Homework 3

I. Use the memory mountain in Figure 6.41 in your text book (csapp) to estimate the time, in CPU cycles, to read an 8-byte word from the L1 d-cache.

II. Assume we compile the code

foo.c:

```
const int const_five = 5 ;
const int const_two = 2 ;
int five= 5;
int two = 0;
int uninitialized;
static int static_ten = 10;
static int static_uninit;

int f() {
    static f_static_i = 10;
    int f_i = 0;
}
int main() {
}
```

Please fill the following table:
(Note: show the distinction between .bss and COMM)

Symbol	.symtab entry?	Symbol type	Global/Local	Section
const_five				
const_two				
five				
two				
uninitialized				
static_ten				
static_uninit				
f				
f_static_i				
f_i				
main				

III. This problem concerns the m.o module from Figure 7.5 in the text book (csapp) and the following version of the swap.c function that counts the number of times it has been called:

```
extern int buf[];
int *bufp0 = &buf[0];
static int *bufp1;
static void incr()
{
        static int count=0;
        count++;
}

void swap()
{
        Int temp; 16
        incr();

        bufp1 = &buf[1];
        temp = *bufp0;
        *bufp0 = *bufp1;
        *bufp1 = temp;
}
```

For each symbol that is defined and referenced in swap.o , indicate if it will have a symbol table entry in the .symtab section in module swap.o . If so, indicate the module that defines the symbol (swap.o or m.o), the symbol type(local, global, or extern), and the section (.text, .data , or .bss) it occupies in that module.

Symbol	.swap.o .symtab entry?	Symbol type	Module where defined	Section
buf				
bufp0				
bufp1				
swap				
temp				
incr				
count				