

NAME	MAIN
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[illegible]

```
; Description:      This program tests the display routine functions and event
;                  handling code for Homework #4. This is the main loop, and
;                  it initializes the chip select logic, timers, interrupts,
;                  and display code. Then, it calls DisplayTest, which
;                  tests each of the functions defined in display.asm.
```

```
; Input:      None.
```

```
; Output:      None.
```

```
; Algorithms:      None.
```

```
; Data Structures:  None.
```

```
; Known Bugs:      None.
```

```
; Revision History:
```

; 10/27/2016 Jennifer Du initial revision

; 10/29/2016 Jennifer Du commenting

```
; include files
```

$$\$INCLUDE (display.inc)$$

```
$INCLUDE (common.inc)
```

CGROUP	GROUP	CODE
--------	-------	------

DGROUP	GROUP	DATA, STACK
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99

CODE SEGMENT PUBLIC 'CODE'

```
ASSUME CS:CGROUP, DS:DGROUP, SS:STACK
```

```
;external function declarations
```

; These are contained in timer handler and event handler files

```
EXTRN    InitCS:NEAR                ; initializes chip select logic
```

```
EXTRN    InitTimer:NEAR          ; initializes timer
```

```
EXTRN    ClrIRQvectors:NEAR    ; installs IllegalEventHandler for relevant
```

```

; interrupts in the vector table

```

EXTRN InstallTimerHandler:NEAR; installs event handler for timer interrupt

EXTRN IllegalEventHandler:NEAR

```
EXTRN    InitDisplay:NEAR
```

; This was written by Prof. George

```
EXTRN    DisplayTest:NEAR    ; test function for display routines
```

START:

MAIN:

```
MOV     AX, DGROUP      ;initialize the stack pointer
```

MOV SS, AX

```
MOV     SP,  OFFSET (DGROUP:TopOfStack)
```

```
MOV     AX, DGROUP      ;initialize the data segment
```

```

MOV     DS, AX

CALL    InitCS           ;initialize the 80188 chip selects
                        ;  assumes LCS and UCS already setup

CALL    ClrIRQVectors    ; initialize interrupt vector table

CALL    InstallTimerHandler ;install the event handler
                        ;  ALWAYS install handlers before
                        ;  allowing the hardware to interrupt.

CALL    InitTimer        ;initialize the internal timer

CALL    InitDisplay      ;clear display and initialize muxing variables

STI     ;and finally allow interrupts.

CALL    DisplayTest      ; call the test code

Forever:
JMP     Forever          ;sit in an infinite loop, nothing to
                        ;  do in the background routine
        HLT              ;never executed (hopefully)

CODE    ENDS

; the data segment

DATA    SEGMENT         PUBLIC      'DATA'

DATA    ENDS

;the stack

STACK   SEGMENT STACK   'STACK'

        DB      80 DUP ('Stack ') ;240 words

        TopOfStack LABEL WORD

STACK   ENDS

        END        START

```