

# Cs352 — Quiz

Duration — 25 mins. The grade of this quiz determines 2% of your final grade.

Name:

ID:

1. Consider the following program:

```
#include<stdio.h>
main(){
    int *pi ; char *pc ;
    int a[100];
    pi = a ; pc = (char*) &a[0];
    pi++ ; pc++;
    if( ( char*) pi==pc ) printf("1");
    else if ( (char*) pi > pc ) printf("2");
    else printf("3");
}
```

What would be the output of the following program ? Explain in details.

[Output is “2”. At first, pi and pc are both pointing to the same position - the starting point of the array a[100]. Because the base type of pi is “int”, when doing the pointer arithmetic  $pi++$ , it moves `sizeof(int)` bytes. Similarly,  $pc++$  will cause pc move `sizeof(char)` bytes. Because `sizeof(int)` is greater than `sizeof(char)`, pi is greater than pc after the pointer arithmetic.]

2. The purpose of the following function, called *average* is to read a sequence of integers from the user, and returns their average. The user signals the end of the input by hitting ^ d (that is, send EOF). Please fill out the missing parts, marked by underlines. Note that the returned number should be as close as possible to the real arithmetic average.

```
double average(void){
    int sum = 0, i = 0 ,x ;
    while( 1 == scanf( “%d”, &x ) {
        i++;
        sum = sum + x ;
    }
    return sum/((double)i)
}
```