bytes and store address in %rcx

```
movq $n, %rdi
callq _malloc
```



Java arrays of n integers will be represented by 8(n+1) bytes

So to create an array of n longs we must allocate 8(n+1) bytes and store n in the 1st 8 bytes

```
movq $n, %rdi
incq %rdi                 # add 1 to %rdi
shlq $3, %rax             # shift left by 3 bits
                          # = multiply by 8
callq _malloc
movq %rax, -N(%rbp)       # move array address
                          # to local variable
                          # in the frame
movq $n, (%rax)           # store size in array
                          # in 1st 8 bytes
movq $3, %rcx
movq $200, (%rax, %rcx, 8)
                          # store 200 in a[3]
movq (%rax, %rcx, 8), %r7
                          # copy a[3] to r7
```