

GradeBook

CSCI 5234 - Web Security
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About GradeBook

- 3-Tiered Web Application
- Demonstrates Role-based Access Control
 - 4 Roles: Administrator, Teacher, Student, Parent
 - Areas of the application are limited by role
- Demonstrated using two virtual machines, one running the application server, the other running the database server

User Interface

- Implemented using Java Server Faces (JSF)
 - Chosen for adherence to *MVC*, ease of development
- Prototype JavaScript toolkit
- Communication between client and application server secured by SSL.

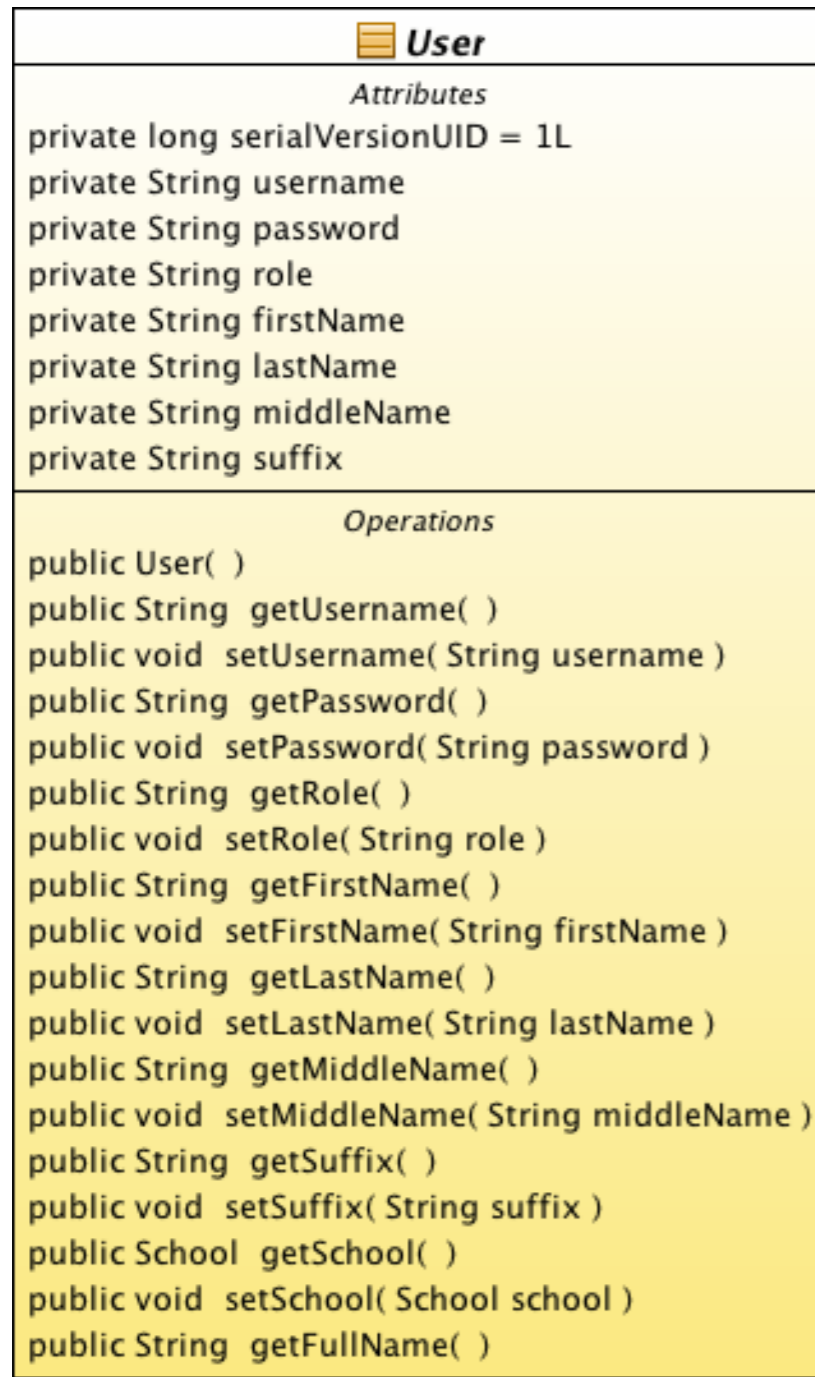
Middle Tier

- Application server provided by Apache Tomcat
- Inversion of Control container provided by Spring Framework
 - Manages life-cycle of Java objects
- Hibernate for object-relational mapping (ORM)
 - Maps object-oriented model to relational database

