

Homework Assignment 4

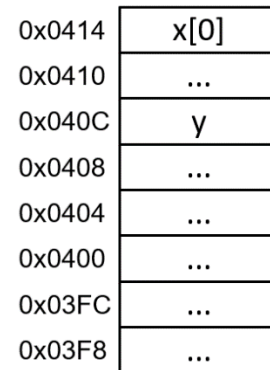
(Due 2:10pm, Dec. 9, email to daehyun.kim@wsu.edu or submit a hardcopy)

You should use the following instructions only.

- Instructions
 - ADD, SUB, AND, ORR, EOR, MOV, **MUL**
 - CMP, BGE/BLT/BGT/BLE/BEQ/BNE
 - B, BL, BX
 - LDR, STR, PUSH, POP

1. (100 points) Write an assembly code for the “for loop” in the following C code.

```
int x[10];
int* y = new int[10];
...
for ( int k = 0 ; k < 10 ; k++ ) {
    if ( x[k]%2 == 0 )
        y[k] = x[k];
    else
        y[k] = x[k] + 1;
}
```



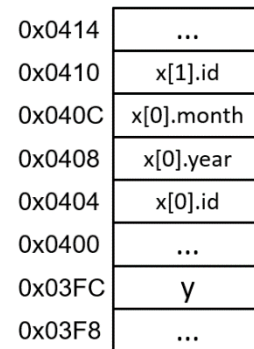
Main memory

- R0-R12 are freely available.
- You can use any of R0-R12 for “int k” (i.e., you don’t need to use the stack for k).

2. (100 points) Write an assembly code for the “for loop” in the following C code.

```
struct Student {
    int id;
    int year;
    int month;
};

Student x[10];
Student* y = new Student[10];
...
for ( int k = 0 ; k < 10 ; k++ ) {
    y[k].id = x[k].id;
    y[k].month = x[k].month;
}
```



Main memory

- R0-R12 are freely available.
- You can use any of R0-R12 for “int k” (i.e., you don’t need to use the stack for k).