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struct_vcphp.txt

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```

1  #include <stdio.h>
2
3  typedef struct {
4      char c1;
5      int i1;
6      char c2;
7      double d1;
8  } A;
9
10
11 void main(int argc, char **argv, char **envp) {
12     A a1;
13     A *ap = &a1;
14
15     a1.i1 = 1;
16     ap->c2 = a1.c1;
17     ap->d1 = 3.14;
18 }
19
20
21
22
23
24
25 ; Listing generated by Microsoft (R) Optimizing Compiler Version 18.00.21005.1
26
27     TITLE      c:\K-StateCourses\cis722\Text\Text14\Codes\struct_asm\struct.c
28     .686P
29     .XMM
30     include listing.inc
31     .model flat
32
33
34 INCLUDELIB LIBCMT
35 INCLUDELIB OLDNAMES
36
37 PUBLIC  _main
38 PUBLIC  __real@40091eb851eb851f
39 EXTRN  @__security_check_cookie@4:PROC
40 EXTRN  __security_cookie:DWORD
41 EXTRN  __fltused:DWORD
42 ;      COMDAT  __real@40091eb851eb851f
43 CONST  SEGMENT
44 __real@40091eb851eb851f DQ 040091eb851eb851fr    ; 3.14
45 CONST  ENDS
46 ; Function compile flags: /Odtp
47 ; File c:\k-statecourses\cis722\text\text14\codes\struct_asm\struct.c
48 _TEXT  SEGMENT
49 _ap$ = -32                                ; size = 4
50 _al$ = -28                                ; size = 24
51 __$ArrayPad$ = -4                        ; size = 4
52 _argc$ = 8                               ; size = 4
53 _argv$ = 12                              ; size = 4
54 _envp$ = 16                              ; size = 4
55 _main  PROC
56
57 ; 11      : void main(int argc, char **argv, char **envp) {
58
59     00000 55          push    ebp
60     00001 8b ec       mov     ebp, esp
61     00003 83 ec 20    sub     esp, 32                ; 00000020H
62     00006 a1 00 00 00 00 mov     eax, DWORD PTR __security_cookie
63     0000b 33 c5       xor     eax, ebp
64     0000d 89 45 fc       mov     DWORD PTR __$ArrayPad$, eax
65
66 ; 12      :     A a1;
67 ; 13      :     A *ap = &a1;
68
69     00010 8d 45 e4       lea     eax, DWORD PTR _al$(ebp)
70     00013 89 45 e0       mov     DWORD PTR _ap$(ebp), eax
71
72 ; 14      :
73 ; 15      :     a1.i1 = 1;

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74
75     00016 c7 45 e8 01 00      mov     DWORD PTR _al$(ebp+4), 1
76     00 00
77
78 ; 16      :     ap->c2 = a1.c1;
79
80     0001d 8b 4d e0      mov     ecx, DWORD PTR _ap$(ebp)
81     00020 8a 55 e4      mov     dl, BYTE PTR _al$(ebp)
82     00023 88 51 08      mov     BYTE PTR [ecx+8], dl
83
84 ; 17      :     ap->d1 = 3.14;
85
86     00026 8b 45 e0      mov     eax, DWORD PTR _ap$(ebp)
87     00029 f2 0f 10 05 00      movsd   xmm0, QWORD PTR __real@40091eb851eb851f
88     00 00 00
89     00031 f2 0f 11 40 10      movsd   QWORD PTR [eax+16], xmm0
90
91 ; 18      : }
92
93     00036 33 c0          xor     eax, eax
94     00038 8b 4d fc       mov     ecx, DWORD PTR __$ArrayPad$(ebp)
95     0003b 33 cd          xor     ecx, ebp
96     0003d e8 00 00 00 00      call    @__security_check_cookie@4
97     00042 8b e5          mov     esp, ebp
98     00044 5d             pop     ebp
99     00045 c3             ret     0
100 _main  ENDP
101 _TEXT  ENDS
102 END

```