Lab Assignment- 2

CSN-361: Computer Networks Laboratory

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Problem Statement 1

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.

- **Algorithms and data structures used in the implementation**

  Creating Server Process :

  1. Create socket file descriptor using **socket(domain, type, protocol)**
  2. Forcefully attach socket to the port 8080 using **bind(int sockfd, const struct sockaddr *addr, socklen_t, addrlen)**
  3. Listen to client using **listen(int sockfd, int backlog)**
  4. Accept the request of the client using **accept(int sockfd, struct sockaddr *addr, socklen_t, *addrlen)**
  5. Read the message from client using **read(new_socket , buffer, 1024)**
  6. Send response to client using **send(new_socket , message , strlen(message) , 0)**

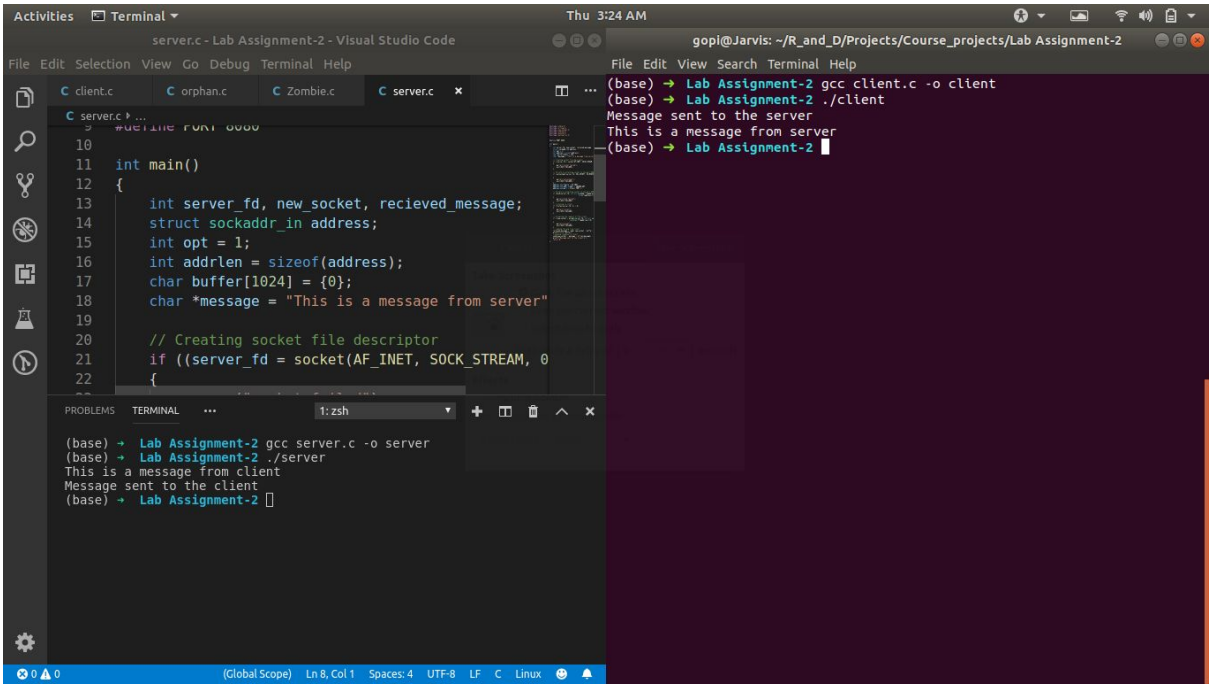
  Creating Client Process :

  1. Create socket file descriptor using **socket(domain, type, protocol)**
  2. Convert IPv4 and IPv6 addresses from text to binary form
  3. Connect to the server using **connect(int sockfd, const struct sockaddr *addr, socklen_t addrlen)**
  4. Send request to server using **send(new_socket , message , strlen(message) , 0)**
  5. Receive response from server using **read(new_socket , buffer, 1024).**

Data structures used :

- **struct sockaddr_in :** It is a structure containing an internet address.
- **buffer :** character array of size 1024 to hold messages.
- **message :** character array of strings.

