



First semester 2021/2022
Advanced software development
Homework Assignment # 2

Singleton design pattern allows us to create one object from the class; however a customer needs to take advantage of this design pattern for class that is used to create a connection via ssh, telnet, http, scp and ftp protocols. The class should create one object for each protocol. In addition, the app can create 3 concurrent connections at most.

The class contains 4 main methods:

1. `getInstance(String connectionProtocol)`: create a new object if there is no object created for this given type, else return the current object for the given protocol.
2. `release(connectionProtocol)`: will try to destroy the connection for the given protocol.
 - POUNS: release takes no param and will destroy the current object that calls it.
3. `getCurrentConnections`: return list of all current created connections.
4. `send(String message)`: Will print a message as shown below.

Questions:

- A. Draw the class diagram for your solution
- B. Write an application for this requirement
- C. Write a description explaining your solution and how your code satisfies the requirements.

ETA: 24 Sep midnight.

NOTE:

- Please submit your report in pdf format.
- Please create your own repo in github and add your code to it, finally add me as collaborator (mustafakassaf@gmail.com) and share your repo link with your report.
- You are free to use any programming language you want.

For example:

```
// will create a new object and return a TELNET connection
Connection telnetConnection = Connection.getInstance(Connection.TELNET);
// will return the current TELNET connection
Connection telnetConnection2 = Connection.getInstance(Connection.TELNET);
// will create a new object
Connection sshConnection = Connection.getInstance(Connection.SSH);

// will create a new object
Connection httpConnection = Connection.getInstance(Connection.HTTP);

// will throw an expectation telling the user he can't create more than 3 connections!
Connection scpConnection = Connection.getInstance(Connection.SCP);

// will return the current SSH connection
Connection sshConnection2 = Connection.getInstance(Connection.HTTP);

// will delete the current TELNET connection and return true,
//and it will return false if there is no TELNET connection at all.
boolean isReleased = Connection.release(Connection.TELNET);

// will create a new FTP connection and return it.
Connection ftpConnection = Connection.getInstance(Connection.FTP);

// return a list of current connections as Connection objects
ArrayList<String> currentConnections = Connection.getCurrentConnections();

//Will print a message says: Sending [My message] vi FTP protocol.
ftpConnection.send("My message");
//Will print a message says: Sending [My message] vi SSH protocol.
sshConnection.send("My message");
```