#1. Given the following code snippet:

```c
static int cling = 420;
void foo( int a )
{
    static long johns = 2;
    short stop = 5;
    ...
}
```

The variable `cling` will be stored in the ______________________________ in the C Runtime Environment.

List which symbol(s)/name(s) will be listed in the .global directive when this code segment is compiled:

If the function `foo()` is called 5 times, how many times will the variable `stop` be initialized to 5? _______
How many times will the variable `johns` be initialized to 2? _______
How many times will the variable `cling` be initialized to 420? _______

The variable `stop` will be stored in the ______________________________ in the C Runtime Environment.

The keyword _________________ is used to turn off all kinds of optimizations in C/C++/Java.

List the 2 main functions of the Linkage Editor:

1)

2)

#2. What gets printed if the following function is invoked as `recurse( 2, 10 )`?

```c
int recurse( int a, int b ) {
    int local = b - a;
    int result;
    if ( b > 7 )
        result = local + recurse( a, b - 1 );
    else
        result = local;
    printf( "%d\n", result );
    return result;
}
```

(over)
#3. Given the following program, reorder the printf lines so that the values that are printed are sorted from smallest to largest if compiled and run on a Sun SPARC architecture. These lines print out the address of the different parts of the program (not the values assigned) with the printf() format specifier %p.

```c
int a = 420;

int main( int argc, char *argv[] ) {
    static int b;
    int c = 404;

    /* 1 */ (void) printf( "b --> %p\n", &b );
    /* 2 */ (void) printf( "a --> %p\n", &a );
    /* 3 */ (void) printf( "main --> %p\n", main );
    /* 4 */ (void) printf( "argc --> %p\n", &argc );
    /* 5 */ (void) printf( "malloc --> %p\n", malloc(50) );
    /* 6 */ (void) printf( "c --> %p\n", &c );
}
```

This line number would print the smallest value

This line number would print the largest value

What question would you most like to see on the Final Exam?