VISHAL KAUSHIK

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Interests :

To work on a project involving **Embedded Linux Systems** and **Linux Device Driver**.

Experience :

- **Trainee**
  Emblogic Embedded Technologies **Sept 2021--Present**

  - Embedded C progammer.
  - Currently working on Inter-Process Communication (IPC).

- **Intren**
  OP Jindel University **Feb 2021 – July 2021**

  - Linux/Windows System Administration.
    1. Software maintenance.
    2. OS maintenance and Upgrading.

  - Hardware Maintenance.
    1. Replacing / installation HW part on Desktop/Laptops.
    2. Upgrading HW configuration.

Carrier Oriented Training at EmbLogic Research and Competency Development Labs (Sept'21 -- Purusing)

- Embedded Linux Kernel Internals.
- Linux System and Network Software Development

Technical Skills :

- Programming Languages : **C**
- Good understnading of concepts like **function pointer**, array, Structure, Union.
- Editor : **VIM.**
- Debugging tools: GDB
- Basic understanding of **bash shell** scripting
- **Linux System Programming** : Inter-Process communication (IPC)
  - process management , process duplication , process replacement
  - **Pipe , Fifo , Message Queue , Shared Memory**
  - synchronization using **Semaphore** and **Mutex**
  - multithreading : Threads and **Thread Synchronization**

- Networking and **Network Programming** using **Sockets**, TCP/IP, Ipv4:
  - Socket(), Bind(), Connect(), Listen(), Accept() **.**

Projects :

- **Establish Client Server Communication using IPC techniques and Socket Programming:**

Description:

- This project is use to establish the connection between requesting client, processing client and the server. The server will accept the request from one of the many requesting clients and will send it to the appropriate processing client, then the processing client will perform the operation and will send back the result to the server.
- To establish the connection between server and clients there are some system calls in IPC.
- **FIFOs** : Used to send request (addition, subtraction and multiplication operation) of requesting clients to server.
- **Pipe:** used to forward request from server to the appropriate processing clients to process data of the requesting clients by creating threads.
- **Shared Memory :** used to write processed data to server back from processing clients, synchronization is achieved by using thread semaphores.
- **Message Queues:** used by server to send data to requesting clients.
- Using TCP/IP protocols i.e. **AF_UNIX and AF_INET**.
- The communication is synchronized using **semaphores** and **mutex.**
- **Multi threading** is also implemented to initiate parallel processing.

Skills Used: C, Inter Process Communication, Linux, Shell Scripting, Makefile.

- **Multiple Data Compression and Encryption using iterative techniques**

Description:

- The project aims to remove ASCII code based data redundancy in the provided source file so as to trim the entire file and at the same time encode it with our algorithm in order to encrypt the data.
- Hear, we are concerned with the 8-bit extended ASCII character set, so we will have a maximum of 256 characters, and hence 8 different types of algorithmic procedures. We create following function to solve this problem: Compression, Decompression, Master Array, Find index, unique array etc.
- We write all compressed data simultaneously to another file ,which will act as the source file for the decompressing code.

EDUCATION :

- 10th from HBSE (Karan Singh memorial Sec. Sr. School).
- 12th from HBSE (Karan Singh memorial Sec. Sr. School).
- Graduation from **Maharshi Dayanand University.**

PERSNOL DETAIL:

Name	: Vishal Kaushik
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Mother's name	: Sunita
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DECLARATION:

I declare that all the above mentioned information is correct and true of my knowledge.