Detailed Design
Data Flow Diagrams

Javanet

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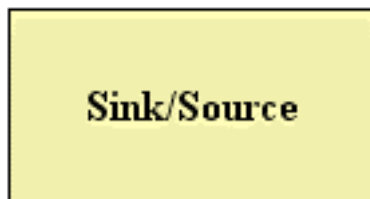# Javanet
Data Flow Diagrams

1.3   Data Flow Diagrams

A Data Flow Diagram (DFD) is a diagram used by Software Engineers to show a graphical representation of the flow of data within a system. Data Flow Diagrams usually contain representations of users, data, processes, and data stores within a system. Data Flow Diagrams serve as a method for the Software Engineer to present information about data flow within a system that is meaningful for not only his/herself, the Software Engineer, but also someone who has not been trained in software engineering practices.
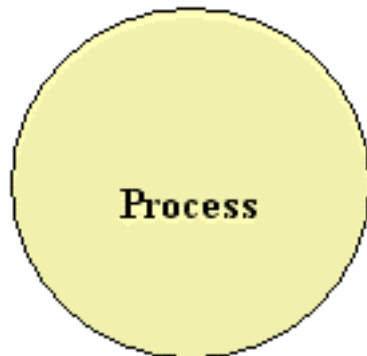
The Data Flow Diagrams presented in this document were developed by the Phoenix Tech team for the Javanet application. The Data Flow Diagrams for the Javanet application will follow the Yourdon style.

1.3.1 Data Flow Diagram Key

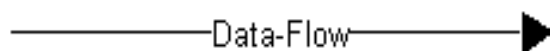There are four major symbols used in the Data Flow Diagrams, as outlined below:

Closed rectangles represent a source or sink. A source or sink is an outside user accessing the system.

