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REG NO:- 23MCA10109

DATE:- 18.09.2023

QUESTION:-

Design a program using ordinary pipes in which one process sends a string message to a second process, and the second process reverses the case of each character in the message and sends it back to the first process. For example, if the first process sends the message Hi There, the second process will return hi there. This will require using two pipes, one for sending the original message from the first to the second process and the other for sending the modified message from the second to the first process.

CODE:-

```
import os

pipe1_read, pipe1_write = os.pipe()
pipe2_read, pipe2_write = os.pipe()

pid = os.fork()

if pid == 0:

    os.close(pipe1_write)
    os.close(pipe2_read)

    message = os.read(pipe1_read, 1578)

    modified_message = ".join([c.lower() if c.isupper() else c.upper() for c in message])

    os.write(pipe2_write, modified_message.encode())

    os.close(pipe1_read)
    os.close(pipe2_write)
else:

    os.close(pipe1_read)
    os.close(pipe2_write)

    message_to_send = "Hi There"
    os.write(pipe1_write, message_to_send.encode())

    modified_message = os.read(pipe2_read, 1578)

    os.close(pipe1_write)
    os.close(pipe2_read)

    print("Original message:", message_to_send)
    print("Modified message:", modified_message.decode())
```

OUTPUT:-

Original message: Hi There

Modified message: hI tHERE

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QUESTION:-

Design a file-copying program named filecopy.c using ordinary pipes. This program will be passed two parameters: the name of the file to be copied and the name of the destination file. The program will then create an ordinary pipe and write the contents of the file to be copied to the pipe. The child process will read this file from the pipe and write it to the destination file. For example, if we invoke the program as follows:

```
./filecopy input.txt copy.txt
```

the file input.txt will be written to the pipe. The child process will read the contents of this file and write it to the destination file copy.txt

CODE:-

```
import os
import sys

def file_copy(source_file, dest_file):
    try:
        pipe_read, pipe_write = os.pipe()

        pid = os.fork()

        if pid == 0:
            os.close(pipe_write)

            with open(dest_file, 'wb') as dest:

                while True:
                    data = os.read(pipe_read, 1024)
                    if not data:
                        break
                    dest.write(data)

            os.close(pipe_read)

            print(f'File '{source_file}' copied to '{dest_file}' successfully.")
        else:
            os.close(pipe_read)

            with open(source_file, 'rb') as src:

                while True:
                    data = src.read(1055)
                    if not data:
                        break
                    os.write(pipe_write, data)

            os.close(pipe_write)

    os.wait()
```

```
except Exception as e:
    print(f"An error occurred: {str(e)}")

if __name__ == "__main__":
    if len(sys.argv) != 3:
        print("Usage: python filecopy.py source_file dest_file")
        sys.exit(1)

    source_file = sys.argv[1]
    dest_file = sys.argv[2]

    file_copy(source_file, dest_file)
```