

Vietnamese Study System for Japanese

DETAIL DESIGN DOCUMENT

Class Design

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TABLE OF CONTENTS

1 Introduction 8

1.1 Purpose 8

1.2 Definitions, Acronyms and Abbreviations 8

2 Packages 9

2.1 core.common Package 10

2.1.1 Class diagram 10

2.1.2 Const class 11

2.1.3 Utils class 14

2.1.4 JsonUtils class 14

2.1.5 HttpUtils Class 14

2.1.6 Common Sequence Diagram 15

2.2 core.controller Package 15

2.2.1 Class diagram 15

2.2.2 CoreController Class 16

2.2.3 CourseController Class 16

2.2.4 ExamController Class 16

2.2.5 LessonController Class 17

2.2.6 QuestionController Class 17

2.2.7 ReportController Class 18

2.2.8 UserController Class 18

2.2.9 Sequence Diagram 19

2.3 core.dao Package 19

2.3.1 Class diagram 19

2.3.2 HibernateCourseDao Class 20

2.3.3 HibernateExamDao Class 21

2.3.4 HibernateLessonDao Class 21

2.3.5 HibernateLessonVersionDao Class 22

2.3.6 HibernateQuestionDao Class 22

2.3.7 HibernateReportDao Class 23

2.3.8 HibernateUserDao Class 24

2.3.9 Sequence diagram 25

2.4 core.exception Package 25

2.4.1 Class diagram 25

2.4.2 CorruptedFormException Class 25

2.4.3 EmailExpectedException Class 26

2.4.4 InvalidEmailException Class 26

2.4.5 PasswordExpectedException Class 26

2.4.6 PasswordIncorrectException Class 27

2.4.7 UsernameExpectedException Class 27

2.4.8 Sequence Diagram 27

2.5 core.form Package 28

2.5.1 Class diagram 28

2.5.2 AnswerForm Class 29

2.5.3 ChangeRoleForm Class 29

2.5.4 ChgpwdForm Class 30

2.5.5 CreateExamForm Class 30

2.5.6 CreateLessonForm Class 30

2.5.7 FileUploadForm Class 31

2.5.8 LoginForm Class 31

2.5.9 LookupForm Class 32

2.5.10 QuestionForm Class 32

2.5.11 RegisterForm Class 32

2.5.12 ReportForm Class 33

2.5.13 ReportLessonForm Class 33

2.5.14 UpdateLessonForm Class 33

2.5.15 UpdateUserForm Class 34

2.5.16 Sequence Diagram 35

2.6 core.model package 35

2.6.1 Class diagram 35

2.6.2 AnswerModel Class 36

2.6.3 BasicModel Class 36

2.6.4 CourseModel Class 37

2.6.5 ExamAnswer Class 37

2.6.6 ExamModel Class 37

2.6.7 LessonModel Class 38

2.6.8 LessonVersionModel Class 38

2.6.9 MessageModel Class 39

2.6.10 QuestionModel Class 39

2.6.11 ReportModel Class 40

2.6.12 UserModel Class 41

2.6.13 Sequence Diagram 42

2.7 core.response Package 42

2.7.1 Class diagram 42

2.7.2 AddQuestionResponseData Class 43

2.7.3 AnswerResponseData Class 43

2.7.4 BriefLessonResponse Class 43

2.7.5 CreateLessonResponse Class 44

2.7.6 ExamResponseData Class 45

2.7.7 GetCourseResponse Class 45

2.7.8 GetLearnerExamsResponseData Class 45

2.7.9 GetLessonResponse Class 46

2.7.10 GetLessonVersionResponse Class 46

2.7.11 GetListUsersResponseData Class 47

2.7.12 GetQuestionDetailsResponseData Class 48

2.7.13 GetQuestionResponseData Class 48

2.7.14 GetUserResponseData Class 49

2.7.15 LoginResponseData Class 49

2.7.16 LookupWordResponse Class 50

2.7.17 Response Class 50

2.7.18 ResponseCode Class 50

