

CSSE 132 – Introduction to Systems Programming
 Rose-Hulman Institute of Technology

Quiz 12 Command-line Arguments

Name (Print): _____ RHIT Username: _____

1. What is the command to use to compile/assemble/link a C file, say `program.c`, to an executable file `program`?

2. Given input arguments of main function `int main(int argc, char** argv)`, what is `argc` and what is `argv`?

`char** argv` is a pointer that points to where each entry points to .

`int argc` is an integer that counts the number of , including .

3. What does the following code print out? If the program is called `a.out`, and we run the program by typing `./a.out abcd efg`

```
1 #include <stdio.h>
2 int main(int argc, char** argv) {
3     for(int i = 0; i < argc; i++){
4         printf("%s\n", argv[i]+i);
5     }
6     return 0;
7 }
```

Output:

```
1 #include <stdio.h>
2 int main(int argc, char** argv) {
3     for(int i = 0; i < argc; i++){
4         char* ptr = *(argv + i);
5         *(ptr + i) = '\0';
6         printf("%s\n", ptr);
7     }
8     return 0;
9 }
```

Output:

4. The following code is compiled into a program called `a.out` and then it is executed with the command line:

```
./a.out APPLETAX
```

```
1 #include <stdio.h>
2 #include <string.h>
3
4 int main(int argc, char** argv) {
5     char* p = argv[1]; //get the first argument
6     char* q = p + strlen(p) - 1;
7     char t;
8
9     while(*p != 'A') {
10         p++;
11     }
12     while(*q != 'A') {
13         q--;
14     }
15     while(p < q){
16         t = *p;
17         *p = *q;
18         *q = t;
19         printf("%c - %c: %s\n",*p,*q,argv[1]);
20         p++;
21         q--;
22     }
23     /* printf("%s",q); */
24     return (q - argv[1]);
25 }
```

Note that line 23 is commented out (will not execute). Based on the given information, answer the following questions.

- (a) How many times will `printf` be called?
- (b) What will be printed when this code executes?
- (c) What would be printed by the `printf` on line 23 if it was not commented out?
- (d) What value does the function return?