GNU: Declaring Section Names Explicitly

The GNU C Compiler places the code it generates from our source in one of three sections, i.e., `text,data,bss`. Sometimes we need additional sections or certain objects to appear in special sections. The GNU compiler allows us to declare a section name explicitly so that we can place the special section at a particular address.

The syntax to declare section names explicitly is:

```
__section__("name") declaration
```

The following is a sample C code that uses several specific section names:

```
__section__ ("STACK")       char stack[100] = {0};
__section__ ("INITVAR")     int seven = 7;
__section__ ("FRTREGISTER") unsigned char *frt = (unsigned char *) 0xff90;

main()
{
  int sum = 0;

  sum = sum + seven;
  *frt  = 0xfb70;
}
```

The compiler generated Assembly listing:

```
;       GCC For the Hitachi H8/300
;       By Hitachi America Ltd and Cygnus Support
;       release 2.1

        .file   "test.c"
        .global _stack
        .section        STACK
_stack:
        .byte 0
        .space 99
        .global _seven
        .section        INITVAR
        .align 2
_seven:
        .word 7
        .global _frt
        .section        FRTREGISTER
        .align 2
_frt:
        .word 65424
        .section .text
        .align 2
        .global _main
_main:
        push    r6
        mov.w   r7,r6
```

```
        jsr     @___main
        mov.w   @_frt,r1
        mov.b   #112,r0l
        mov.b   r0l,@r1
.L1:
        pop     r6
        rts
        .end
```

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