Assignment 7

Sender.c

```
// Process1.c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>
#include <unistd.h>
#include <sys/stat.h>



#define FIFO1 "/tmp/fifo1"
#define FIFO2 "/tmp/fifo2"
#define BUFFER_SIZE 1024

int main() {
    char input[BUFFER_SIZE];
    char output[BUFFER_SIZE];
    int fd1, fd2;

    // Create FIFOs if they don't exist
    mkfifo(FIFO1, 0666);
    mkfifo(FIFO2, 0666);

    printf("Process 1: Enter sentences (type 'exit' to quit):\n");

    while (1) {
        // Get user input
        fgets(input, BUFFER_SIZE, stdin);
        input[strcspn(input, "\n")] = '\0';  // Remove trailing
newline
```

```
        if (strcmp(input, "exit") == 0) {
            break;
        }

        // Write input to FIFO1
        fd1 = open(FIFO1, O_WRONLY);
        write(fd1, input, strlen(input) + 1);
        close(fd1);

        // Read processed output from FIFO2
        fd2 = open(FIFO2, O_RDONLY);
        read(fd2, output, BUFFER_SIZE);
        close(fd2);

        // Display result
        printf("Received from Process 2: %s\n", output);
    }

    // Cleanup
    unlink(FIFO1);
    unlink(FIFO2);

    return 0;
}
```

Receiver.c

```
// Process2.c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
```

```
#include <fcntl.h>
#include <unistd.h>

#define FIFO1 "/tmp/fifo1"
#define FIFO2 "/tmp/fifo2"
#define BUFFER_SIZE 1024
#define OUTPUT_FILE "output.txt"

void analyzeText(const char *text, char *result) {
    int characters = 0, words = 0, lines = 0;
    const char *ptr = text;

    while (*ptr) {
        characters++;
        if (*ptr == ' ' || *ptr == '\n') words++;
        if (*ptr == '\n') lines++;
        ptr++;
    }
    words++;  // Last word
    sprintf(result, "Characters: %d, Words: %d, Lines: %d",
characters, words, lines);
}

int main() {
    char input[BUFFER_SIZE];
    char analysis[BUFFER_SIZE];
    int fd1, fd2;
    FILE *file;

    while (1) {
        // Read input from FIFO1
        fd1 = open(FIFO1, O_RDONLY);
        read(fd1, input, BUFFER_SIZE);
```

```
        close(fd1);
        printf("Received input: %s\n", input);

        // Analyze the text
        analyzeText(input, analysis);

        // Write the analysis to a text file
        file = fopen(OUTPUT_FILE, "w");
        fprintf(file, "%s\n", analysis);
        fclose(file);

        // Read from text file and send the content to FIFO2
        file = fopen(OUTPUT_FILE, "r");
        fread(analysis, sizeof(char), BUFFER_SIZE, file);
        fclose(file);

        fd2 = open(FIFO2, O_WRONLY);
        write(fd2, analysis, strlen(analysis) + 1);
        close(fd2);
    }
    return 0;
}
```

Output :

```
swikar@LAPTOP-3VLQDHIH:~$ gcc sender.c -o sender
swikar@LAPTOP-3VLQDHIH:~$ ./sender
Process 1: Enter sentences (type 'exit' to quit):
Hello welcome to PICT
Received from Process 2: Characters: 21, Words: 4, Lines: 0
```

```
swikar@LAPTOP-3VLQDHIH:~$ gcc receiver.c -o receiver
swikar@LAPTOP-3VLQDHIH:~$ ./receiver
Received input: Hello welcome to PICT
```