Caesar Cipher Server
ISTE-121 – Homework 06

OBJECTIVE

For this assignment, you will create a **server** that will either encrypt or decrypt text using the Caesar cipher (described below). To simplify the assignment, the client that will be used can be downloaded from the MyCourses conference for this course.

DETAILS

The Caesar cipher was supposedly developed by Julius Caesar as a way to secure his communications from his enemies. It is actually fairly simple. You simply shift each letter in the original text by a fixed amount and use the new letter in the encrypted message. For example, if you shift by three letters, your code would be:

```
Original:    abcdefghijklmnopqrstuvwxyz
Encrypted:   defghijklmnopqrstuvwxyzabc
```

So the text "caesar cipher server" would become "fdhvdu flskhu vhuyhu". To simplify the assignment, any non-alphabetic characters (a-z or A-Z) will not be encrypted. Upper and lower case text is treated the same you decide for upper or lower case.

Your server must be multithreaded. It should handle errors gracefully by returning an error message if incorrect data is sent over. An error message received by the client turns on the ERROR indicator on the client.

Your server will listen on port 16789, which will be placed in an interface you write, and implement. Find where you need to change this in the client code.

The server will accept an initial command of "ENCRYPT" or "DECRYPT" to tell it what to do with the incoming text. If the command sent over does not match either of these two commands, an error message is sent back and the client will not send over any text. If the command sent is correct, the server will respond with the word "OK". The client is expecting this response and will not send text if anything other than OK is received.

Assuming the initial command was correct; the server will then accept lines (a string) of incoming text and will process them. The encrypted or decrypted text will be returned to the client.

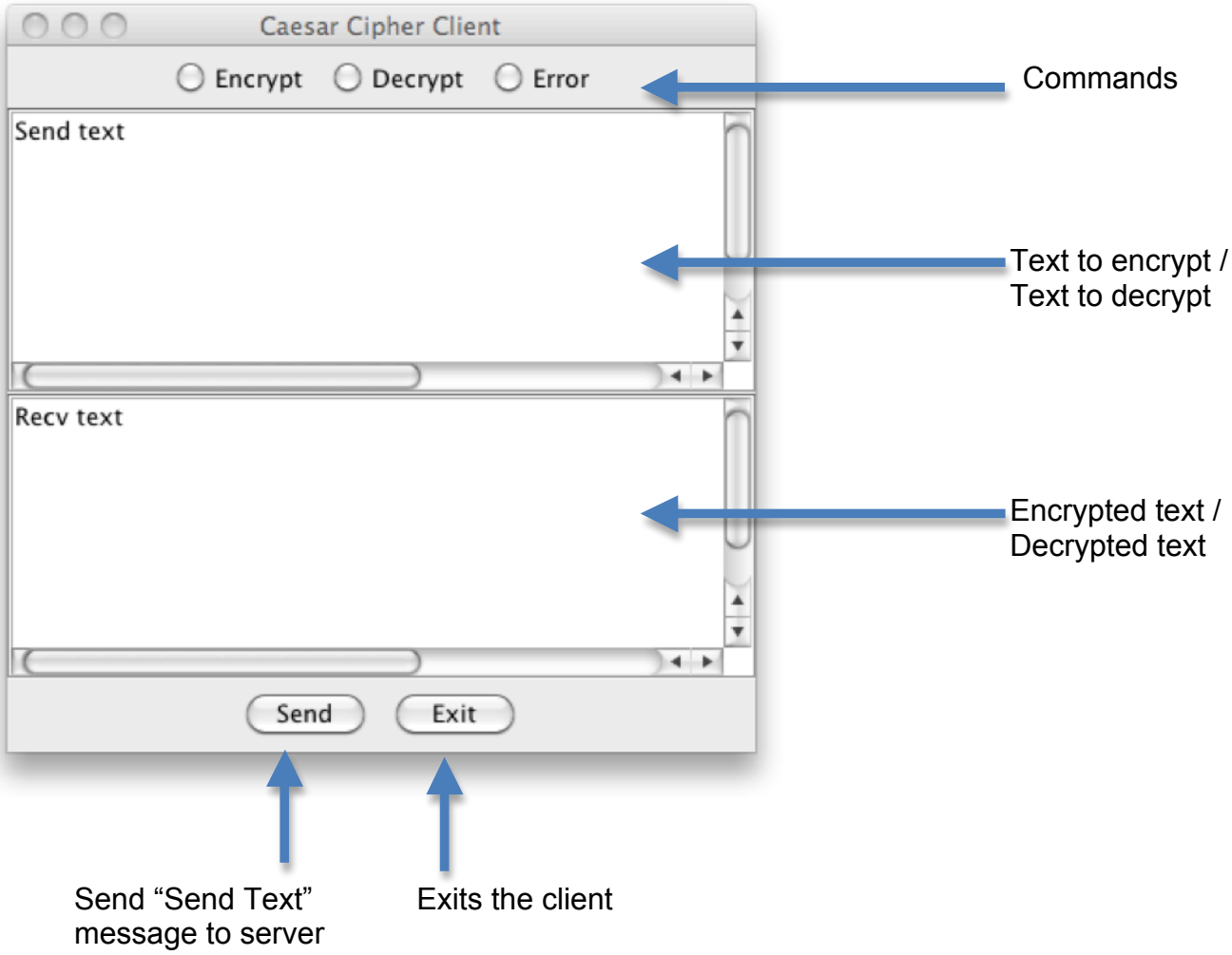
Note that when you start the server, you must specify the number of characters shifted as a positive integer command line argument. This value shift can range between 1 and 25. Should no command line shift be specified, a default constant shift of '3' should be used, and a constant in the interface. The entered shift value will be used as long as the server is running.

HELPFUL HINTS

- Read the client code to understand what your server is expecting for messages, the order, and how many messages to successfully get an encryption.
- Cut and paste the text to be sent over into the text area. For decryption, copy the received text from an encryption run into the sending text area.
- Treat all characters as the same case. This reduces the need to worry about handling upper case 'B' separately from lower case 'b'. Having your server convert all text to the same case prior to encryption or decryption is acceptable.

Screen shots of expected output on the client

The client provided will look like the image shown below:



121 Homework 6 – Caesar Cipher Server – Gradesheet

Name: _____ Section: _____

Criteria	Max Pts	Pts Earned
Interface	5	
CaesarServer.java		
Accepts shift value on command line. Validates: range 1 to 25, it is a number vs. not, missing value	10	
Server is multithreaded	15	
Server accepts initial command and responds correctly	10	
Server accepts and correctly processes more messages of text after initial command and response	15	
Server operates correctly with client program provided	10	
Encryption performed correctly	10	
Decryption performed correctly	10	
Program meets stated requirements	15	
Points earned:	**100**	
Deduction violations after above grading		
-Xlint messages. Need a clean compile -2		
Deduction for program not following naming conventions		
Deduction for proper coding style not being used: indentation, use of white space for readability		
Deduction for missing JavaDoc documentation, File&methods -5		
Server contains inadequate in-code documentation -3		
Total Grade:	**100**	

Additional Comments: