Assignment 5

- **Title:**
  Write X86/64 bit ALP to find a) Number of blank spaces b) Number of lines c) Occurences of a particular character.

- **Problem Statement:**
  Write X86/64 bit ALP to find
  a) No. of blank spaces, lines & charcter occurences in a text file.
  The text file has to be accessed during program-1 execution & write FAR procedures in program 2 for rest of the processing. Use of global & extern directives is mandatory.

- **Objective:**
  To understand how to implement near & far procedures.

- **Outcome:**
  Students will study near & far procedures & their applications.

- **Software & Hardware packages:**
  1) Processor: Core 2 duo / i3 / i5 / i7
  2) OS: Linux 32 bit / 64 bit OS
  3) Editor: gedit
  4) NASM, GDB

* Theory:

1) Open file:

```
mov rax, 2
mor , rdi, fname
mov rsi, 2
mov rdx, 0777
syscall
```

2) Read file:

```
mov rax, 0
mov rdi, [fd_in]
mov rsi, buffer
mov rdx, length
syscall
```

3) Write file

```
mov rax, 01
mov rdi, [fd_in]
mov rsi, buffer
mov rdx, length
syscall
```

4) Close file

```
mov rax, 03
mov rdi, [fd_in]
syscall
```

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- Algorithm:

1) Start
2) Declare global procedure P1 in P2
3) Set pointer to start of buffer
4) Set counter to zero
5) Compare val. at loc. with required ASCII value
6) If equal increment counter
7) Increment pointer
8) Repeat until end of buffer is reached
9) Display counter
10) Return from P1
11) Stop

- Test Cases

Input	Expected o/p	Actual o/p
1) File : a a a ab cde b abcdef ghi jk	Lines: 4 Spaces: 3 Occurences of 'a' : 5	Success

- Conclusion:

Hence we implemented far procedure using global & extern directives.