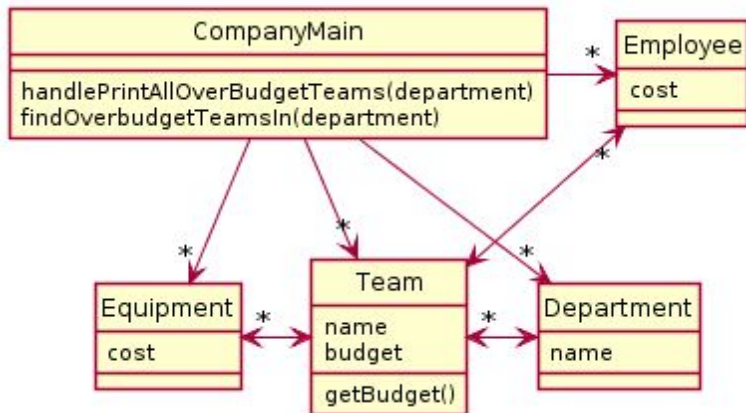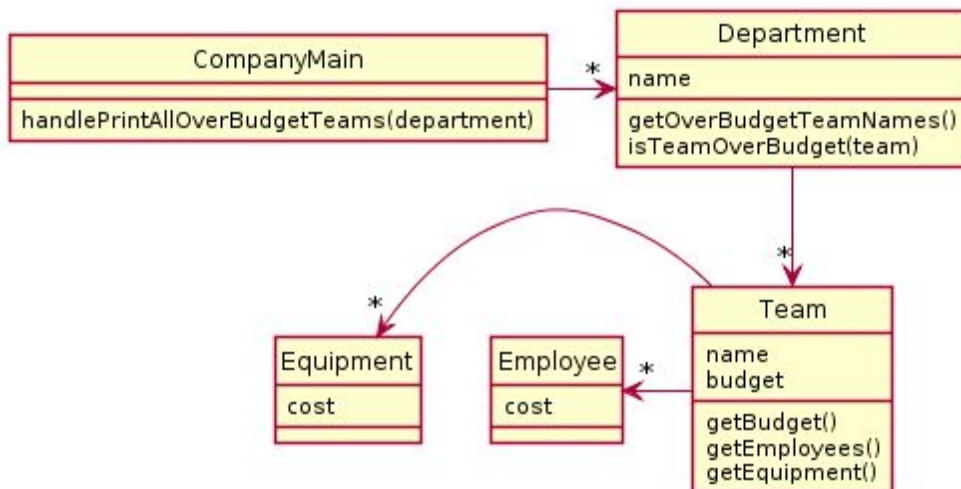**Design Problems, Part 3   Name: _____ CM: _____**

Team Budget: At a particular company, departments are composed of named teams and each team has a yearly budget. Teams have both employees and equipment, each of which have a yearly cost. A team is over budget if the total yearly cost of all employees and equipment is greater than the team's budget. It should be possible to get a list of all teams within a department that are over budget.

