

Chat Server with XML

Problem Description

You are required to implement a simple chat server that listens for incoming connections from clients, receives messages with XML serialization, and logs the details of each message. The server should handle multiple clients using non-blocking sockets and the select module. Your task is to write the necessary code to implement this functionality. Consult the skeleton for information details.

Input

The server will not take any input from the standard input. It will receive messages from clients over a socket connection.

Requirements

Implement the Message class with the following methods:

- `__init__(self, username, text, timestamp)`: Initializes the message with the given username, text, and timestamp.
- `serialize(self)`: Serializes the message into a JSON-encoded byte string.
- `deserialize(serialized_message)`: A static method that deserializes the given JSON-encoded byte string back into a Message object.

Implement the main function that:

- Sets up a server socket listening on localhost port 12345.
- Uses the select module to handle multiple client connections.
- Accepts incoming client connections and receives messages.
- Deserializes each received message and logs its details (username, text, timestamp).

Output (with unit test)

```
test attribute passed: Received message: found in log messages
test attribute passed: Username: Alice found in log messages
test attribute passed: Text: Hello, World! found in log
messages
```