Circles represent the processes, or actions, that take place within the system.
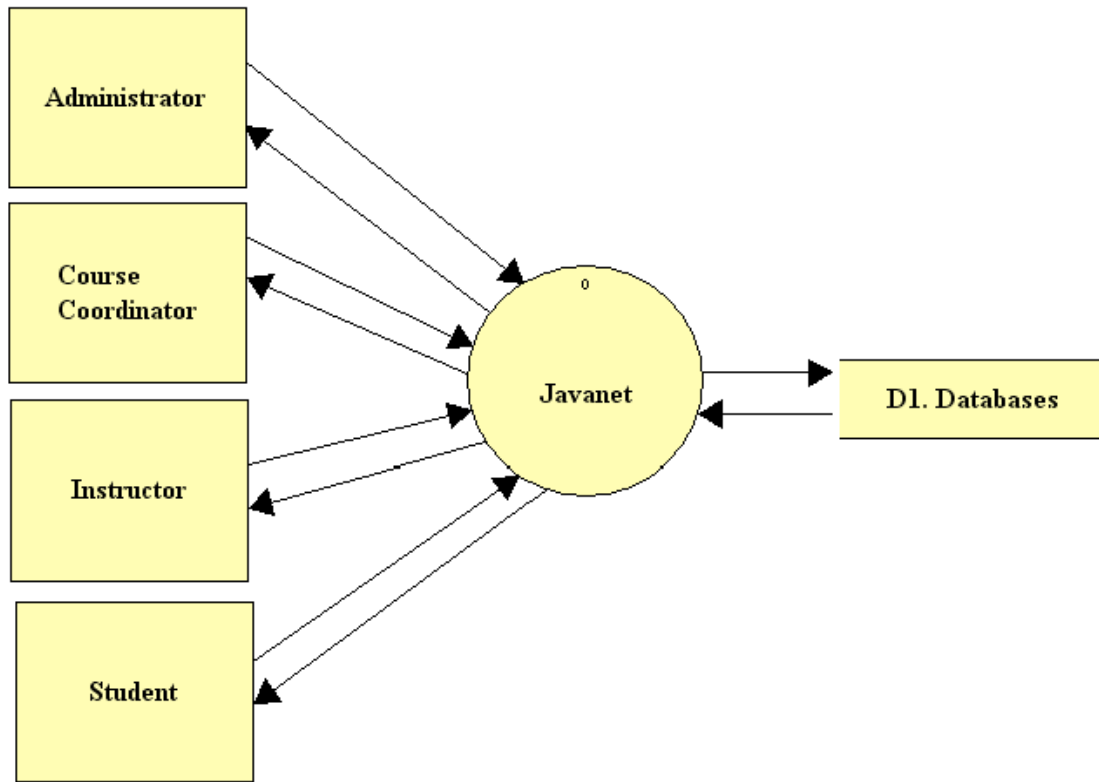
Open-sided rectangles represent data stores. A data store is a structure used to store information. In the case of Javanet, data stores are two databases; one storing user information and one storing question information.
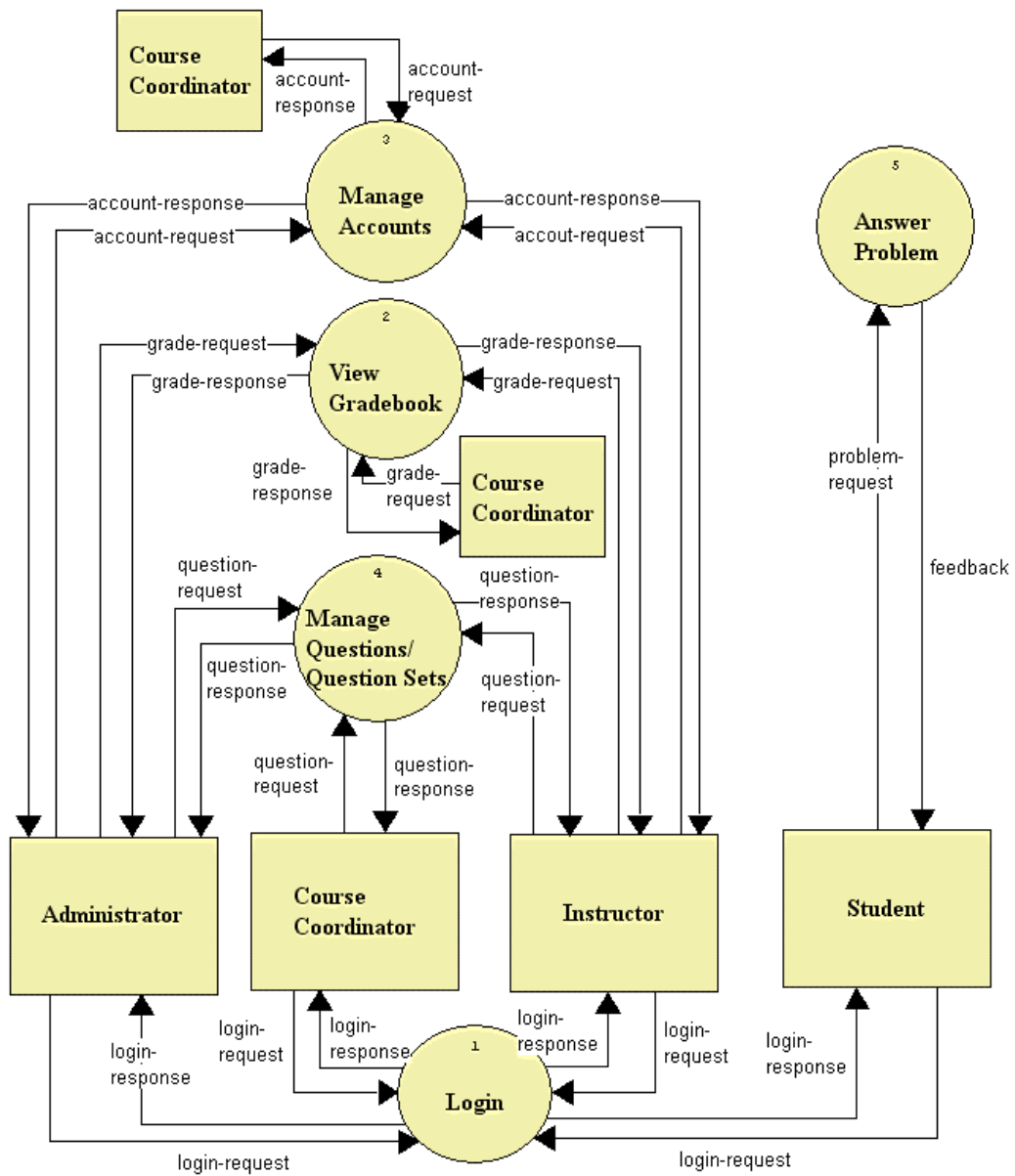
An arrow represents the transfer of data between sources or sinks, processes, and data stores.
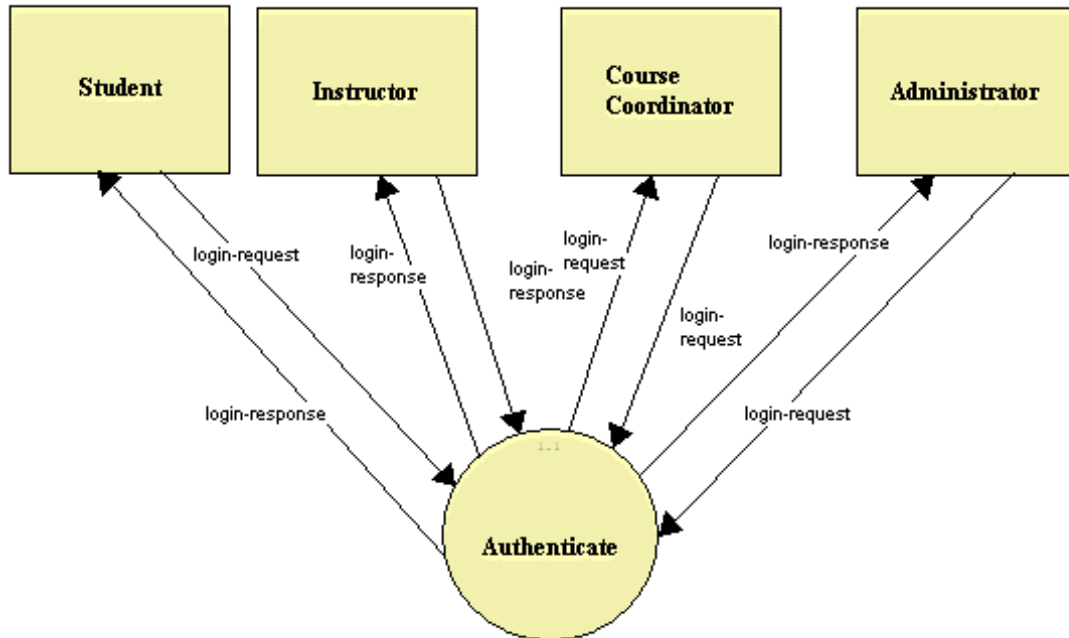
1.3.2 Context Diagram

