ECE 4029: Operating Systems and System Programming

SPRING 2022

HOMEWORK IV

Given: Mar. 25, 2022

Programming problem:

Assume that a system has a 32-bit virtual address with a 4-KB page size. Write a C program that is passed a virtual address (in decimal) on the command line and have it output the page number and offset for the given address. As an example, your program would run as follows:

    ./a.out 19986

Your program would./d output:

    The address 19986 contains:

    page number = 4

    offset = 3602

Hint: Writing this program will require using the appropriate data type to store 32 bits. It is recommended that you use unsigned data types.

Please submit your source code for this question. To receive full credits for this problem, please include screen shots of your test results.a.out

```
osc@ubuntu:~/q6$ gcc hw4.c
osc@ubuntu:~/q6$ ls
a.out   hw4.c
osc@ubuntu:~/q6$ ./a.out
Useage: <virtaual address (in decimal)>
osc@ubuntu:~/q6$ ./a.out 1 2
Useage: <virtaual address (in decimal)>
osc@ubuntu:~/q6$ ./a.out 19986
The address 19986 contains:
page number = 4
offset = 3602
osc@ubuntu:~/q6$ ./a.out 16384
The address 16384 contains:
page number = 4
offset = 0
osc@ubuntu:~/q6$
```