

## Part A

### Question#1

- Create a new directory named “LabSessional1” on Desktop
- Set default file permissions as “all 3 for owner, only readable and writable for group owner and
- none for other world”
- Create new files named “Task1” and “Task2” in the newly created directory
- Write “this is my lab Mid” in Task1
- Write “I am supposed to not cheat” in Task2
- Use pipeline to combine the contents of Task1 and Task2, move in a new created file “Task3”
- and display the word count of Task3
- Create a new directory on desktop named “ExamTask”
- move all 3 files from LabSessional1 to ExamTask

Ans:

```
san@san-VirtualBox:~/Desktop$ mkdir LabSessional1
san@san-VirtualBox:~/Desktop$ chmod 777 LabSessional1
san@san-VirtualBox:~/Desktop$ ls -l LabSessional1
total 0
san@san-VirtualBox:~/Desktop$ touch Task1.txt Task2
san@san-VirtualBox:~/Desktop$
san@san-VirtualBox:~/Desktop$ cd LabSessional1
san@san-VirtualBox:~/Desktop/LabSessional1$ touch Task1.txt Task2.txt
san@san-VirtualBox:~/Desktop/LabSessional1$ cat >> Task1.txt
this is my lab mid
san@san-VirtualBox:~/Desktop/LabSessional1$ cat >> Task2.txt
I am supposed not to cheat
san@san-VirtualBox:~/Desktop/LabSessional1$ cat Task1.txt Task2.txt >> Task3.txt | wc Task3.txt
0 0 0 Task3.txt
san@san-VirtualBox:~/Desktop/LabSessional1$ touch Task3.txt | cat Task1.txt Task2.txt >> Task3.txt
san@san-VirtualBox:~/Desktop/LabSessional1$ wc Task3.txt
 2 11 46 Task3.txt
san@san-VirtualBox:~/Desktop/LabSessional1$ cd ../
san@san-VirtualBox:~/Desktop$ mkdir ExamTask
san@san-VirtualBox:~/Desktop$ cd LabSessional1
san@san-VirtualBox:~/Desktop/LabSessional1$ mv Task1.txt Task2.txt Task3.txt ~/Desktop/ExamTask
san@san-VirtualBox:~/Desktop/LabSessional1$
```

## Question#2

Parent process creates a child process. The child process takes five numbers from the user, adds them and pass the result to parent process. Parent process takes the result and prints the result multiplied by 2. The parent process should wait for the child process to complete

its execution and return the result. Use the required system calls to complete the operation as desired.

Ans:

```
1 #include <iostream>
2 #include <cstdlib>
3 #include <time.h>
4 #include <unistd.h>
5 #include <stdlib.h>
6 #include <sys/ipc.h>
7 #include <sys/wait.h>
8 #include <sys/msg.h>
9 using namespace std;
10
11 int main(){
12
13
14     pid_t parent = fork();
15     int num = 0;
16     int sum = 0;
17
18
19     if(parent > 0){
20         cout << "Parent pid" << getpid() << endl;
21
22         wait(NULL);
23         pid_t child = fork();
24
25
26         if(child == 0){
27
28             for(int i = 0; i < 5; i++){
29                 cout << "Enter the: " << i + 1 << " number" << endl;
30                 cin >> num;
31                 sum = sum + num;
32             }
33             cout << "A pid" << getpid() << endl;
34             cout << "A parent pid" << getppid() << endl;
35
36             //cout << "Child Sum is: " << v1.data << endl;
37         }
38         wait(NULL);
39
40     }
41
42     wait(NULL);
43     cout << "I'm a parent and the total sum is: " << endl;
44     cout << "Sum " << sum * 2 << endl;
45     exit(0);
46
47     return 0;
48 }
49 }
```

```
sam@sam-VirtualBox:~/Desktop$ g++ midterm.cpp -o md
sam@sam-VirtualBox:~/Desktop$ ./md
Parent pid5858
I'm a parent and the total sum is:
Sum 0
Enter the: 1 number
1
Enter the: 2 number
1
Enter the: 3 number
1
Enter the: 4 number
1
Enter the: 5 number
1
A pid5860
A parent pid5858
I'm a parent and the total sum is:
Sum 10
I'm a parent and the total sum is:
Sum 0
sam@sam-VirtualBox:~/Desktop$ gedit midterm.cpp
sam@sam-VirtualBox:~/Desktop$
```