

Assignment # 3 (IPC-Message Passing)

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Total Points: 100

Submission Deadline: April. 13, 2025 [11:59 PM]

Assignment Overview

In this assignment, you will develop a client program that communicates with a server using message-passing. The server's source code is provided—you must thoroughly read and understand it before writing your client. The server is responsible for creating and initializing a message queue identifier, which multiple client programs (running in different VS Code terminals) will use to interact with the server.

Client Program Requirements

Your client program should:

1. Obtain the message queue identifier.
2. Send a request to the server.
3. Receive a text-based puzzle from the server.
4. Display the puzzle to the user.
5. Allow the user to enter a numeric answer, which is then sent back to the server.
6. Receive a response:
 - If the answer is correct, the server will return a joke or a news headline.
 - If incorrect, the server will send an unfriendly message.
7. Display the server's response to the user, regardless of its content.

Testing and Cleanup

You should test your client program by interacting with the running server. You may modify the SERVICEKEY (default is 2025) for testing purposes. Always compile and start the server before running your client program.

During development, if your client crashes or you terminate the server unexpectedly, a cleanup program is provided to help you remove the message queue identifier. Be sure to run this cleanup tool when needed.

Submission Instructions

Submit the source code of your client program in C or C++, including appropriate comments. Your code will be evaluated on a Linux environment, so ensure it compiles and runs correctly on such a system.

Best of luck, Sami Alshalwi.

