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; Listing generated by Microsoft (R) Optimizing Compiler Version 16.00.40219.01

    TITLE   C:\Users\Michael_Geiger\Documents\courses\16.317_micros_I\f12\misc\hll_assembly_test\
    hll_assembly_test\testfile.c
    .686P
    .XMM
    include listing.inc
    .model  flat

INCLUDELIB MSVCRTD
INCLUDELIB OLDNAMES

PUBLIC  __$ArrayPad$
PUBLIC  _main
EXTRN   ___security_cookie:DWORD
EXTRN   @__security_check_cookie@4:PROC
EXTRN   @_RTC_CheckStackVars@8:PROC
EXTRN   __RTC_Shutdown:PROC
EXTRN   __RTC_InitBase:PROC
;   COMDAT rtc$TMZ
; File c:\users\michael_geiger\documents\courses\16.317_micros_i\f12\misc\hll_assembly_test\
    hll_assembly_test\testfile.c
rtc$TMZ SEGMENT
__RTC_Shutdown.rtc$TMZ DD FLAT:__RTC_Shutdown
rtc$TMZ ENDS
;   COMDAT rtc$IMZ
rtc$IMZ SEGMENT
__RTC_InitBase.rtc$IMZ DD FLAT:__RTC_InitBase
; Function compile flags: /Odtp /RTCsu /ZI
rtc$IMZ ENDS
;   COMDAT _main
_TEXT   SEGMENT
_j$ = -120                      ; size = 4
_i$ = -108                      ; size = 4
_Y$ = -96                       ; size = 40
_X$ = -48                       ; size = 40
__$ArrayPad$ = -4                   ; size = 4
_main   PROC                        ; COMDAT

; 3    : void main() {

    push    ebp
    mov ebp, esp
    sub esp, 316                ; 0000013cH
    push    ebx
    push    esi
    push    edi
    lea edi, DWORD PTR [ebp-316]
    mov ecx, 79                 ; 0000004fH
    mov eax, -858993460             ; ccccccccH
    rep stosd
    mov eax, DWORD PTR ___security_cookie
    xor eax, ebp
    mov DWORD PTR __$ArrayPad$[ebp], eax

; 4    :
; 5    :    int X[10], Y[10];   // integer arrays
; 6    :    int i, j;           // index variables
; 7    :
; 8    :    for (i = 0; i < 10; i++) {      // outer loop

    mov DWORD PTR _i$[ebp], 0
    jmp SHORT $LN8@main
$LN7@main:
    mov eax, DWORD PTR _i$[ebp]
    add eax, 1
```

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    mov DWORD PTR _i$[ebp], eax
$LN8@main:
    cmp DWORD PTR _i$[ebp], 10          ; 0000000aH
    jge SHORT $LN9@main

; 9    :        X[i] = i * 2;           // set X[i]

    mov eax, DWORD PTR _i$[ebp]
    shl eax, 1
    mov ecx, DWORD PTR _i$[ebp]
    mov DWORD PTR _X$[ebp+ecx*4], eax

; 10   :        for (j = 0; j < 10; j++) {  // inner loop

    mov DWORD PTR _j$[ebp], 0
    jmp SHORT $LN5@main
$LN4@main:
    mov eax, DWORD PTR _j$[ebp]
    add eax, 1
    mov DWORD PTR _j$[ebp], eax
$LN5@main:
    cmp DWORD PTR _j$[ebp], 10          ; 0000000aH
    jge SHORT $LN3@main

; 11   :            if (j < 5)          // set Y[j]

    cmp DWORD PTR _j$[ebp], 5
    jge SHORT $LN2@main

; 12   :                Y[j] = X[i] + j;        //  based on

    mov eax, DWORD PTR _i$[ebp]
    mov ecx, DWORD PTR _X$[ebp+eax*4]
    add ecx, DWORD PTR _j$[ebp]
    mov edx, DWORD PTR _j$[ebp]
    mov DWORD PTR _Y$[ebp+edx*4], ecx

; 13   :            else                //  value of j

    jmp SHORT $LN1@main
$LN2@main:

; 14   :                Y[j] = X[i] - j;

    mov eax, DWORD PTR _i$[ebp]
    mov ecx, DWORD PTR _X$[ebp+eax*4]
    sub ecx, DWORD PTR _j$[ebp]
    mov edx, DWORD PTR _j$[ebp]
    mov DWORD PTR _Y$[ebp+edx*4], ecx
$LN1@main:

; 15   :        }

    jmp SHORT $LN4@main
$LN3@main:

; 16   :    }

    jmp SHORT $LN7@main
$LN9@main:

; 17   : }

    xor eax, eax
    push    edx
    mov ecx, ebp
```

```
    push    eax
    lea edx, DWORD PTR $LN14@main
    call    @_RTC_CheckStackVars@8
    pop eax
    pop edx
    pop edi
    pop esi
    pop ebx
    mov ecx, DWORD PTR __$ArrayPad$[ebp]
    xor ecx, ebp
    call    @__security_check_cookie@4
    mov esp, ebp
    pop ebp
    ret 0
    npad    2
$LN14@main:
    DD  2
    DD  $LN13@main
$LN13@main:
    DD  -48                 ; ffffffd0H
    DD  40                  ; 00000028H
    DD  $LN11@main
    DD  -96                 ; ffffffa0H
    DD  40                  ; 00000028H
    DD  $LN12@main
$LN12@main:
    DB  89                  ; 00000059H
    DB  0
$LN11@main:
    DB  88                  ; 00000058H
    DB  0
_main   ENDP
_TEXT   ENDS
END
```