The context diagram is the most basic data flow diagram that shows interaction between the Javanet system and the users: Administrator, Course Coordinator, Instructor, Student.
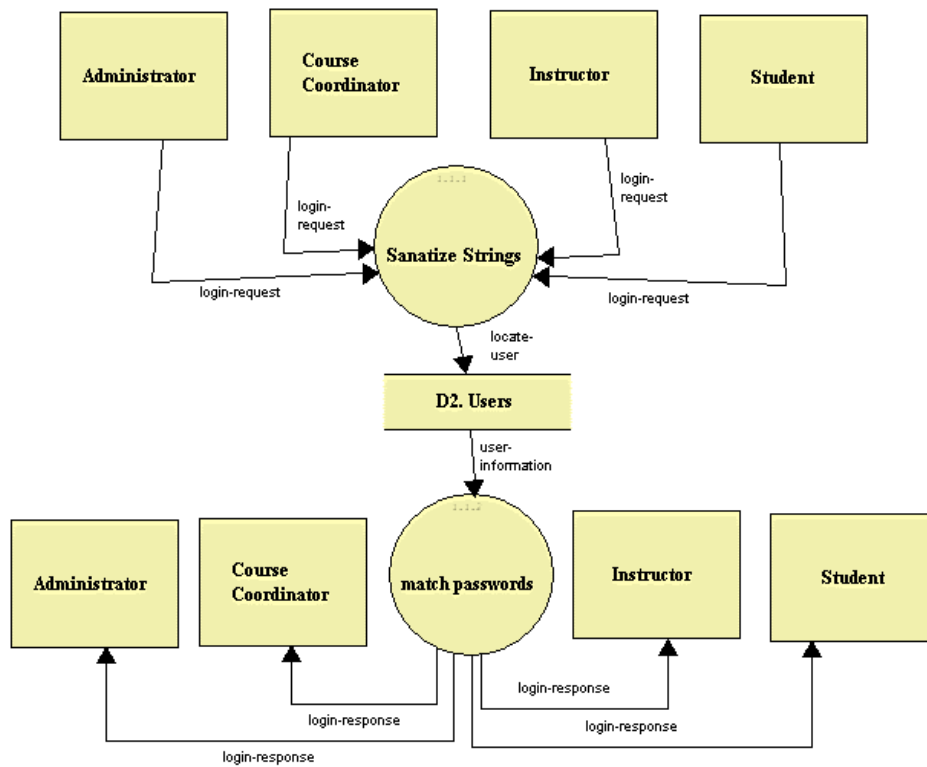
1.3.3 Level 0 Diagram

