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Unix Domain Socket

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**Abstract**

“This report outlines the design and development of a Unix domain socket to read and process information between two processes. The program is written in C++ using a Linux operating system “Ubuntu”. The program only uses the C++ standard libraries. The report includes a full usual manual as well as the code written”

**Problem Statement**

We want two programs to be able to communicate in two shells to simulate two processes P1 and P2. P1 accepts a file path as the parameter, and P2 the target word. P1 opens the text file, read the content, and passes it to P2 Via the Unix Domain Socket. P2 finds the line containing the target word and sends them back to P1 via the Unix Domain Socket. Finally, P1 outputs these lines containing the target word.

**Solution**

There are two programs written in C++ programming language. The two programs stimulate two processes running. The first program takes command line arguments and processes it. It reads one command line argument which is the path to the input file. The program opens the input file read the string strips It of whitespaces before and after each string and passes it to another program via the Unix Domain Socket using the write API at the end of file it sends a string “END” indicating that it is done writing to the other process. The other process with is stimulated with a program called “P2” uses the read API to read the string that was sent to it by “P1” and stores it in a vector. When the program encounters the string “END” it processes the string in the vector. The string are process ignoring the whitespaces and punctuation after the target word and writes to P1 the string that contain the target word and the end of writing the process using the write API write the string “END”. P1 uses the read API to read the strings and when it encounters “END” it prints out the strings to the counter.

**Testing and Validation**

The program was tested to match this test cases with target word “and”

1)she and her brother

The program returns string

2) She understands the concept ; does not return string

3) He said he could withstand the suffering ; return string

**Related Work / Future Milestones**

We can also simulate how processes communicate using another interprocess communication method (IPC) such as pipe or shared memory.