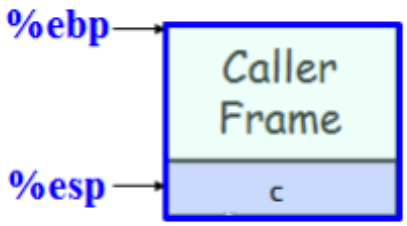
1. Translate the following assembly into C codes. Note that you can name local variables represented by -16(%rbp), -12(%rbp)… freely as you like.

```
        pushq   %rbp
        movq    %rsp,   %rbp
        subq    $16,    %rsp
        movl    $1,   -16(%rbp)
        movl    $1,   -12(%rbp)
        movl    $3,   -8(%rbp)
        jmp     .L2
.L3:
        movl    -16(%rbp),   %eax
        movl    %eax,    -4(%rbp)
        movl    -12(%rbp),   %eax
        movl    %eax,    -16(%rbp)
        movl    -4(%rbp),    %eax
        addl    %eax,    -12(%rbp)
        addl    $1,   -8(%rbp)
.L2:
        cmpl    $12, -8(%rbp)
        jle     .L3

    (Following code omitted)
```

2. Draw a stack for each step when the following function is being called and indicate where %ebp and %esp points. Here is an example where the first step takes place.

   int Cal(int a, float b, double c);



3. Assume the initial value of the flags below is 0. Please indicate the status (0, 1) of the following flags after the instructions being executed. Assume -2 in %eax and 1 in %ebx. The following instructions execute independently and would NOT affect each other. Assume that in the instructions below, the left is the source operand, the right is the dest operand.

Instruction	OF	SF	ZF	CF
leal (%edx,%edx,2),%edx				
addl %eax, %ebx				
xorl %eax, %eax				
cmpl %ebx, %eax				

4. Translate the statements ***line 4 ~ line 9*** into assembly. Please use ebp(rbp for 64-bit machine) as the base address register, i.e. the immediate 1 and 2 should be put at the address -8(%ebp) and -4(%ebp) respectively.

```
 1  #include <stdio.h>
 2
 3  int main(){
 4      int a = 1;
 5      int b = 2;
 6
 7      if(a < b){
 8          a = b;
 9      }
10
11      printf("a = %d\nb = %d\n", a , b);
12  }
```