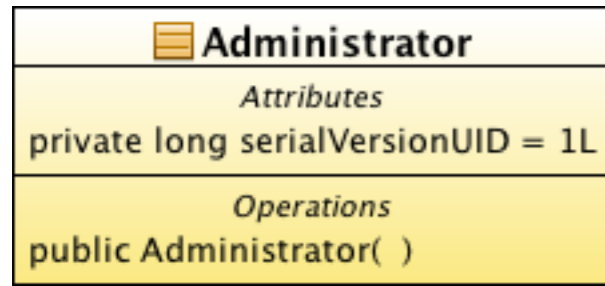
Backend

- MySQL relational database management system compiled with SSL enabled
- Interaction handled by Hibernate
- Communication between middle-tier and database secured by SSL
- User account created so SSL connections are required

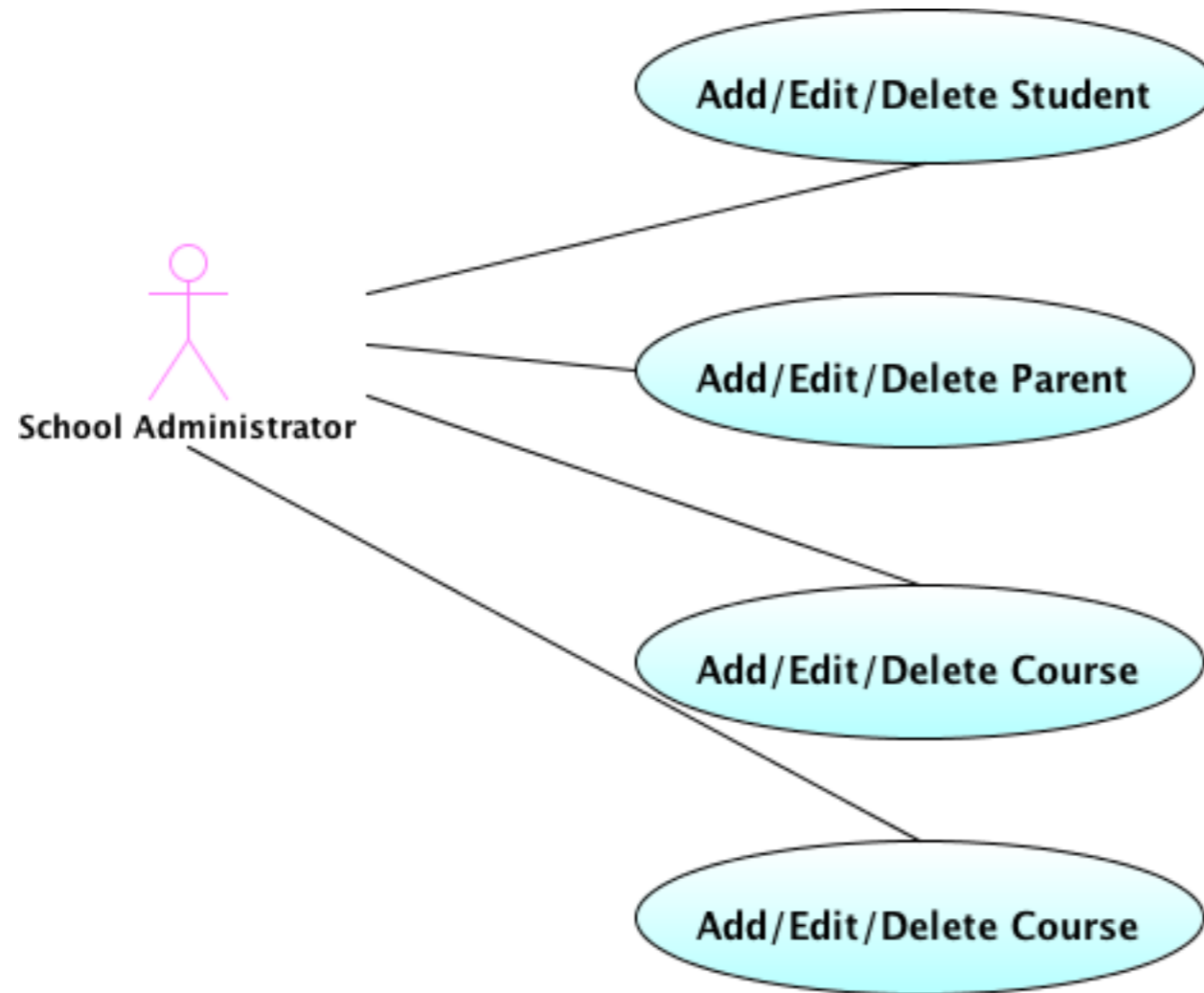
