Assignment #3 – Hex Dump Utility

Assigned: October 3, 2018

Due: October 19, 2018

In this assignment you will create a simple shell C based hex dump utility for Linux.

1. Use a makefile to automate the build for this assignment.
2. The program MUST support the following:
    - ❑ if argc = 2, open the path given in the contents of argv[1] to a maximum of 2^32 bytes (4GB)
    - ❑ if argc <= 1, or the open fails, open /dev/urandom instead (max 160 bytes from this default source)
    - ❑ Hex dump all the bytes of the file, or until end of file is encountered. Dump 16 bytes per line, with a counter, as below:

```
00000000: 20 72 65 74 75 72 6E 20 30 3B 0D 0A 3E 20 7D 0D
00000010: 34 A4 56 70 00 04 DC A0 01 98 B8 B8 00 01 AB AC
```

   - ❑ At end of output, print "EOF" on a separate line

3. Implement the following command line option flags:

    -d   format the output as the hex dump show ASCII to the right as given below.

```
00000000:  20 72 65 74 75 72 6E 20   30 3B 0D 0A 3E 20 7D 0D   .return.0;..>.}.
```

    Note: non-printable ASCII will be represented by a dot (period).

    -h   output basic help information (see other Linux commands for examples of how to generate help output

Submit your makefile and C source code to the drop box for this assignment by the due date.

Marking Scheme:

Item	Category	Comments	Missing	Poorly implemented or not functional	Meets expectation	Exceeds expectation
1	Hex dump	Features implemented as specified	0	4	8	10
2	Commandline options	Features implemented as specified	0	4	8	10
3	Code Maintainability	Code designed for long term maintainability	0	2	4	5

4	Code Documentation	Appropriate use of commenting for source files, functions, etc.	0	4	8	10
5	Errors / Bugs	1 mark deducted per bug, maximum 5				
6	Total (max 40)					

This assignment is weighted as 6% of final grade.