The Level 0 diagram is an expansion of the Javanet System process from the Context Diagram. It outlines all the major processes of the system and how they interact with each of the users.
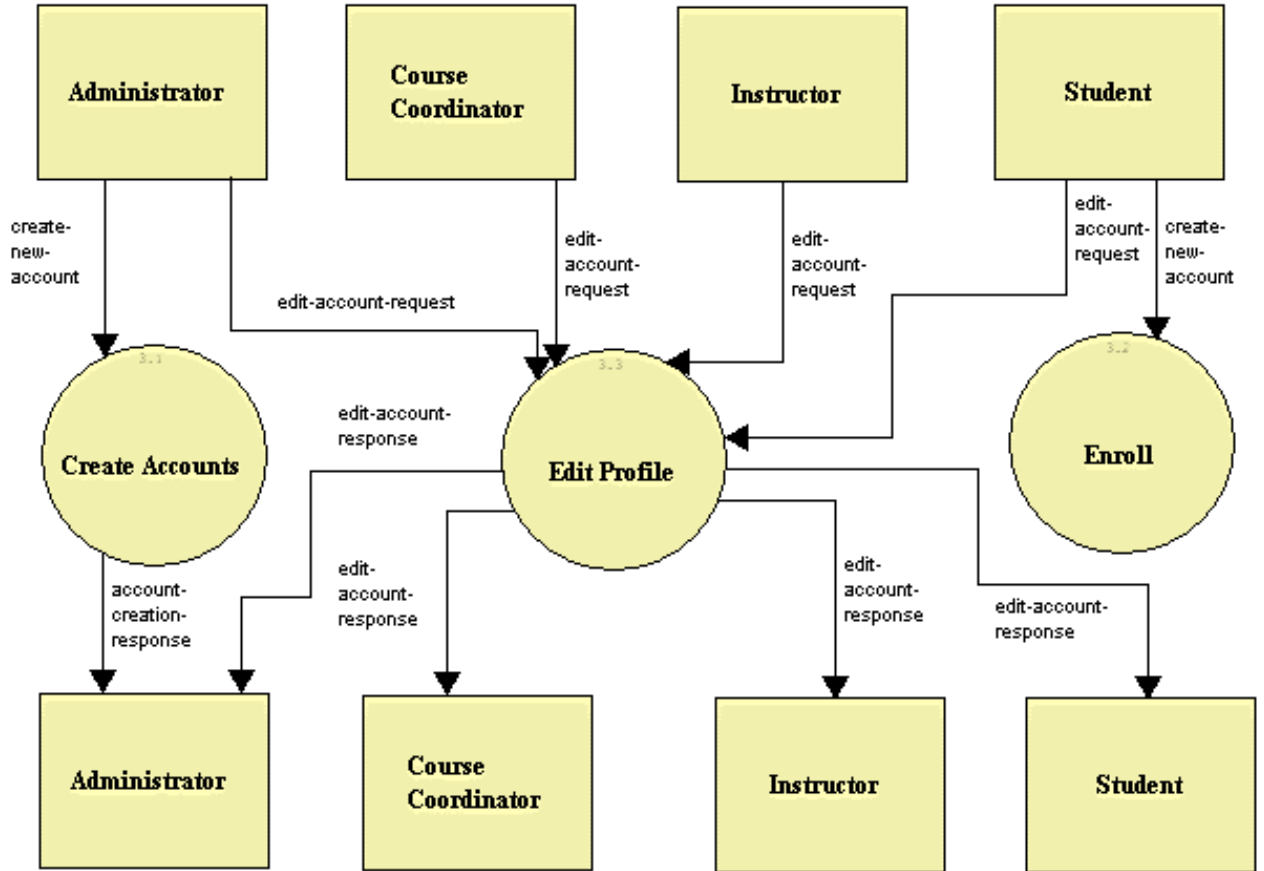
1.3.4 Level 1 Diagram: Login