User Class Diagram



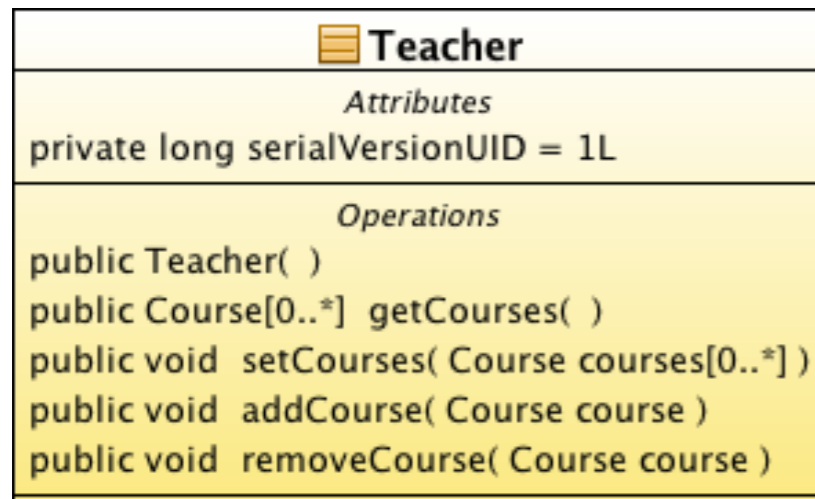
Administrator Class Diagram



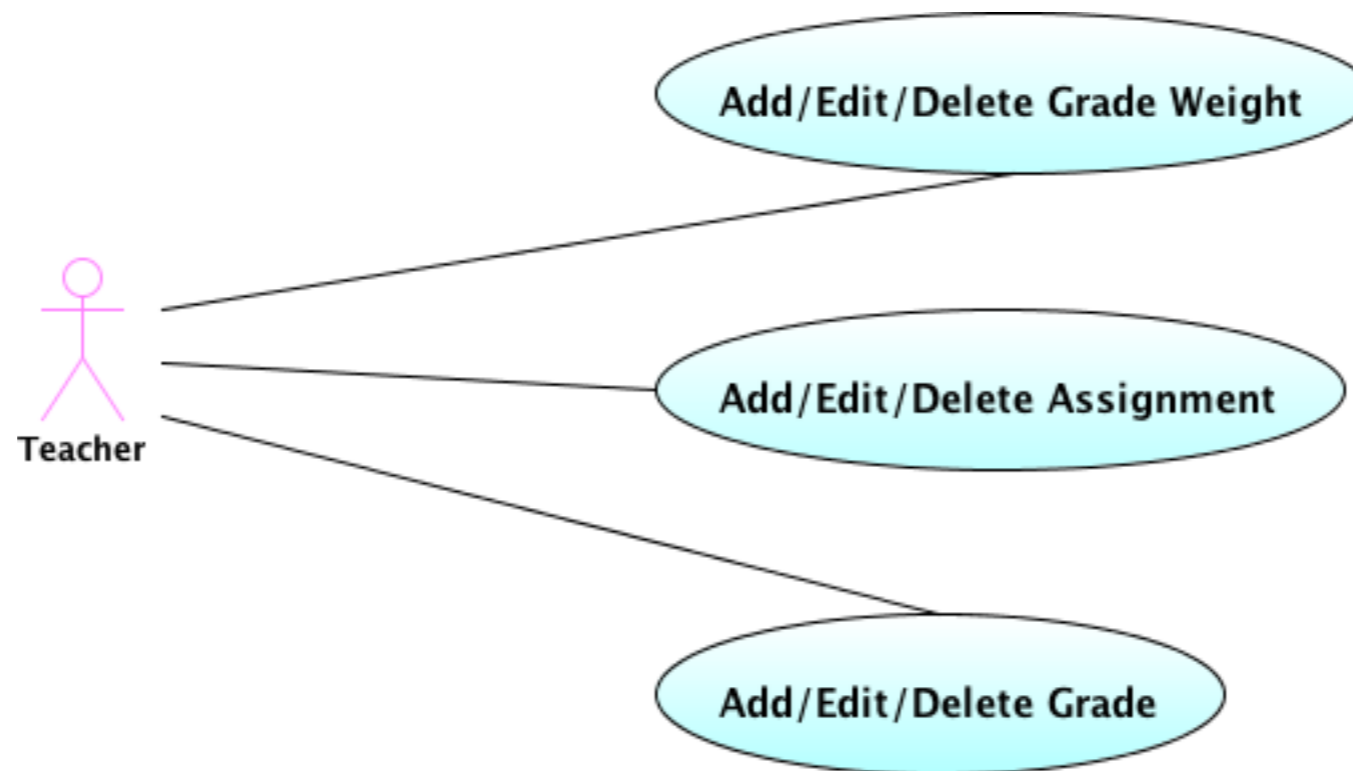
Administrator Use Case Diagram



