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Data Structures

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Design of Oona Zhou’s HW1 (CRS)

**Package & Interface & Classes:**

* **User** package.
* **User**: abstract superclass of **Admin** and **Student**; implements Serializable interface.
* **Serialization:** class includes a main() method that serialize and deserialize Course objects from input
* **Course:** class that includes protected variables, setters&getters; implements Serializable
* Two interfaces: **Management** for the Admin class to implement, **Enrollment** for the Student class to implement.
* **Admin**: inherits the User class and implements Management
* **Student**: inherits the User class and implements Management
* **CourseRegistration**: runs the program

**Workflow:** Reads csv from a BufferedReader object with a try-catch and instantiate Course objects and add into allCcourses 🡪 Deserialize “AllCourses.ser” with a try-catch , if it’s not empty/running the first time and change allCourses 🡪 Ask user if Admin/Student and input information to instantiate Admin/Student object 🡪 Enter if-else statement and display separate menus 🡪 Ask user to input a number and enter do-while statements to call class methods and perform tasks, information will be updates 🡪 Serialize “AllCourses.ser” with a try-catch at the end.

In my code, the User is an abstract class. Since Admin & Student have different methods, I only kept the viewAllCourse() concrete method in User. I used the Admin and Student subclasses so inherit from the User class: they inherit the constructor and the method, and added more concrete methods to perform the rest of the actions. I declared the variables as protected that they can be accessed and changed through setters and getters method to ensure privacy and safety as encapsulation.