Introduction to Digital Computers / Computer Structure - Spring 2003
Assignment No. 11

Firm Deadline: May 29th - before the beginning of the lecture

Read the first section in the chapter on the Simplified DLX which appears in the Lecture Notes section of the course homepage. Write DLX instructions for the following program segments.

1. Suppose that f, g, h, i, j are variables that correspond to registers 16-20.

```
if (i == j) goto L1;
f = g + h;
L1: f = f - i;
```

2. Suppose that f, g, h, i, j are variables that correspond to registers 16-20.

```
if (i == j) f = g + h; else f = g - h;
```

3. Assume that A is an array of 100 elements (size of each element is a word) and that the compiler associates variables g, h, i, j to registers $17 - 20$. Suppose that the array A starts at address $Astart$.

```
LOOP: g = g+A[i];
i = i+j;
if (i !=h) goto LOOP;
```

4. Assume that variables i, k correspond to registers $19 - 20$, and that the array $save$ starts at address $Sstart$.

```
while (save[i]==save[k-i])
   i = i+1;
```

5. Assume that variables f, g, h, i, j, k correspond to registers $16 - 21$.

```
switch (k) {
   case 0: f = i + j; break;
   case 1: f = g + h; break;
   case 2: f = g - h; break;
   case 3: f = i - j; break;
}
```