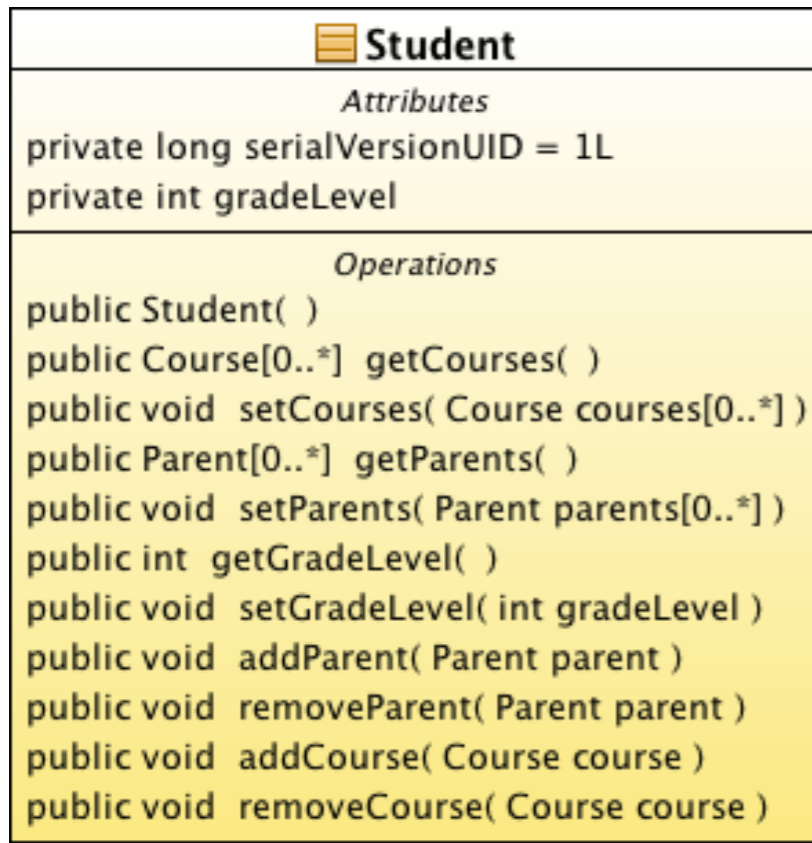
Teacher Class Diagram



Teacher Use Case Diagram



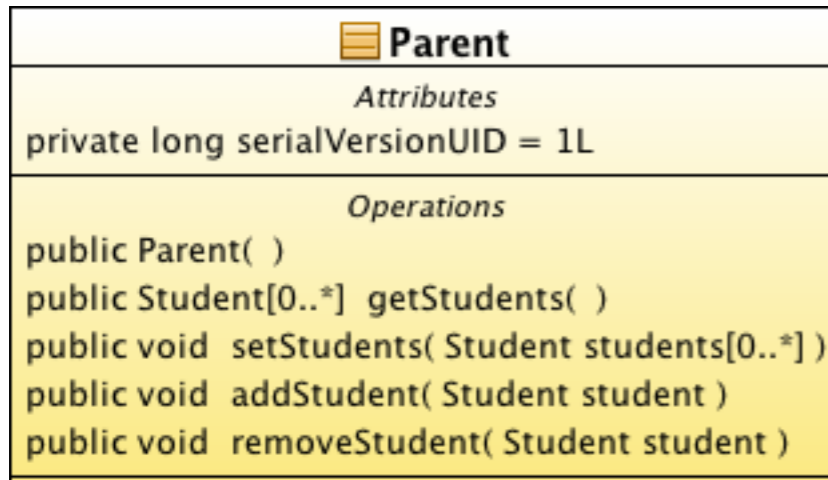
Student Class Diagram