Level 1 Login will try to authenticate the user.
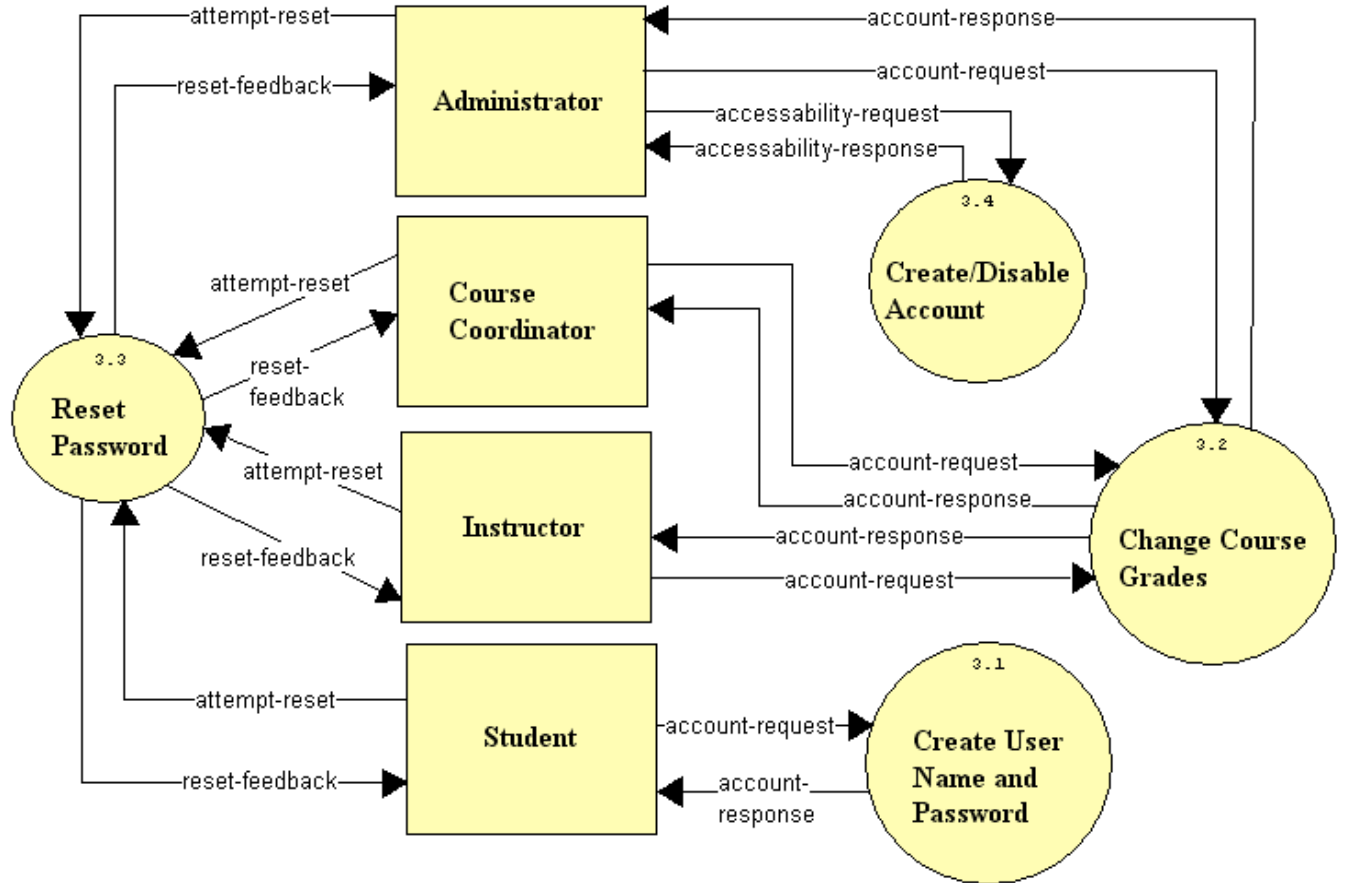
1.3.5 Level 2 Diagram: Login

