



# Lab Assignment 2

## (Networking Lab)

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## Problem Statements :

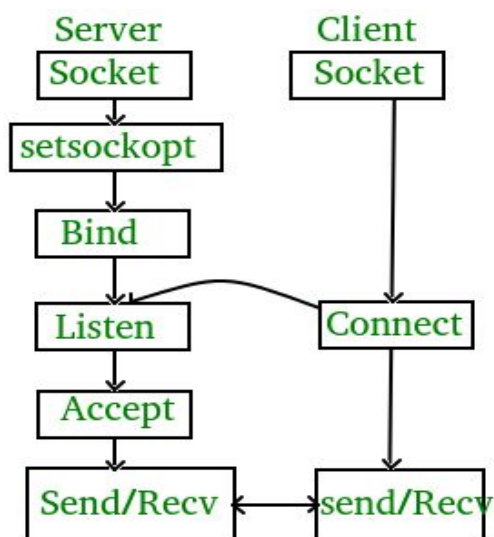
**Q1 - Write a socket program in C++ to connect two nodes on a network to communicate with each other, where one socket listens on a particular port at an IP, while other socket reaches out to the other to form a connection.**

```

aniket@aniket-Inspiron-5567: ~/CSN361/CSN361/Assignment_2
Question_1_server Question_1_server.cpp
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ g++ Question_1_server.cpp -o Question_1_server
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ ./Question_1_server
Server listening :
hi
this
is
client
sending
message
to
the server
client closed connection
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$

aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2
Question_1_client Question_1_server
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ g++ Question_1_client.cpp -o Question_1_client
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ ./Question_1_client
Enter message : hi
message sent
Enter message : this
message sent
Enter message : is
message sent
Enter message : client
message sent
Enter message : sending
message sent
Enter message : message
message sent
Enter message : to
message sent
Enter message : the server
message sent
Enter message : ^C
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$
  
```

Algorithm followed :

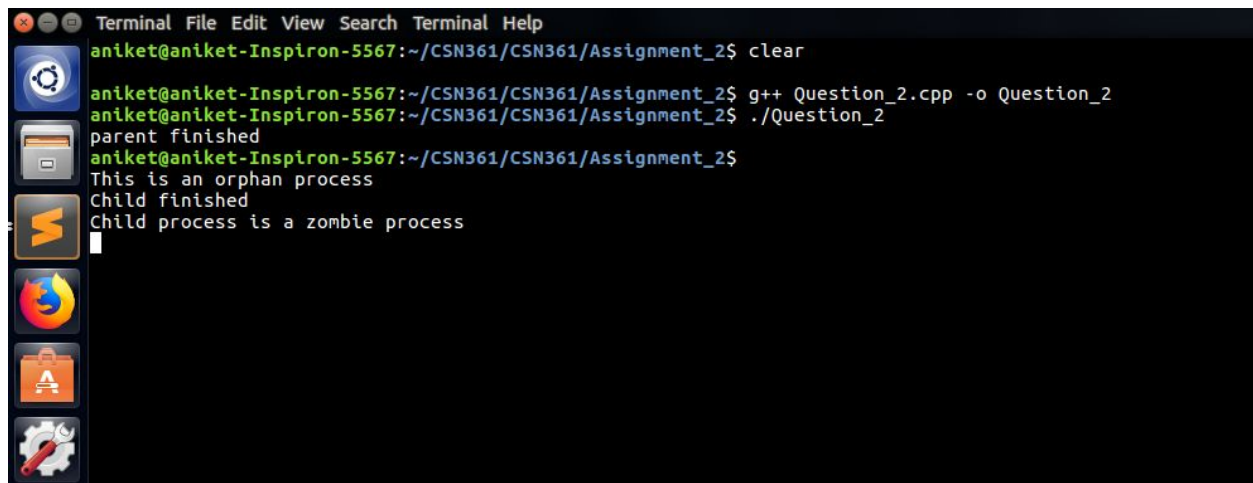


Data structures used included character arrays ,strings and socket structure.

## Q2 - Write a C++ program to demonstrate both Zombie and Orphan process.

A process which has finished the execution but still has entry in the process table to report to its parent process is known as a **zombie process**.

A process whose parent process no more exists i.e. either finished or terminated without waiting for its child process to terminate is called an **orphan process**.




```

Terminal File Edit View Search Terminal Help
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ clear
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ g++ Question_2.cpp -o Question_2
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$ ./Question_2
parent finished
aniket@aniket-Inspiron-5567:~/CSN361/CSN361/Assignment_2$
This is an orphan process
Child finished
Child process is a zombie process
  
```

```

#include <bits/stdc++.h>
#include <sys/types.h>
#include <unistd.h>
using namespace std;
int main()
{
    if(fork()==0)
    {
        sleep(2);
        cout<<"\nThis is an orphan process\n";
        if(fork()==0)
  
```



```
{  
    cout<<"Child finished\n";  
    return 0;  
}  
sleep(2);  
cout<<"Child process is a zombie process\n";  
return 0;  
}  
cout<<"parent finished\n";  
}
```