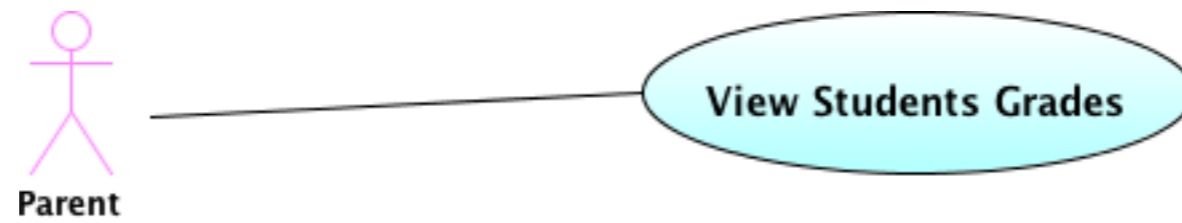
Student Use Case Diagram



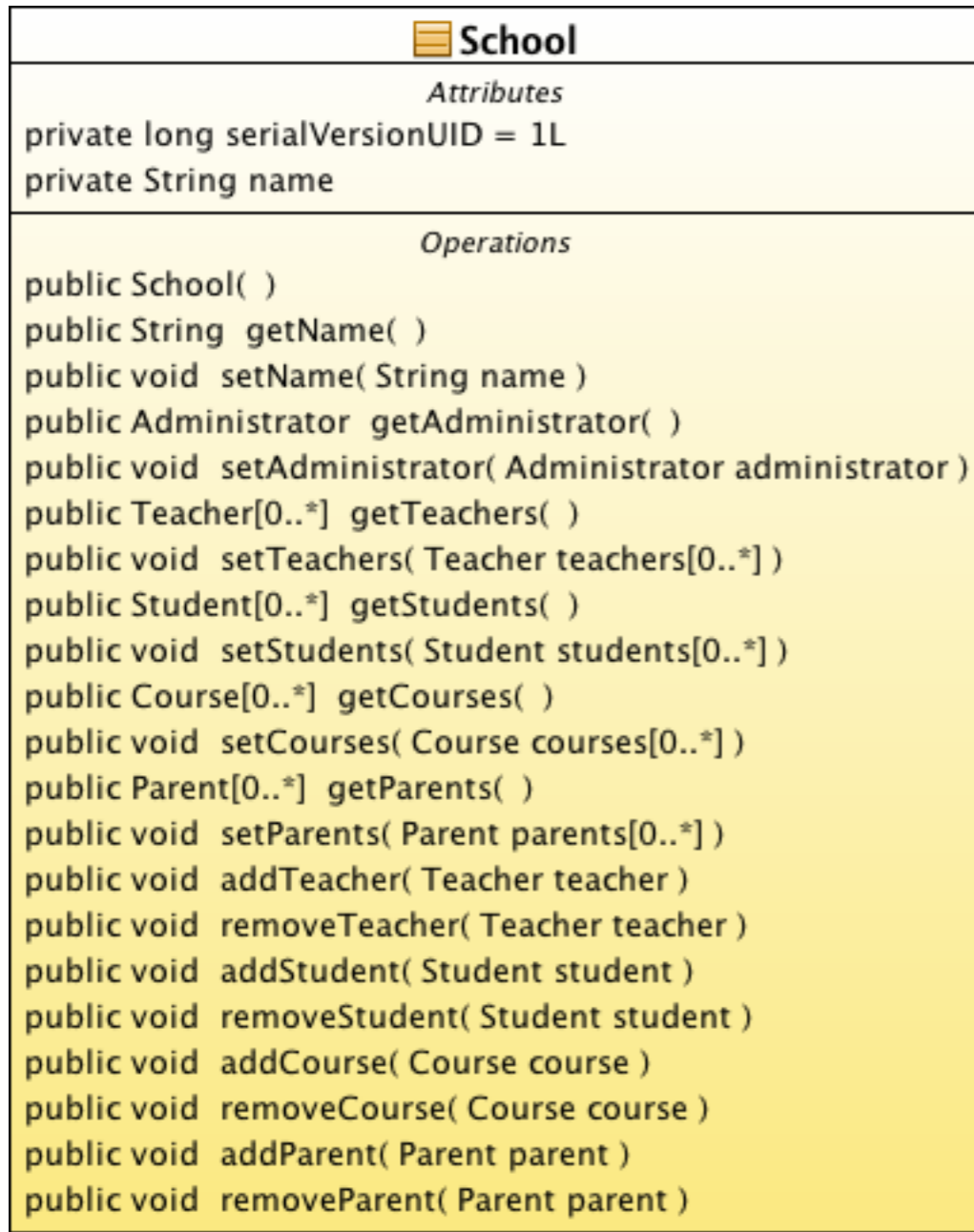
Parent Class Diagram