Level 2 Login will sanatize all of the input strings to prevent any kind of database injection. After the strings have been sanatized check the users table to see if the users password match the one provided.
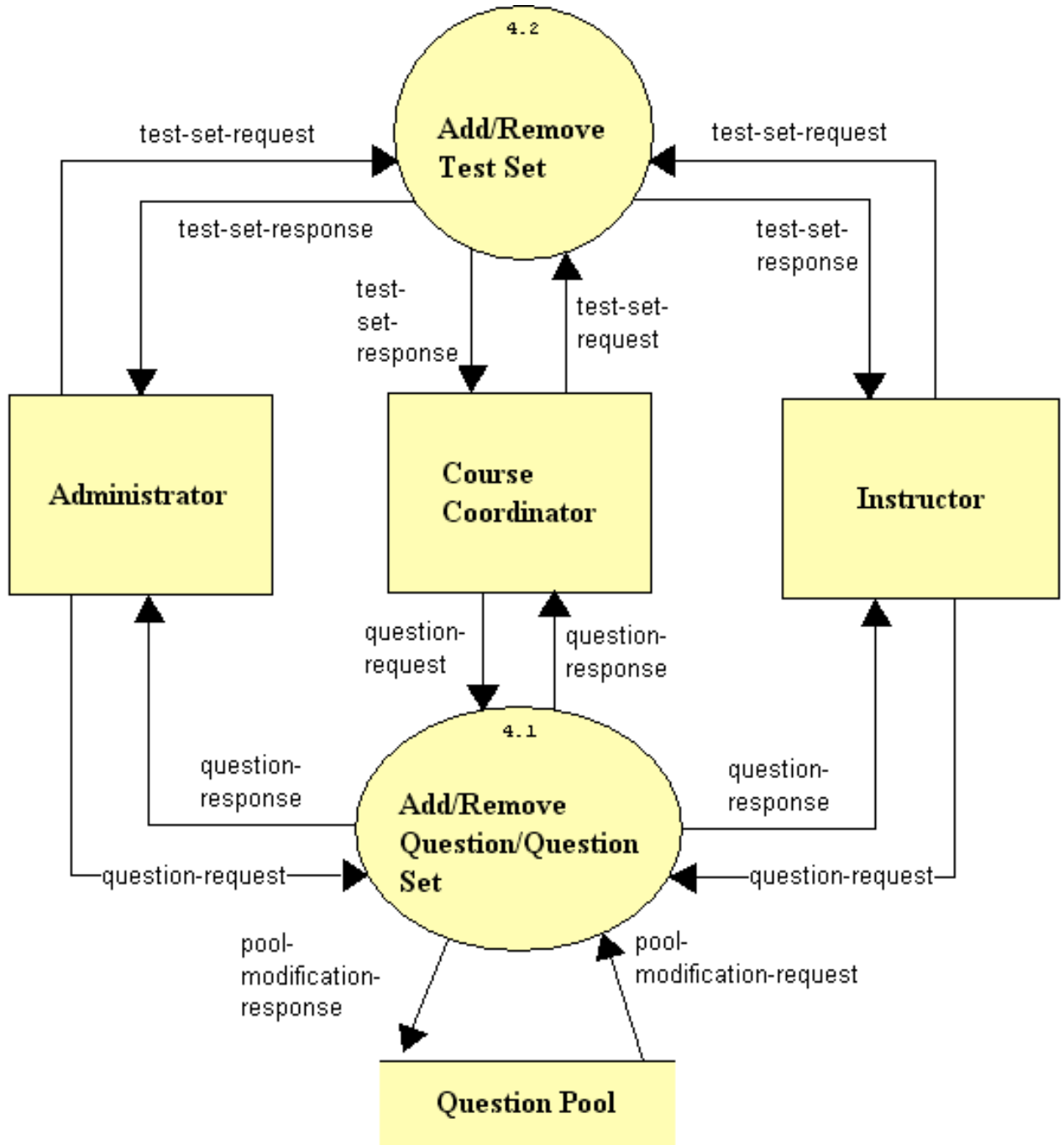
1.3.6 Level 1 Diagram: Manage Accounts

Level 1 Manage Accounts will offer the ability to create new accounts for the adminsitrator. This is where the Administrator will be able to make instructor and course coordinator accounts and the students will have the ability to self enroll
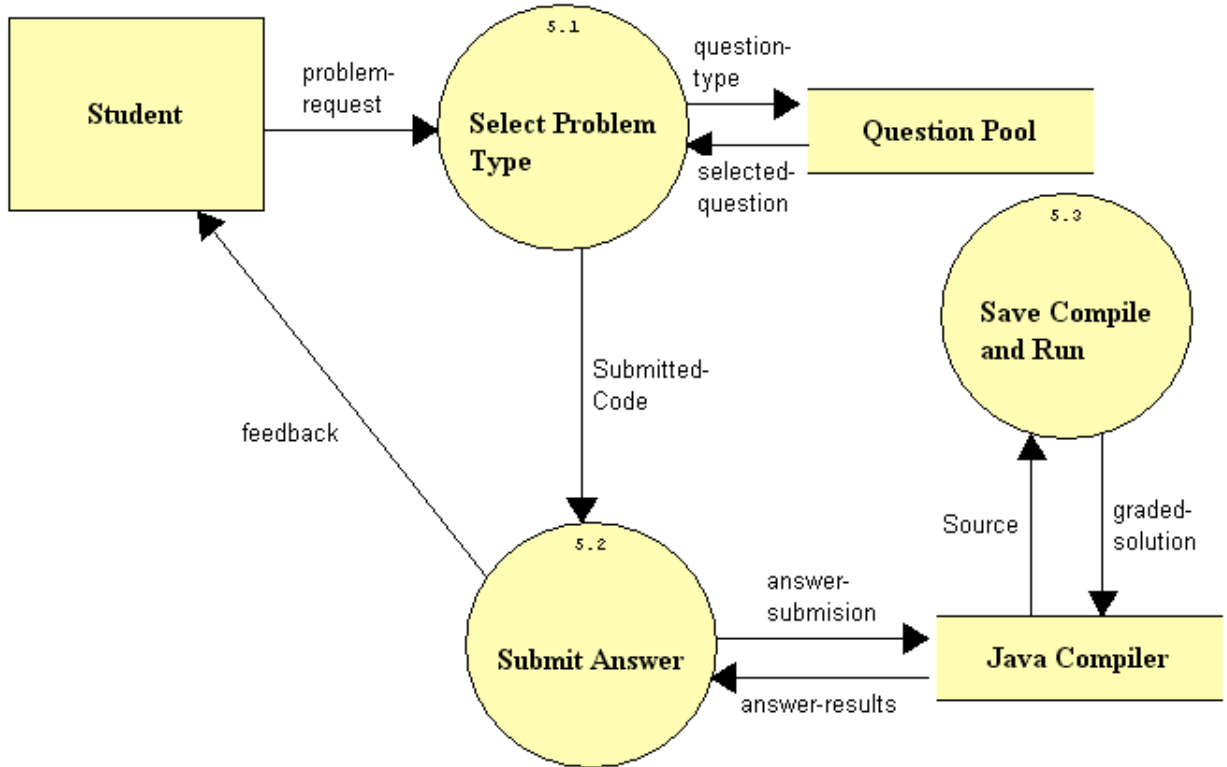
1.3.7 Level 2 Diagram: Manage Accounts

