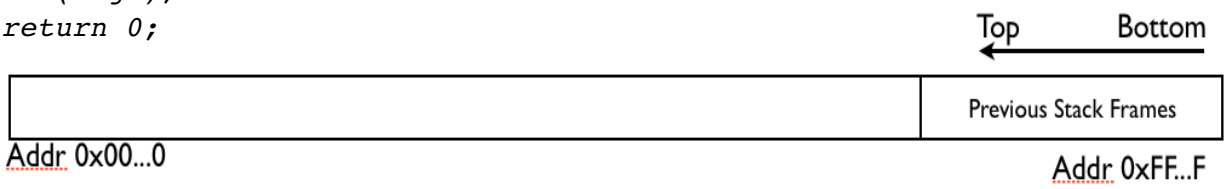
CSE 484 In-section Worksheet #2

Q1. Draw the stack at the beginning of function `foo`. (file is `target0.c`)

```
int foo(char *argv[]){
  char buf[336];
  strcpy(buf, argv[1]);
}
int main(int argc, char *argv[]){
  if (argc != 2) {
      fprintf(stderr, "target1: argc != 2\n");
      exit(EXIT_FAILURE);
    }
  foo(argv);
  return 0;
}
```



Q2. How is this program vulnerable? How can we structure `buf` to exploit this vulnerability? Fill in the program below. (file is `sploit0.c`)

```
#define TARGET "/bin/target0"
#define EIP _____ // How do we find this out? What does it represent?
#define BUFLEN _____
int main(void){
  char *args[3];
  char *env[1];
  char buf[_____];    // What size should this be?
  memset(________,________,________);
  // How does strcpy know when to stop?
 ________________
  memcpy(________,________,________);
  // Where do we put EIP? (hint: pointer arithmetic)
  ________________
  args[0] = TARGET;
  args[1] = buf;
  args[2] = NULL;
  env[0] = NULL;
  if (0 > execve(TARGET, args, env))
    perror("execve failed");
  return 0;
}
```

Q3. What `gdb` (or `cgdb`) statement and sequence of commands will let us step through these programs if the files are `~/sources/target0.c` and `~/sploits/sploit0.c` while the executables are `/bin/target0` and `~/sources/sploit0`?