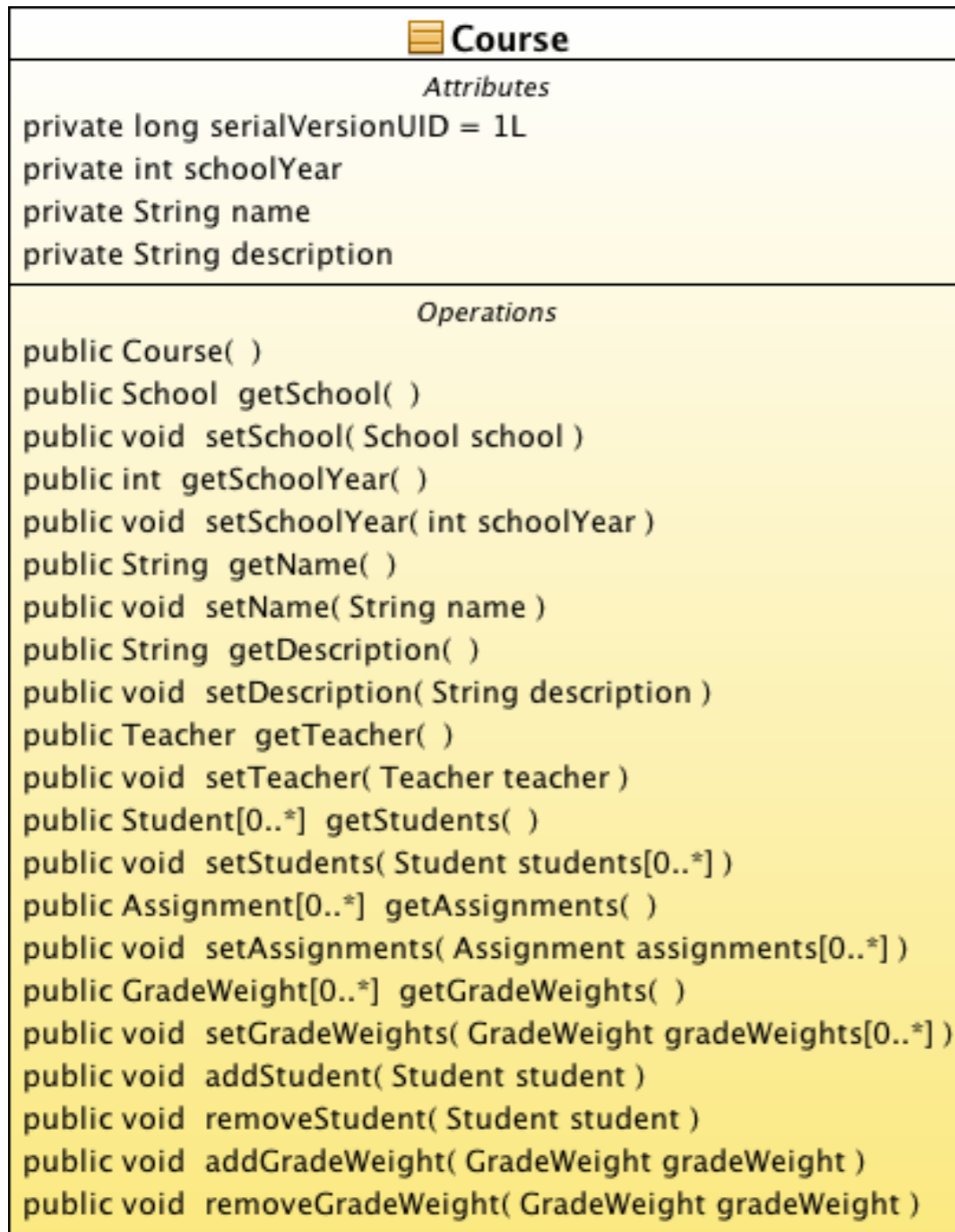
Parent Use Case Diagram



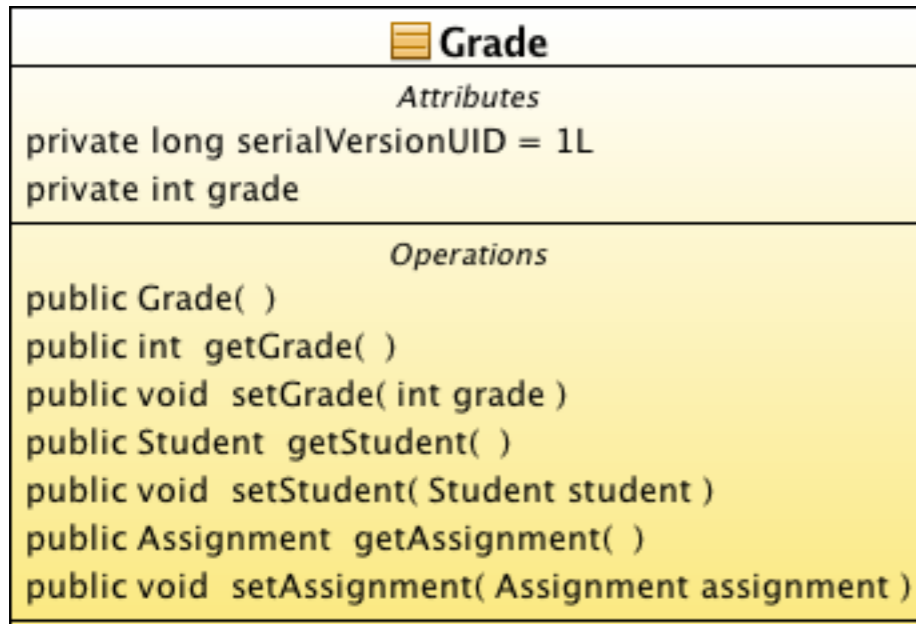
School Class Diagram



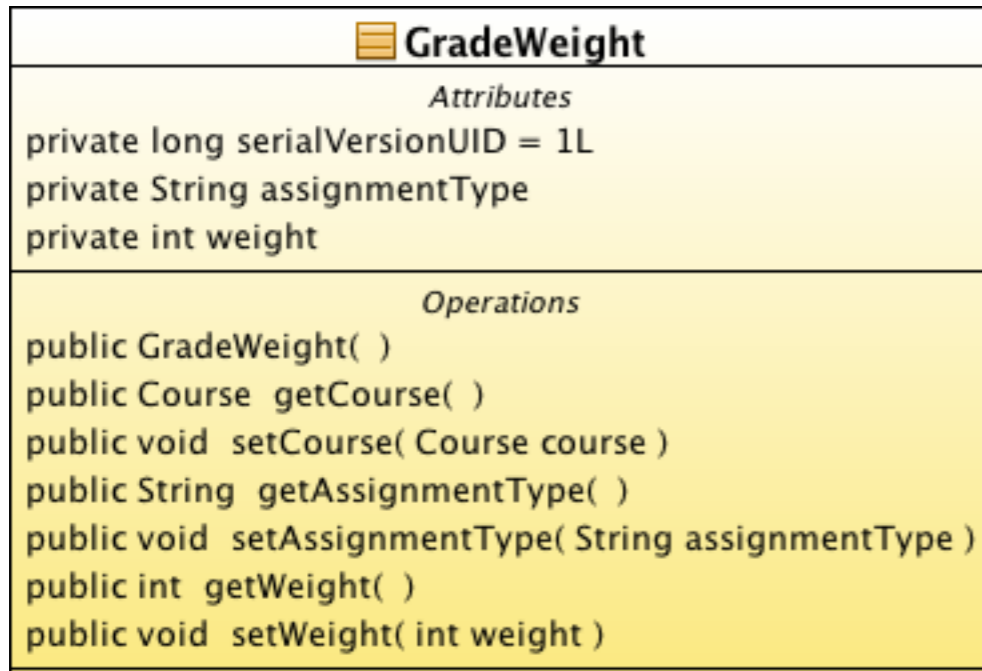
