

Random Testing Quiz

For this Random Testing Quiz, I created two functions to get random characters and strings.

For random characters, I looked up all characters in ASCII chart, starting from ' ' to '~'. The range is 32(' ') to 126('~'). Next, I create a char, use ' ' to add a randomly value from 0~94. (32+94=126) Then I output the result. The output will be a random characters from ' ' to '~'.

For random strings, first, I tried to create a random length string by following code:

```
int i = 1+rand()% 5;
```

```
char *str = new char[i];
```

I can compile it by gcc it in command line, but I cannot compile it by Makefile. On the other hand, it will reduce a lot of chance on hitting state 9. Finally I made a string of length 5 by a static char. (It is assigned as length 6 to include /0)

For an easily way to get reset and exit, I created a char to hold random lowercase letters from e-t using random input from a-z and insert them to the 5 slots of string. Finally, output the string. My original code is:

But a whole run will be much longer than an easily walkthrough. Here is my "easier-exit" code for testing inputString:

```
char *inputString()
```

```
{
```

```
    char ch;
```

```
    static char str[6];
```

```
    for(int j = 0; j < 5; j++){
```

```
        int e = rand() % 4;
```

```
        if(e==1)           //random letter from  'r' 'e' 's' 'e' 't'
```

```
        ch = 'r';
```

```
        else if(e==2)
```

```
        ch = 'e';
```

```
        else if(e==3)
```

```
        ch = 's';
```

```
        else
```

```
        ch = 't';
```

```
        str[j] = ch;
```

```
    }
```

```
    return str;
```

```
}
```

Finally, create a makefile, include -ftest-coverage -fprofile-arcs command to create .gcn0 and .gcda file for coverage test, and then run gcov to get the code coverage.