In Level 2 Manage Accounts, in the case of the Administrator the user will have the ability to create usernames and passwords, and reset passwords if they see fit. The Administrator will also be able to change any of the grades that a student has for a particular course and disable any accounts that are no longer needed.

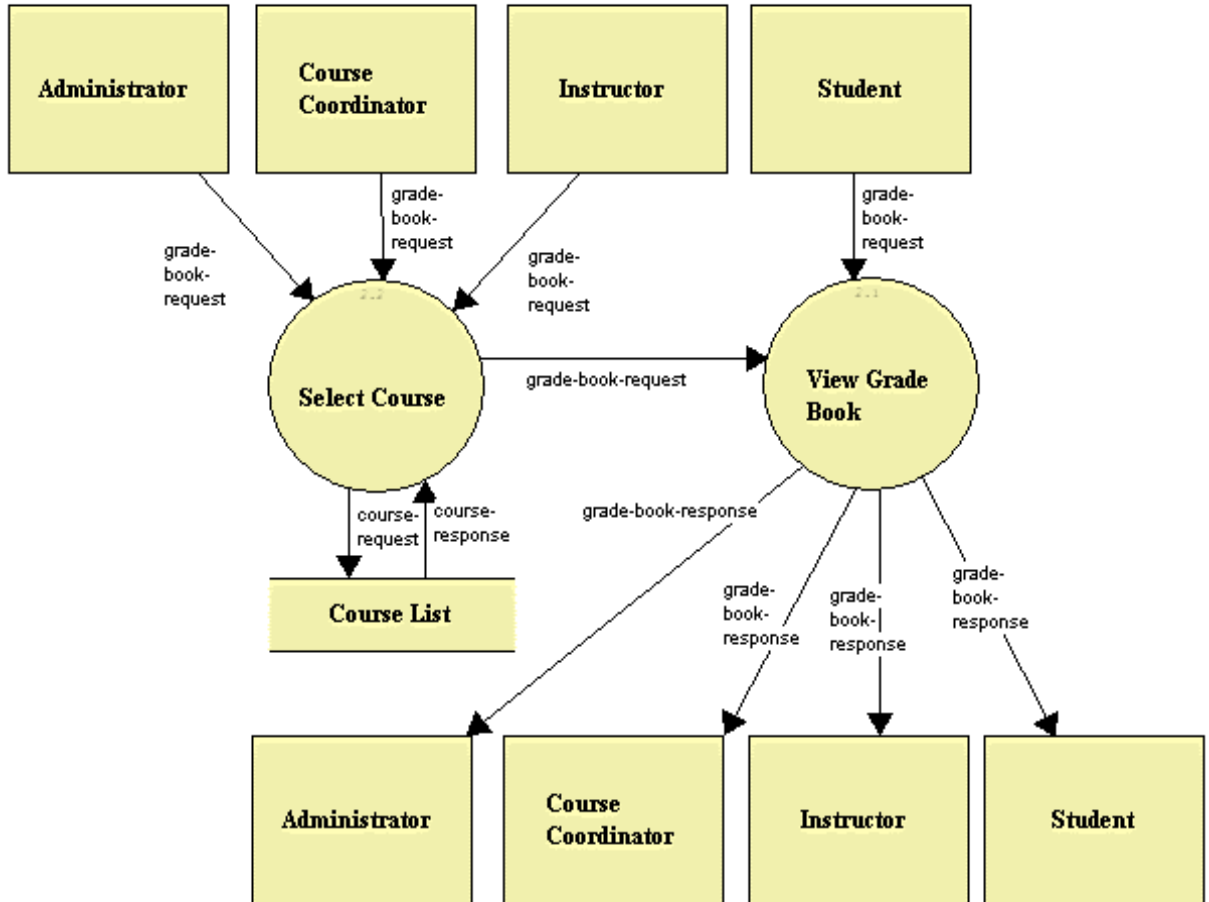## 1.3.8 Level 1 Diagram: Manage Question/Question Sets