Course Class Diagram



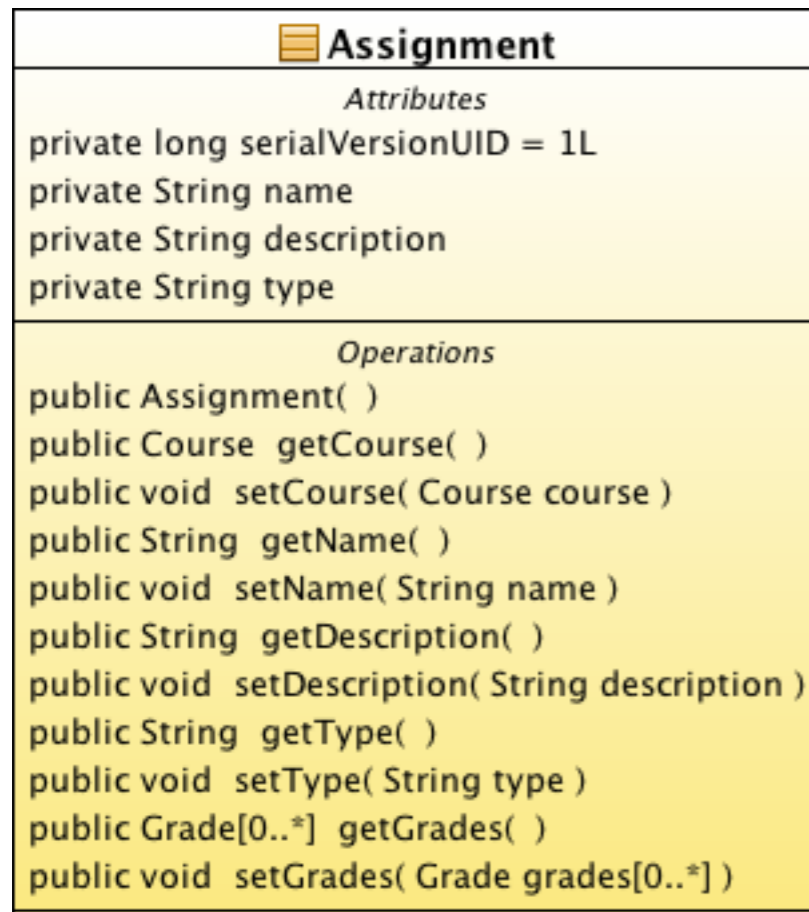
Grade Class Diagram



GradeWeight Class Diagram



Assignment Class Diagram



Data Model