2.7.19 ResponseExample Class 52

2.7.20 ResponseWordMean Class 52

2.7.21 UploadFileResponse Class 52

2.7.22 Sequence Diagram 53

2.8 core.security package 53

2.8.1 Class diagram 53

2.8.2 Veazy403Handler Class 53

2.8.3 VeazyAuthenEntryPoint Class 54

2.8.4 VeazyAuthenFailureHandler Class 54

2.8.5 VeazyAuthenFilter Class 54

2.8.6 VeazyAuthenProvider Class 55

2.8.7 VeazyAuthenSuccessHandler Class 55

2.8.8 Sequence Diagram 56

2.9 core.service Package 56

2.9.1 Class diagram 56

2.9.2 CourseServiceImpl Class 56

2.9.3 ExamServiceImpl Class 57

2.9.4 LessonServiceImpl Class 57

2.9.5 QuestionBankServiceImpl Class 58

2.9.6 QuestionServiceImpl Class 58

2.9.7 ReportServiceImpl Class 58

2.9.8 UserServiceImpl Class 59

2.10 dictionary.controller Package 60

2.10.1 Class diagram 60

2.10.2 DictController Class 60

2.10.3 Sequence Diagram 61

2.11 dictionary.dao Package 61

2.11.1 Class diagram 61

2.11.2 HibernateExampleDao Class 62

2.11.3 HibernateJaviDao Class 62

2.11.4 HibernateVijaDao Class 63

2.11.5 Sequence Diagram 64

2.12 dictionary.model package 64

2.12.1 Class diagram 64

2.12.2 ExampleModel Class 65

2.12.3 JaviModel Class 65

2.12.4 VijaModel Class 65

2.12.5 WordMean Class 66

2.12.6 Sequence Diagram 67

2.13 dictionary.service package 67

2.13.1 Class diagram 67

2.13.2 DictServiceImpl Class 67

2.13.3 Sequence Diagram 68

3 MVC model 69

# Introduction

## Purpose

Vietnamese Study System for Japanese class design document contains descriptions of all classes of the Vietnamese Study System for Japanese system. It includes:

* Class diagrams that describe the static relation of all classes in the system.

## Definitions, Acronyms and Abbreviations

|  |  |  |
| --- | --- | --- |
| Abbreviations | Description | Comment |
| MVC | Model View Control model |  |

# D:\Documents\GitHub\DATN\201605JS01\WIP\Users\TungDT\Class Diagram\Package.pngPackages

**Figure 0: List Packages**

|  |  |  |  |
| --- | --- | --- | --- |
| No | Package | Language | Description |
| 1. 01 | core | JAVA | Contains classes related to core function |
|  | dictionary | JAVA | Contain classes related to dictionary |
|  | common | JAVA |  |
|  | controller | JAVA | Contain web controller |
|  | dao | JAVA | Contain data access object |
|  | exception | JAVA | Contain defined exception |
|  | form | JAVA | Contain defined web form |
|  | model | JAVA | Contain model class |
|  | response | JAVA | Contain response model class |
|  | security | JAVA | Contain classes related security |
|  | service | JAVA | Contain web service |

## core.common Package

### C:\Users\CuHo\Desktop\Class Diagram0.pngClass diagram

**Figure 1: Class diagram core.common package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | Const | Contain constant variable |
| 2 | Utils | Contain common utility function |
| 3 | JsonUtils | Contain utility function about json |
| 4 | HttpUtils | Contain utility function about http |
| 5 | HtmlUtils | Contain utility function about html |

