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## SE375 SYSTEM PROGRAMMING SPRING 2023-2024

### Laboratory Assignment 11

May 22-23, 2024

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#### Client-Server Communication Assignment

Your task is to modify your Java application from **Lab 10**.

The main objective is the same; however, we will be adding message digest to check the integrity of messages, and the desired output will change slightly to show the result of integrity checks.

On the server side, the message digest of the URL will be calculated and sent immediately afterwards. When the client receives the URL and its message digest, it will also calculate the message digest of the URL and compare it to the one sent by server.

If both digests are the same, then the client will print “URL digest checks” and continue the operations.

If digests are not the same, then the client will print “URL digest check failed. Closing the connection...”, close the connection and end the process. (*Between steps 3 and 4*)

Similar operations will be done on the client side as well. After reading the URL and taking user preferences, the client sends the data length, the preferences and the message digest of all four strings (concatenate the strings and then calculate the message digest) to the server. The server calculates the digest of the messages, compares it to the received digest, and prints if it checks or not. If digests are not the same, it will close the connection and end the process. (*Between steps 5 and 6*)

**Do not encrypt the message digest. Send it as it is.**

```
1 Waiting for connection...
2 Connection established with: /127.0.0.1
3 Sending URL: https://homes.izmirkonomi.edu.tr/eokur/sample0.txt
5 Data length received: 20

5 User choices received: U, 1, R

6 Received char: S
6 Received char: y
6 Received char: s
6 Received char: t
6 Received char: e
6 Received char: m
6 Received char: P
6 Received char: r
6 Received char: o
6 Received char: g
6 Received char: r
6 Received char: a
6 Received char: m
6 Received char: m
6 Received char: i
6 Received char: n
6 Received char: g
6 Received char: L
6 Received char: a
6 Received char: b

Process finished with exit code 0
```

SERVER-SIDE

```
2 Attempting connection to the server...
3 Received https://homes.izmirkonomi.edu.tr/eokur/sample0.txt
4 Data: SystemProgrammingLab
4 Please state your choice.. UPPER case or lower case (U or L): U
4 Please state your choice.. How many characters to shift (number between 1-3): 1
4 Please state your choice.. Color of characters (R or Y): R
5 Sending data length to server: 20
5 Sending user choices to server: U, 1, R
7 Original
7 SystemProgrammingLab
7 After Case Change
7 SYSTEMPROGRAMMINGLAB
7 After Shift
7 TztufnQspshbnnjohMbc
7 After Color
7 SystemProgrammingLab

Process finished with exit code 0
```

CLIENT-SIDE