

• Homework

- Analyze the assembly code of the program with 3D-array, record, enumeration type, union, floating point, and pointer in your favorite language.

⇔ storage allocation

⇔ referencing mechanism

```
#include <stdio.h>
int a[10][10][10] ;
struct AA {
    int    a ;
    char    b ;
    float   c;
} aa ;

enum days {Sun, Mon, Tue, Wed,
           Thu, Fri, Sat} d1;

union BB {
    char a ;
    int b;
} bb ;

int *cc, k ;

main() {
    k = a[4][5][7] ;
    d1 = Sun ;
    bb.b = k ;
    cc = &bb.b ;
}
```

test.c

```
.file    "test.c"
.version    "01.01"
gcc2_compiled.:
.text
        .align 4
.globl main
        .type    main,@function
main:
        pushl    %ebp
        movl     %esp,%ebp
        movl     a+1828,%eax
        movl     %eax,k
        movl     $0,d1
        movl     k,%eax
        movl     %eax,bb
        movl     $bb,cc

.L2:
        leave
        ret

.Lfe1:
        .size    main,.Lfe1-main
        .comm    a,4000,32
        .comm    aa,12,4
        .comm    d1,4,4
        .comm    bb,4,4
        .comm    cc,4,4
        .comm    k,4,4
        .ident    "GCC: (GNU) 2.95.1 (release)"
```

test.s

→ % cc -S test.c