- **Snapshots of running the codes for each of the problems**

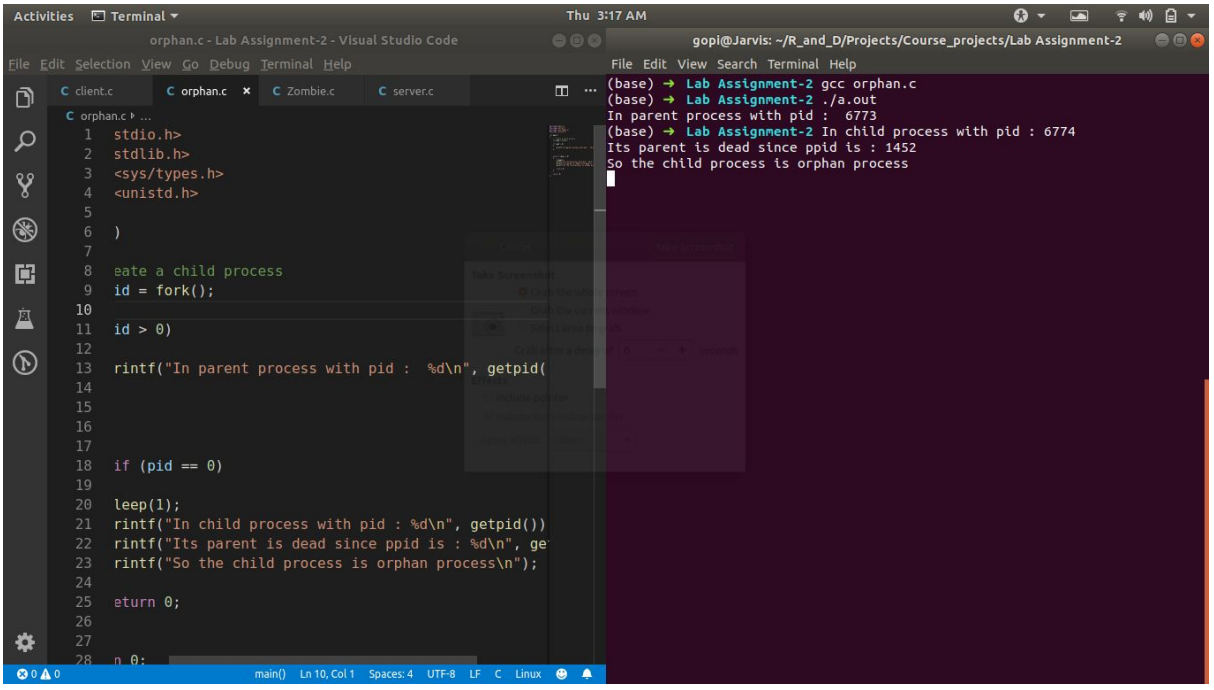


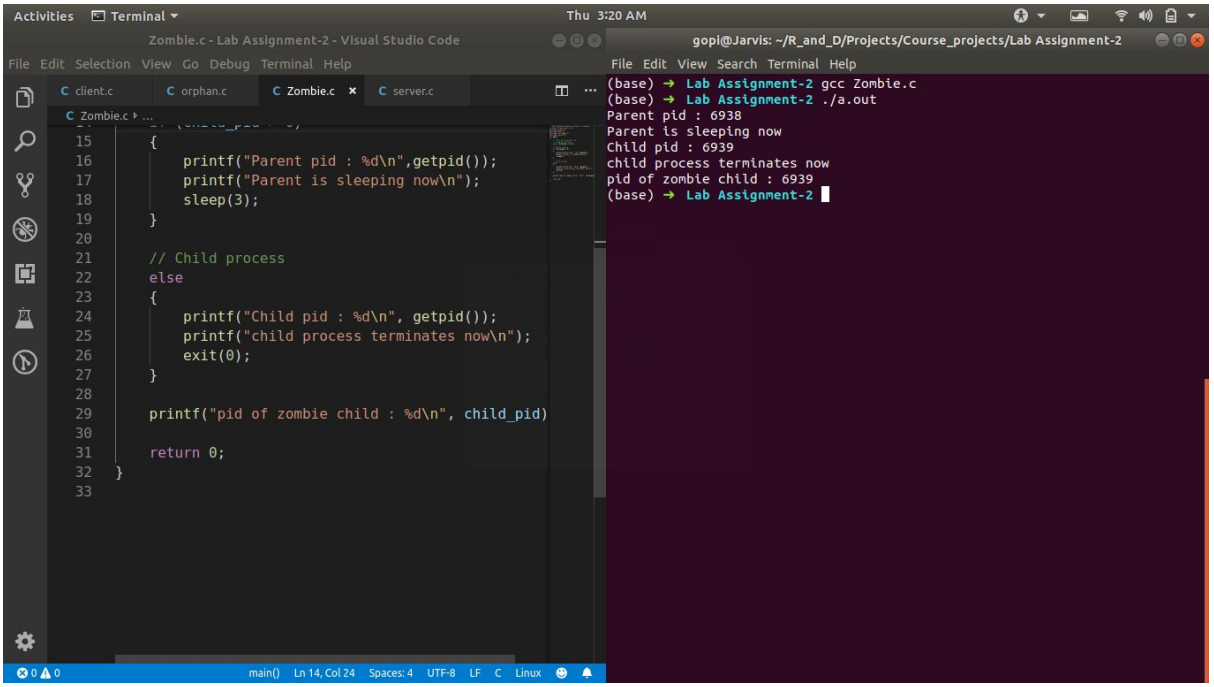
Problem Statement 2

Write a C program to demonstrate both Zombie and Orphan process.

- **Algorithms and data structures used in the implementation**
  No significant data structures used

- **Snapshots of running the codes for each of the problems**




Activities
Terminal
Thu 3:20 AM
Zombie.c - Lab Assignment-2 - Visual Studio Code
File Edit Selection View Go Debug Terminal Help
client.c
orphan.c
Zombie.c
server.c
Zombie.c ...
{
printf("Parent pid : %d\n",getpid());
printf("Parent is sleeping now\n");
sleep(3);
}
// Child process
else
{
printf("Child pid : %d\n", getpid());
printf("child process terminates now\n");
exit(0);
}
printf("pid of zombie child : %d\n", child_pid)
return 0;
}
main() Ln 14, Col 24 Spaces: 4 UTF-8 LF C Linux
gopi@Jarvis: ~/R_and_D/Projects/Course_projects/Lab Assignment-2
File Edit View Search Terminal Help
(base) ➜ Lab Assignment-2 gcc Zombie.c
(base) ➜ Lab Assignment-2 ./a.out
Parent pid : 6938
Parent is sleeping now
Child pid : 6939
child process terminates now
pid of zombie child : 6939
(base) ➜ Lab Assignment-2