### Const class

#### Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| No | Attribute | Type | Value |
| 1. 1 | CORS\_HEADER\_ENABLED | boolean | TRUE |
| 1. 2 | RESOURCE\_URL | String | /res |
| 1. 3 | URLMAPPING\_MAKE\_ADMIN | String | /mkad/{user\_id} |
| 1. 3 | URLMAPPING\_MAKE\_EDITOR | String | /mked/{user\_id} |
|  | URLMAPPING\_HOME | String | / |
|  | URLMAPPING\_UPLOADFILE | String | /uploadfile |
|  | URL\_PREFIX | String | /api |
|  | URLMAPPING\_REGISTER | String | URL\_PREFIX + "/register" |
|  | URLMAPPING\_LOGIN | String | URL\_PREFIX + "/login" |
|  | URLMAPPING\_LOGOUT | String | URL\_PREFIX + "/logout" |
|  | URLMAPPING\_RESET\_PASSWORD | String | URL\_PREFIX + "/users/reset\_password" |
|  | URLMAPPING\_GET\_USER | String | URL\_PREFIX + "/users/{user\_id}" |
|  | URLMAPPING\_GET\_CURRENT\_USER | String | URL\_PREFIX + "/user" |
|  | URLMAPPING\_UPDATE\_CURRENT\_USER | String | URL\_PREFIX + "/user/update" |
|  | URLMAPPING\_CHGPWD\_CURRENT\_USER | String | URL\_PREFIX + "/user/chgpwd" |
|  | URLMAPPING\_GET\_LIST\_USERS | String | URL\_PREFIX + "/users" |
|  | URLMAPPING\_GET\_LEARNER\_EXAMS | String | URL\_PREFIX + "/users/{user\_id}/exams" |
|  | URLMAPPING\_GET\_LEARNER\_EXAM\_STATISTIC | String | URL\_PREFIX + "/users/{user\_id}/exams/statistics" |
|  | URLMAPPING\_CHANGE\_ROLE | String | URL\_PREFIX + "/users/change\_roll/{user\_id}" |
|  | URLMAPPING\_CREATE\_LESSON | String | URL\_PREFIX + "/lessons/new" |
|  | URLMAPPING\_GET\_LESSON\_VERSION | String | URL\_PREFIX + "/lessons/{lesson\_id}/ver{version}" |
|  | URLMAPPING\_DRAFT\_LESSON | String | URL\_PREFIX + "/lessons/savedraft/{lesson\_id}" |
|  | URLMAPPING\_UPDATE\_LESSON | String | URL\_PREFIX + "/lessons/update/{lesson\_id}" |
|  | URLMAPPING\_PUBLISH\_LESSON | String | URL\_PREFIX + "/lessons/publish/{lesson\_id}" |
|  | URLMAPPING\_REPORT\_LESSON | String | URL\_PREFIX + "/lessons/report/{lesson\_id}" |
|  | URLMAPPING\_GET\_LESSON\_COURSE | String | URL\_PREFIX + "/courses/{course\_id}/lessons" |
|  | URLMAPPING\_GET\_LESSON | String | URL\_PREFIX + "/lessons/{lesson\_id}" |
|  | URLMAPPING\_GET\_ALL\_LESSON | String | URL\_PREFIX + "/lessons" |
|  | URLMAPPING\_DELETE\_LESSON | String | URL\_PREFIX + "/lessons/delete/{lesson\_id}" |
|  | URLMAPPING\_GET\_COURSES | String | URL\_PREFIX + "/courses" |
|  | URLMAPPING\_LOOKUP\_JAVI | String | URL\_PREFIX + "/dict/javi/" |
|  | URLMAPPING\_LOOKUP\_VIJA | String | URL\_PREFIX + "/dict/vija/" |
|  | URLMAPPING\_CREATE\_QUESTION | String | URL\_PREFIX + "/questions/new" |
|  | URLMAPPING\_UPDATE\_QUESTION | String | URL\_PREFIX + "/questions/update/{question\_id}" |
|  | URLMAPPING\_GET\_QUESTION | String | URL\_PREFIX + "/questions/{question\_id}" |
|  | URLMAPPING\_GET\_QUESTION\_OF\_SKILL | String | URL\_PREFIX + "/skill/{skill\_id}/questions" |
|  | URLMAPPING\_GET\_QUESTION\_OF\_COURSE | String | URL\_PREFIX + "/courses/{course\_id}/questions" |
|  | URLMAPPING\_GET\_LIST\_QUESTIONS | String | URL\_PREFIX + "/questions" |
|  | URLMAPPING\_DELETE\_QUESTION | String | URL\_PREFIX + "/questions/delete/{question\_id}" |
|  | URLMAPPING\_REPORT\_QUESTION | String | URL\_PREFIX + "/questions/report/{question\_id}" |
|  | URLMAPPING\_CREATE\_EXAM | String | URL\_PREFIX + "/exams" |
|  | URLMAPPING\_SUBMIT\_EXAM\_ANSWER | String | URL\_PREFIX + "/exams/submit" |
|  | URLMAPPING\_GET\_EXAM | String | URL\_PREFIX + "/exams/{exam\_id}" |
|  | URLMAPPING\_REDO\_EXAM | String | URL\_PREFIX + "/exams/{exam\_id}/redo" |
|  | URLMAPPING\_GET\_REPORT | String | URL\_PREFIX + "/report/get/{report\_id}" |
|  | URLMAPPING\_GET\_ALL\_REPORT | String | URL\_PREFIX + "/report/all" |
|  | URLMAPPING\_READ\_REPORT | String | URL\_PREFIX + "/report/read/{report\_id}" |
|  | URLMAPPING\_DELETE\_REPORT | String | URL\_PREFIX + "/report/delete/{report\_id}" |
|  | URLMAPPING\_SEARCH\_QUESTION | String | URL\_PREFIX + "/search/question" |
|  | URLMAPPING\_SEARCH\_LESSON | String | URL\_PREFIX + "/search/lesson" |
|  | UPDATING | Integer | 1 |
|  | PUBLISHED | Integer | 2 |
|  | START\_INDEX | Integer | 1 |
|  | ROLE\_ADMIN | Integer | 1 |
|  | ROLE\_EDITOR | Integer | 2 |
|  | ROLE\_LEARNER | Integer | 3 |
|  | QUESTIONTYPE\_ALL | Integer | 0 |
|  | QUESTIONTYPE\_SINGULAR | Integer | 1 |
|  | QUESTIONTYPE\_GROUP | Integer | 2 |
|  | MULTIPLE\_CHOICE | Integer | 1 |
|  | VOCABULARY | Integer | 1 |
|  | GRAMMAR | Integer | 2 |
|  | READING | Integer | 3 |
|  | LISTENING | Integer | 4 |

