60-256 System Programming Winter 2017

Lab #2 – System Call I/O

Notes:
1. You can only use system call open/close/read/write/lseek. No library I/O allowed.
2. You may be given different text files for lab test. Those texts may include *line feed*, *tab*, *space*, *integer*, *string* etc.

Part I.

Consider the following text file *list1.txt*.

101 GM Buick 2010
102 Ford Lincoln 2005

There are three blanks between the first and the second columns. There is one tab between the second and third, and between the third and fourth columns.

Execute the following command to display the file content. Check if that is what you typed.

```
>>>>> od –c list1.txt
```

Now execute the following command to display the file content.

```
>>>>> od –x list1.txt
```

Part II.

Write a C program called *writer.c*. It uses system call I/O to create a file called *list2.txt* which has the same content as *list1.txt*. You can only call function *write* once. After file *list2.txt* is created, type the following commands to check the content of the file:

```
>>>>> more list2.txt
>>>>> od –c list2.txt
```

Part III.

Write a C program called *change1.c*. Use system call I/O to open the file *list2.txt,* and replace the *string 101* with *integer 101*. After executing the program, type the following commands to check the content of the file:

```
>>>>> more list2.txt
>>>>> od –c list2.txt
>>>>> od –x list2.txt
```

Part IV

Consider the car list where the first and second columns are swapped, with a tab between them.

GM 101 Buick 2010
Ford 102 Lincoln 2005

Type it into a text file called *list3.txt*. Use *lseek()* to write a program called *change2.c*. Similar as in Part III, it works on *list3.txt* to replace the *string 101* with *integer 101*. Check your result as before.