

grader.c (Page 1 of 1)

```
1: #include <stdio.h>
2: #include <string.h>
3: #include <stdlib.h>
4: #include <sys/mman.h>
5:
6: enum {BUFSIZE = 48};
7:
8: char grade = 'D';
9: char name[BUFSIZE];
10:
11: void readString(void)
12: {
13:     char buf[BUFSIZE];
14:     int i = 0;
15:     int c;
16:
17:     for (;;)
18:     {
19:         c = fgetc(stdin);
20:         if ((c == EOF) || (c == '\n'))
21:             break;
22:         buf[i] = c;
23:         i++;
24:     }
25:     buf[i] = '\0';
26:
27:     for (i = 0; i < BUFSIZE; i++)
28:         name[i] = buf[i];
29: }
30:
31: void getName(void)
32: {
33:     printf("What is your name?\n");
34:     readString();
35: }
36:
37: int main(void)
38: {
39:     mprotect((void*)((unsigned long)name & 0xfffffffffff000), 1,
40:             PROT_READ | PROT_WRITE | PROT_EXEC);
41:
42:     getName();
43:
44:     if (strcmp(name, "Andrew Appel") == 0)
45:         grade = 'B';
46:
47:     printf("%c is your grade.\n", grade);
48:     printf("Thank you, %s.\n", name);
49:
50:     return 0;
51: }
```