

In my program I have implemented two functions called `send_data` and `word_count`. `send_data` is implemented in the parent process and has three arguments file descriptor, `pipe1`, `pipe2`. `count_word` is implemented in the child process and has the arguments `pipe1`, `pipe2`. The steps involved in the program are.

1. We run the programme giving the command  
`./pwordcount <file_name>` for my case its `./pwordcount input.txt`
2. If the file name is not provided we will be getting errors like  
Please Provide the file name  
Usage : `./pwordcount <file_name>`
3. We will try to open the file and if we provide an incorrect file name we will be getting error like.  
Unable to open file. Please check the file name
4. Next we create two pipes. If the pipe creation failed we will be getting error as  
Pipe failed
5. Next we will create the fork. If the fork creation failed we will get error as  
Fork failed
6. We will call the `send_data` function from parent process and we will call the `count_word` process from the child process.
7. In the parent process the `send_data` will read the file and send the data to the child process.
8. In the child process the `count_word` method will receive the data sent by the parent process and will send back the word count to the parent process.
9. The parent process will receive the count of words and will print the word count received.
10. The output of my program will be as follows

```
szg0148@tux246:~/Networks Assignment-1$ gcc -o pwordcount pwordcount.c
szg0148@tux246:~/Networks Assignment-1$ ./pwordcount

Please Provide the file name
Usage : ./pwordcount <file_name>
szg0148@tux246:~/Networks Assignment-1$
```

```
Usage : ./pwordcount <file_name>
szg0148@tux246:~/Networks Assignment-1$ ./pwordcount ihkuhkh

Unable to open file. Please check the file name
szg0148@tux246:~/Networks Assignment-1$
```

```
szg0148@tux246:~/Networks Assignment-1$ ./pwordcount input.txt

Process 1 is reading file now.....

Process 1 starts sending data to Process 2 ...

Process 2 finishes receiving data from Process 1 ...

Process 2 is counting words now ...

Process 2 is sending the result back to Process 1 ...

Process1: No of Words is 304
szg0148@tux246:~/Networks Assignment-1$
```

The data flow diagram will be as follows

