

系統程式設計

Lab4 Stdio Compare

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1. Where is the counter you add?

(請註明在程式碼的第幾行，最好加上截圖)

fig5_4.c 中於第 5 行宣告 count 第 9 行 count++ 第 15 行印出 count 值

```
1  #include "apue.h"
2
3  int main(void)
4  {
5      int count = 0;
6      int c;
7
8      while( (c = getc(stdin)) != EOF ){
9          count++;
10         if(putc(c,stdout) == EOF)
11             err_sys("output error");
12     }
13     if(ferror(stdin))
14         err_sys("input error");
15     printf("count is %d\n",count);
16     exit(0);
17 }
18
19
```

fig5_5.c 中於第 5 行宣告 count 第 9 行 count++ 第 15 行印出 count 值

```
1  #include "apue.h"
2
3  int main(void)
4  {
5      int count = 0;
6      char buf[MAXLINE];
7
8      while( (fgets(buf,MAXLINE,stdin)) != NULL ){
9          count++;
10         if(fputs(buf,stdout) == EOF)
11             err_sys("output error");
12     }
13     if(ferror(stdin))
14         err_sys("input error");
15     printf("count is %d\n",count);
16     exit(0);
17 }
18
19
```

2. Screen shot for Table1

(提供每個執行後的截圖，並說明每張截圖是屬於哪種 function)

Function	Real Time	User CPU Time	System CPU Time	Loop Iterations
getc , putc	0m4.835s	0m1.850s	0m0.507s	104857600
fgets , fputs	0m0.037s	0m0.022s	0m0.009s	25607

fig5_4.c

```
andy@ubuntu:~/SP/Lab4$ time ./exe_fig5_4 < 100mb_file
count is 104857600

real    0m4.835s
user    0m1.850s
sys     0m0.507s
```

fig5_5.c

```
andy@ubuntu:~/SP/Lab4$ time ./exe_fig5_5 < 100mb_file
count is 25607

real    0m0.037s
user    0m0.022s
sys     0m0.009s
```

3. Screen shot for Table2

(提供每個執行後的截圖，並說明每張截圖是屬於哪種 mode)

Buffer Mode	Real Time	User CPU Time	System CPU Time
Fully buffered	0m0.044s	0m0.022s	0m0.018s
Line buffered	0m0.040s	0m0.013s	0m0.021s
Unbuffered	0m52.572s	0m13.565s	0m38.735s

fig5_5.c(fully_buffered)

```
andy@ubuntu:~/SP/Lab4$ time ./exe_fig5_5_fully_buffered < 100mb_file
count is 25607

real    0m0.044s
user    0m0.022s
sys     0m0.018s
```

fig5_5.c(line_buffered)

```
andy@ubuntu:~/SP/Lab4$ time ./exe_fig5_5_line_buffered < 100mb_file
count is 25607

real    0m0.040s
user    0m0.013s
sys     0m0.021s
```

fig5_5.c(unbuffered)

```
andy@ubuntu:~/SP/Lab4$ time ./exe_fig5_5_unbuffered < 100mb_file
count is 25607

real    0m52.572s
user    0m13.565s
sys     0m38.735s
```