User (abstract)

Variables:

- String id

- String username

- String email

- String password

Methods:

- void login();

- void logout();

- Getters and Setters

Admin (inherits from User)

Variables: Nothing

Methods:

- manage_users();

- addcourse_demand();

- monitor_analytics();

- payment(Student s);

- Getters and Setters

Student (inherits from User)

Variables:

- ArrayList<Course> enrolledCourses;
- ArrayList<Course> completedCourses;
- ArrayList<Certificate> earnedCertificates;

Methods:

- browse_available_courses();
- enroll_course(Course c);
- take_lesson(Lesson l);
- do_quiz(Quiz q);
- time_spent();
- Getters and Setters

Instructor (inherits from User)

Variables:

- Course course;

Methods:

- create_course();
- manage_lessons(Course c);
- manage_quizzes(Course c);
- generate_certificate(Student s);
- Getters and Setters

Course

Variables:

- ArrayList<Lesson> lessons;
- ArrayList<Quiz> quizzes;
- ArrayList<Student> Students;
- Instructor instructor;
- Certificate certificates;
- double price;
- String courseId;
- String name;

Methods:

- Getters and Setters

Lesson (beznallah done)

Variables:

- String lessonId;
- String title;
- String content;
- String optionalResource;

Methods:

- Getters and Setters

Quiz(beznallah done)

Variables:

- String quizId;

- Int Number_of_Questions;

- int passingScore;

Methods:

- evaluate(Student s);

- Getters and Setters

Certificate

Variables:

- String certificateId;

- String student_name;

- String Course_name;

- String instructor_name;

- String Date;

Methods:

- Getters and Setters

Analytics

Variables:

- int totalUsers;
- int totalStudents;
- int totalInstructors;
- int totalCourses;
- int totalCertificates;
- int CourseCompleted;
- int passedQuizzes;
- double totalTimeSpent;

Methods:

- Analysis_displaying();
- Getters and Setters

UserService(beznallah done)

Methods:

- add_instructor(Instructor i);
- add_student(Student s);
- update_user(User u);
- delete_user(String userId);

CourseService(beznallah done)

Methods:

- add_course(Course c);
- update_course(Course c);
- delete_course(String courseId);

QuizService(beznallah done)

Methods:

- add_quiz(Course c, Quiz q);
- update_quiz(Quiz q);
- delete_quiz(String quizId);

JsonDatabaseManager(beznallah done)

Variables:

- Paths to JSON files:
    - users.json
    - courses.json
    - certificates.json
    - analytics.json

Methods:

- add_user(User u);
- update_user(User u);
- delete_user(String id);
- add_course(Course c);
- update_course(Course c);
- delete_course(String id);
- add_quiz(Quiz q);
- update_quiz(Quiz q);
- delete_quiz(String id);
- add_certificate(Certificate cer);