

Reflective Software Engineering

Module 06:

PSAE Design Hints

(1)



Objectives

Provide some elementary suggestions on

- object oriented design
- architectural considerations

(2)



Issues

Project 1 uncovered problems with people's understanding of:

- Basic OO design
- Access control (public vs. private)
- Testing
- Architecture

These issues fall outside the scope of lectures in this class. However, here are a few simple hints.

(3)



Basic OO design

Do a web search on "java object oriented design" for many online resources.

Some hints:

- Look at the nouns in the specification for potential objects and/or attributes.
- "Good" objects normally have more than one instance.
- Objects should provide abstraction---they should "hide" something.
- Design objects as providers of services to clients--- think about how the interface looks to a client of the class.
- Keep size of methods down.

(4)



Access Control

The "public", "private", and "protected" keywords are a very powerful mechanism for design.

The public interface of a class is what clients (users) of the class "see". Hide as much of the implementation as possible inside of private methods.

Break the system into multiple packages (I.e. psae.database, psae.fileIO, psae.gui, etc.) for further abstraction.

(5)



Testing

It is my intent to provide a command line interface option to virtually all of the functionality in this program.

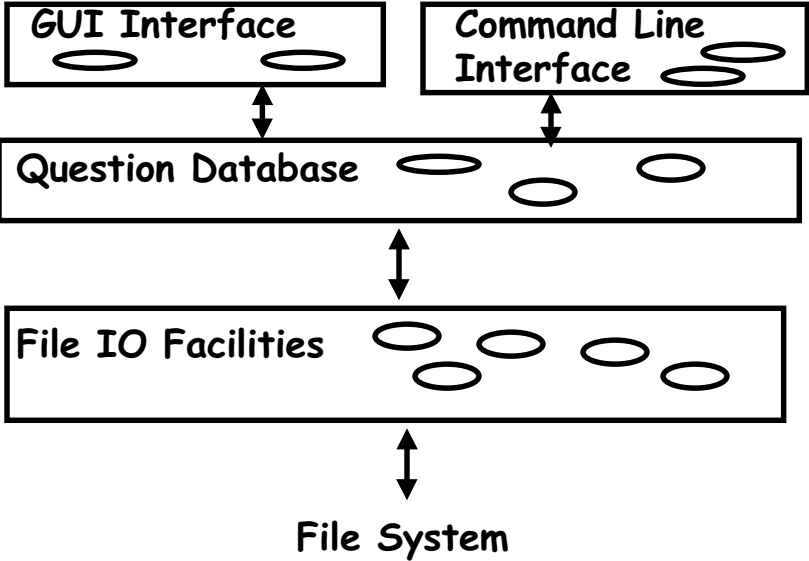
You will also be required to implement a GUI interface that **duplicates** some of this functionality.

The goal of the command line interface interface is to make it easy to automatically test all of the **functional** aspects, leaving only a minimal amount of GUI testing.

(6)



Architecture



(7)

