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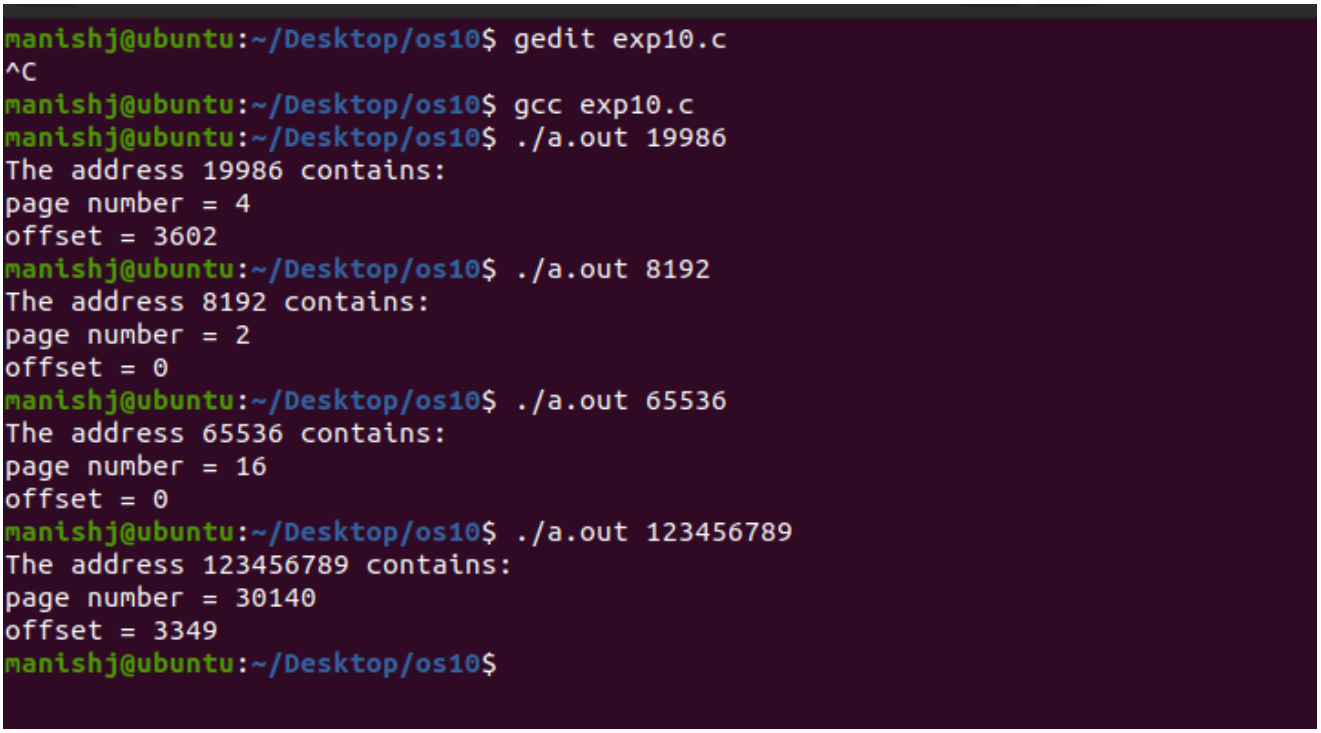
Experiment 10

Aim

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.

Code:

```c
#include <stdio.h>
#include <stdlib.h>

#define PAGE_SIZE 4096 // 4KB in bytes

int main(int argc, char *argv[]) {
    if (argc != 2) {
        printf("Usage: %s <virtual_address>\n", argv[0]);
        return 1;
    }

    unsigned int virtual_address = atoi(argv[1]);
    unsigned int page_number = virtual_address / PAGE_SIZE;
    unsigned int offset = virtual_address % PAGE_SIZE;

    printf("The address %u contains:\n", virtual_address);
    printf("page number = %u\n", page_number);
    printf("offset = %u\n", offset);

    return 0;
}
```

Output:	
Conclusion	Hence, by completing this experiment I came to know about 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.