Level 1 Manage Questions and Question Sets outlines the options that the non-student users have when creating questions and question sets.
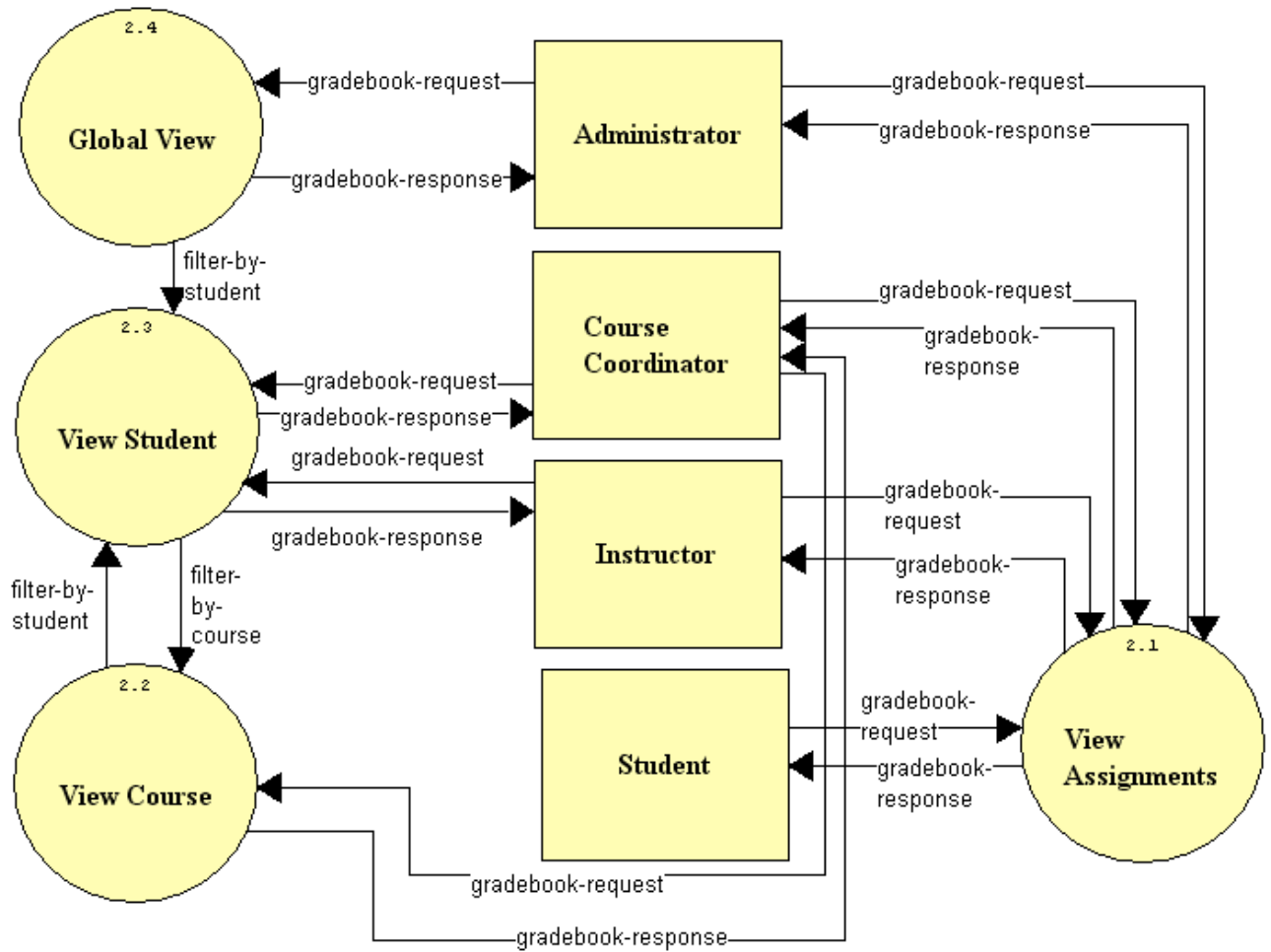
1.3.9 Level 1 Diagram: Answer Problem

Level 1 Answer Problem outlines the process that the Student user undertakes when answering a problem.

1.3.10 Level 1 Diagram: View Gradebook

Level 1 View Gradebook outlines the activity that must be taken to view the gradebook on a global level. In order for an Administrator or Course Coordinator or instructor to view a grade book they must first select the course that they will be looking at. This list will be populated from a course list.

1.3.11 Level 2 Diagram: View Grade Book

Level 2 View Gradebook outlines the activity in the gradebook at a more detailed level. Depending on the privilege level of the user viewing the grade book the user will be able to sort by assignment, course, student, or have an overall view of the gradebook.