

Chat Client with Pickle

Background

In this problem, you will implement a simple chat client that can serialize and send messages to a server. The client will prompt the user for their username and message text, serialize this information into a Message object, and send it to a server over a socket connection.

Problem Description

Your task is to implement the following:

- A Message class to represent messages.
- A main function to interact with the user, create a Message object, and send it to a server.

Message Class

Implement the Message class with the following specifications:

Attributes:

 username (string): The username of the client sending the message.

 text (string): The content of the message.

 timestamp (datetime): The timestamp of when the message was created, initialized to the current time in the constructor.

Methods:

 __init__(self, username, text): Constructor to initialize the attributes.

 serialize(self): Method to serialize the Message object using pickle.

Chat Client

Implement the main function to interact with the user and send messages to the server:

- Prompt the user to input their username and message text.
- Create a Message object with the provided input.
- Serialize the Message object using the serialize method.
- Establish a TCP/IP connection to a server running on localhost at port 12345.
- Send the serialized message to the server.

Output (without unit test, value from Username: and Text: are input from users)

Username: andi

Text: hello

Message sent to the server.

Output (with unit test)

Message sent to the server.

```
test attribute passed: Hello, World! is equal to Hello, World!  
test attribute passed: Alice is equal to Alice  
test attribute passed: Alice is equal to Alice  
test attribute passed: Hello, World! is equal to Hello, World!
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