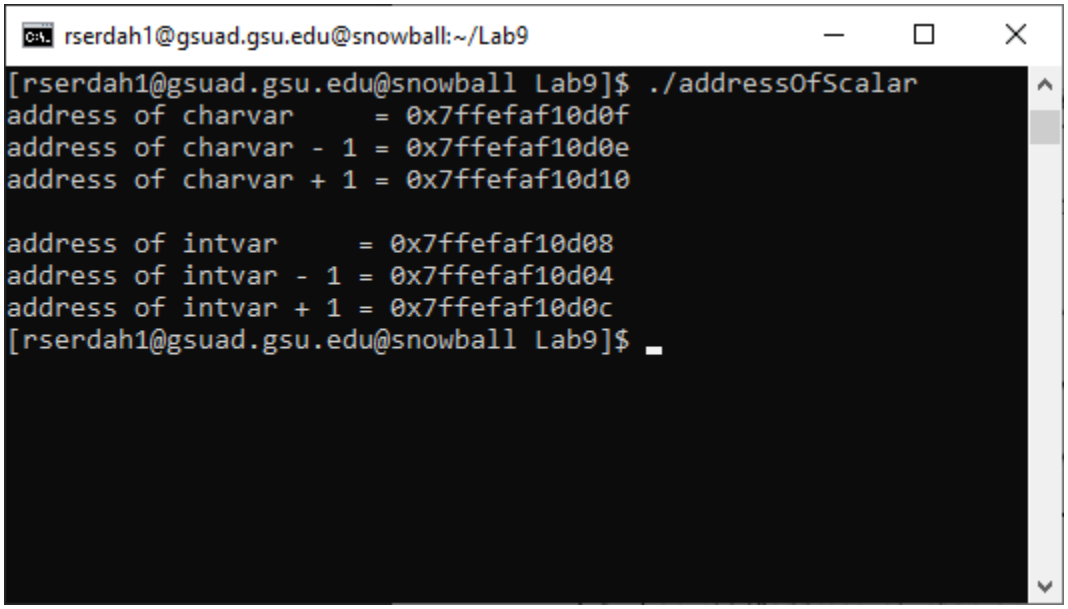
Lab 9
Ramey Serdah

getMostFreqChar.c

rserdah1@gsuad.gsu.edu@snowball:~/Lab9

```
[rserdah1@gsuad.gsu.edu@snowball Lab9]$ cat test.txt
This is a list of courses.
CSC 1010 - COMPUTERS & APPLICATIONS
[rserdah1@gsuad.gsu.edu@snowball Lab9]$ ./getMostFreqChar test.txt
This is a list of courses.
CSC 1010 - COMPUTERS & APPLICATIONS
The most frequent letter is 'S'. It appeared 8 out of 63 times.
[rserdah1@gsuad.gsu.edu@snowball Lab9]$
```

addressOfScalar.c




```c
#include <stdio.h>

int main()
{
        // intialize a char variable, print its address and the next address
        char charvar = '\0';
        printf("address of charvar     = %p\n", (void *)(&charvar));
        printf("address of charvar - 1 = %p\n", (void *)(&charvar - 1));
        printf("address of charvar + 1 = %p\n\n", (void *)(&charvar + 1));

        // intialize an int variable, print its address and the next address
        int intvar = 1;
        printf("address of intvar     = %p\n", (void *)(&intvar));
        printf("address of intvar - 1 = %p\n", (void *)(&intvar - 1));
        printf("address of intvar + 1 = %p\n", (void *)(&intvar + 1));


        return 0;
}
```

The address of `intvar` is incremented by 4 bytes because integers are 4 bytes each, so the next int after `intvar` would be located 4 bytes after the address of `intvar`. `Char` is the type that contains only one byte.

addressOfArray.c

```
rserdah1@gsuad.gsu.edu@snowball:~/Lab9
[rserdah1@gsuad.gsu.edu@snowball Lab9]$ ./addressOfArray
numbers    = 0x7fff41cd8d70
numbers[0] = 0x7fff41cd8d70
numbers[1] = 0x7fff41cd8d74
numbers[2] = 0x7fff41cd8d78
numbers[3] = 0x7fff41cd8d7c
numbers[4] = 0x7fff41cd8d80
sizeof(numbers) = 20
[rserdah1@gsuad.gsu.edu@snowball Lab9]$
```

Yes, the address of the array and the address of the first element are the same.

```
printf("length of numbers  = %lu\n", sizeof(numbers) / 4);
```