Solution A

Solution B

Explain the problems with each one (and give the number of the OO Principles violated)
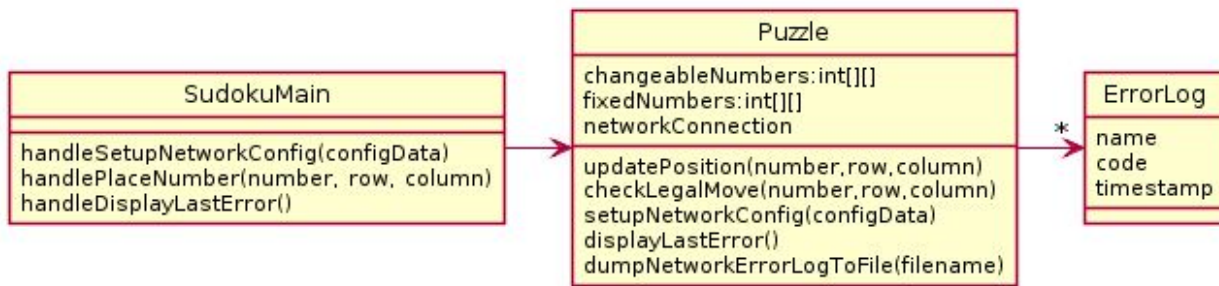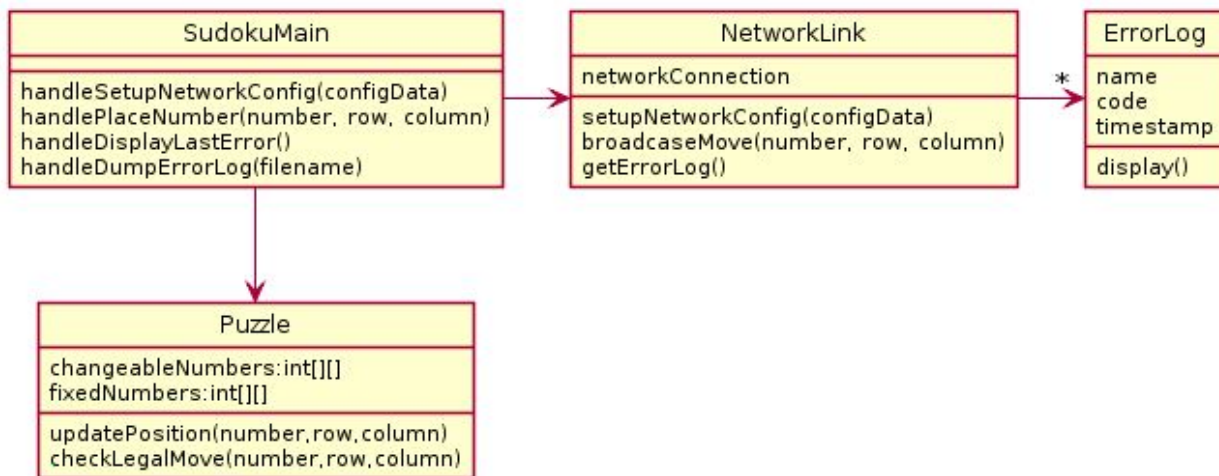
Problems With A

Problems With B

*Write your UML solution that fixes all the problems on the **back of page 2.***

Internet Sudoku: A particular program allows people to solve hard sudoku puzzles while spectators watch over the internet. When a user enters a new number, the program must both update the board and ensure it was a legal move. Then the program must broadcast the move to via an internet channel. The internet connection must first be setup with a network configuration. If there are network connectivity problems, they are placed in a error log that is stored in a file and can be displayed with a command. An error log message includes a message, an error severity, and a timestamp. The error display command displays the message and timestamp of the most recently recorded error. The error dump command dumps the complete error log to a datafile with the given name.

Solution A

Puzzle
changeableNumbers:int[][]   fixedNumbers:int[][]   networkConnection
updatePosition(number,row,column)   checkLegalMove(number,row,column)   setupNetworkConfig(configData)   displayLastError()   dumpNetworkErrorLogToFile(filename)

SudokuMain
handleSetupNetworkConfig(configData)   handlePlaceNumber(number, row, column)   handleDisplayLastError()

ErrorLog
name   code   timestamp

Solution B

SudokuMain
handleSetupNetworkConfig(configData)   handlePlaceNumber(number, row, column)   handleDisplayLastError()   handleDumpErrorLog(filename)

NetworkLink
networkConnection
setupNetworkConfig(configData)   broadcaseMove(number, row, column)   getErrorLog()

ErrorLog
name   code   timestamp
display()

Puzzle
changeableNumbers:int[][]   fixedNumbers:int[][]
updatePosition(number,row,column)   checkLegalMove(number,row,column)

Hint: the code in handleDisplayLastError() looks like this: `networkLink.getErrorLog().get(0).display();`

Explain the problems with each one (and give the number of the OO Principles violated)
Problems With A

Problems With B

*Write your UML solution that fixes all the problems on the **back of page 1.***