

Write a program to establish communication between parent and child process using pipes.

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#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<sys/types.h>
#include<string.h>
#include<sys/wait.h>

int main()
{
    // We use two pipes
    // First pipe to send input string from parent
    // Second pipe to send concatenated string from child

    int fd1[2]; // Used to store two ends of first pipe
    int fd2[2]; // Used to store two ends of second pipe

    char fixed_str[] = "forgeeks.org";
    char input_str[100];
    pid_t p;

    if (pipe(fd1)==-1)
    {
        fprintf(stderr, "Pipe Failed" );
        return 1;
    }
    if (pipe(fd2)==-1)
    {
        fprintf(stderr, "Pipe Failed" );
        return 1;
    }

    scanf("%s", input_str);

    p = fork();

    if (p < 0)
    {
        fprintf(stderr, "fork Failed" );
        return 1;
    }

    // Parent process
    else if (p > 0)
    {
        char concat_str[100];

        close(fd1[0]); // Close reading end of first pipe
```

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// Write input string and close writing end of first
// pipe.
write(fd1[1], input_str, strlen(input_str)+1);
close(fd1[1]);

// Wait for child to send a string
wait(NULL);

close(fd2[1]); // Close writing end of second pipe

// Read string from child, print it and close
// reading end.
read(fd2[0], concat_str, 100);
printf("Concatenated string %s\n", concat_str);
close(fd2[0]);
}

// child process
else
{
    close(fd1[1]); // Close writing end of first pipe

    // Read a string using first pipe
    char concat_str[100];
    read(fd1[0], concat_str, 100);

    // Concatenate a fixed string with it
    int k = strlen(concat_str);
    int i;
    for (i=0; i<strlen(fixed_str); i++)
        concat_str[k++] = fixed_str[i];

    concat_str[k] = '\0'; // string ends with '\0'

    // Close both reading ends
    close(fd1[0]);
    close(fd2[0]);

    // Write concatenated string and close writing end
    write(fd2[1], concat_str, strlen(concat_str)+1);
    close(fd2[1]);

    exit(0);
}
}

```

Input : www.geeks

Output : Concatenated string
www.geeksforgeeks.org