Assignment 2

Background

- You are a designer/programmer working on the DataConverter sub-system of the ScanView workstation.
- ScanView is a workstation used by medical professionals to view images from a large variety of medical scanning devices throughout a hospital (and even potentially across hospital sites).
- The various scanner systems store and archive the image data in proprietary formats and using their own storage systems (often optical).
- ScanView is used to grab the scans from these devices across a network, convert them into a standardized format, cache them in a local database, and allow medical professionals to view the images and manipulate the views quickly (e.g., zoom, rotate, transpose, …)
Systems Architecture

Scanner
Scanner (brand X)
Scanner (brand Y)
Scanner (remote)

tcp/ip network

ScanView
ScanView

archival storage

cache storage

ScanView Thread & Module Architecture

UI
NetworkManager
DataConverter
Scanstore

tcp/ip network
images (serialized)

JDBC

RDBMS
What You Have To Do

- Design the interface that NetworkManager uses to invoke DataConverter
  - NetworkManager is by no means fully designed at this point either.
  - Issue: multiple network manager threads have the potential to invoke DataConverter.
  - May be one class, may be multiple classes, however you choose.
  - Must be super flexible wrt number of fields, datatypes, …
- Implement DataConverter
  - must use dynamic loading of classes that know how to convert images from all sorts of vendor scanner models.
- Provide a test scaffold implementation for Scanstore that just writes everything it gets to a text file.

How To Do It

- Start with an OOA of the concepts relevant to DataConverter (UML + text)
  - will be quite small
  - will guide you in suitable choice of classes
- Design DataConverter (UML + diagrams + text)
- Implement DataConverter and required test scaffolding in Java. (no javadoc requirement this time around)
- Test (hand in a document describing how you tested and the results)