ECE 154A

Homework #3

Solve problems 6.26, 6.27, 6.32 from Harris & Harris book (2nd edition) and problem 3.1, 3.2. below

3.1. Convert the following C function to MIPS assembly code (using only real MIPS instructions).

```c
void swap (int *a, int *b) {
    int temp;
    temp = *a;
    *a = *b;
    *b = temp;
}
```

3.2. Assume that mylist is the following structure in C

```c
struct mylist {
    int    a;
    struct mylist *next;
};
```

(i) Translate the following C function into equivalent MIPS one. Assume the input argument of the function is in $a0$ and the output is in $v0$. You may preserve only those registers across function calls which would be required for correct implementation. Also, assume that NULL pointer is 0.

```c
struct mylist *getend (struct mylist *p) {
    if (p -> next == NULL) return p;
    else return getend(p -> next);
}
```

(ii) Briefly explain in English what the function does.

Bonus problems (up to 50% extra points for this HW): Solve problem 6.38 and question 6.1 on page 369 from Harris & Harris book (2nd edition)

Submit your work either as a hardcopy to HW box (HFH 3rd floor) or electronically via email ucsb.ece.154a@gmail.com by 10 pm PDT of the day specified at the class website.