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20i-1884

OS Lab 7

Task1

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


int main()
{
    int fd[2];
    int fd2[2];
    pipe(fd);
    pipe(fd2);
    char msg[100];
    pid_t t=fork();
    if(t>=0){
        if(t==0){
            close(fd[1]);
            int n= read(fd[0],msg, sizeof(msg));
            printf("the value of n is: %d",n);
            write(1,msg,n);
            close(fd2[0]);
            write(fd2[1], "os", 2);
        }
        else{
            close(fd[0]);
            write(fd[1],"hello\n",6);
            wait(NULL);
        }
    }
}
```

```
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ./c
  bash: ./c: No such file or directory
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ gcc -o c task1.c
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ./c
  hello
  the value of n is: 6lab@Dell-OptiPlex-3070:~/Desktop/labtask$
```

Ln 18, Col 18   Spaces: 4   UTF-8   LF   C   Linux

Task2

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


int main()
{
  mkfifo("pipename",0777);
  return 0;
}
```

```
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ls pipename
  ls: cannot access 'pipename': No such file or directory
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ gcc -o c task2.c
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ./c
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ls pipename
  pipename
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ -l
  -l: command not found
lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ls -l
  total 52
  -rwxrwxr-x 1 lab lab  8304 اکتو   6 09:38 c
  prwxrwxr-x 1 lab lab     0 اکتو   6 09:38 pipename
  -rw-rw-r-- 1 lab lab   584 اکتو   6 09:28 task1.c
  -rw-rw-r-- 1 lab lab 32241 اکتو   6 09:29 task1.png
  -rw-rw-r-- 1 lab lab   174 اکتو   6 09:38 task2.c
lab@Dell-OptiPlex-3070:~/Desktop/labtask$
```

Task3

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


int main()
{
  mkfifo("pipename",0777);
```

```c
  int res = open("pipename", O_WRONLY);
  write(res, "string", 6);
  return 0;
}
```

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

int main()
{
char buf[20];
  int res = open("pipename", O_RDONLY);
  read(res, buf, sizeof(buf));
  printf("%s\n", buf);
  return 0;

}
```

```
  [1] 13272
  0w900U
  [1]+  Done                    ./c
  lab@Dell-OptiPlex-3070:~/Desktop/labtask$ gcc -o c task2.c
  lab@Dell-OptiPlex-3070:~/Desktop/labtask$ gcc -o c1 task3.c
  lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ./c & ./c1
  [1] 13367
  string
  [1]+  Done                    ./c
  lab@Dell-OptiPlex-3070:~/Desktop/labtask$ []
```

Lab Task 7

read.cpp

```cpp
# include <unistd.h>
# include <string.h>
# include <fcntl.h>
# include <iostream>
using namespace std;
```

```cpp
int main () {

   char str [256];
   int fifo_rw2;

      while (strcmp (str, "abort") != 0) {

          fifo_rw2 = open("pipe_one", O_RDONLY);
          read(fifo_rw2, str, sizeof(str));
          cout << "Process 1: Output Text: " << str << endl;
          close (fifo_rw2);
          fifo_rw2 = open("pipe_one", O_WRONLY);
          cout << "Process 2: Input text: ";
          cin >> str;
          write(fifo_rw2, str, sizeof(str));
          close (fifo_rw2);
      }
      close (fifo_rw2);

   return 0;
}
```

write.cpp

```cpp
# include <unistd.h>
# include <string.h>
# include <fcntl.h>
# include <iostream>

using namespace std;

int main () {

   char str [256] ;
   int fifo_rw1;

      while (strcmp (str, "abort") != 0) {
          fifo_rw1 = open ("pipe_one", O_WRONLY);
          cout << "Process 1: Input text: ";
```

```cpp
        cin >> str;
        write(fifo_rw1, str, sizeof(str));
        close (fifo_rw1);
        fifo_rw1 = open ("pipe_one", O_RDONLY);
        read (fifo_rw1, str, sizeof(str));
        cout << "Process 2: Output Text: " << str << endl;
        close (fifo_rw1);
    }
    close (fifo_rw1);


    return 0;
}
```

```
Process 2: input text: c
● lab@Dell-OptiPlex-3070:~/Desktop/labtask$ g++ read.cpp
● lab@Dell-OptiPlex-3070:~/Desktop/labtask$ g++ write.cpp
○ lab@Dell-OptiPlex-3070:~/Desktop/labtask$ ./a.out
  Process 1: Input text: Ahmed
  Process 2: Output Text: Ahmed
  Process 1: Input text: Baig
  Process 2: Output Text: Baig
  Process 1: Input text: Lab
  Process 2: Output Text: Lab
  Process 1: Input text: []
```