### Utils class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | REGEX\_EMAIL\_PATTERN | String |  | private | Regex pattern to determine an email |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | isValidEmail() | Check if a string is a valid email or not. |
| 2 | isNullOrEmpty() | Check if a string is null or empty. |
| 3 | round() |  |

### JsonUtils class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
|  |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | toJson() | Convert an object to a json format |
| 2 | toBeautyJson() | Convert an object to a beautiful json format |

### HttpUtils Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getContextUrl() |  |
| 2 | addCorsHeader() |  |

### HttpUtils Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | isEmptyDocument() |  |

### Common Sequence Diagram

## core.controller Package

### C:\Users\CuHo\Desktop\controller.pngClass diagram

**Figure 2: Class diagram core.controller package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | CoreController | Control core API |
| 2 | CourseController | Control course API |
| 3 | ExamController | Control exam API |
| 4 | LessonController | Control lesson API |
| 5 | QuestionController | Control question API |
| 6 | ReportController | Control report API |
| 7 | SearchController |  |
| 8 | UserController | Control user API |

### CoreController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 2 | uploadFile() | To upload file |

### CourseController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCourses() | Return all courses |

### ExamController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | createExam () | Generate an exam for learner and return the exam. |

### LessonController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | createLesson () | Create a lesson |
| 2 | updateLesson () | Update a lesson |
| 3 | publishLesson () | Make updating lesson version to publish state |
| 4 | reportLesson () | Report a lesson |
| 5 | getLessonOfCourse () | Return all lesson of a course |
| 6 | getLesson () | Return a lesson |
| 7 | getAllLesson () | Return all lesson of system |
| 8 | getLessonVersion () | Return the version of lesson |
| 9 | delete () | Delete a lesson |

### QuestionController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | createQuestion () | Create a question |
| 2 | updateQuestion () | Update a question |
| 3 | getListQuestions () | Return list of question |
| 4 | getQuestion () | Return a question |
| 5 | deleteQuestion() | Delete a question |
| 6 | reportQuestion() | Report a question |

### SearchController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | searchQuestion () | Search a question |

### ReportController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getReport () | Return a report |
| 2 | getAllReport () | Return all report |
| 3 | readReport () | Make a report as read state |
| 4 | deleteReport () | Delete a report |

### UserController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | register () | Sign up an account |
| 2 | loginProceed () | Login to system |
| 3 | logoutProceed () | Logout system |
| 4 | getCurrentUser () | Return current user information |
| 5 | updateCurrentUser() | Update user information |
| 6 | changePasswordCurrentUser() | Change password |
| 7 | getUser() | Return an user information |
| 8 | getListUser() | Return list of the user |
| 9 | getLearnerExamss() | Return the done exam of a learner |
| 10 | changeUserRoll() | Change user role |

### Sequence Diagram

## C:\Users\CuHo\Desktop\Dao.pngcore.dao Package

**Figure 3: Class diagram core.dao package**

### Class diagram

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | HibernateCourseDao | Provide method to manage the course in database |
| 2 | HibernateExamDao | Provide method to manage the exam in database |
| 3 | HibernateLessonDao | Provide method to manage the lesson in database |
| 4 | HibernateLessonVersionDao | Provide method to manage the version of lesson in database |
| 5 | HibernateQuestionDao | Provide method to manage the question in database |
| 6 | HibernateReportDao | Provide method to manage the report in database |
| 7 | HibernateUserDao | Provide method to manage the account in database |
| 8 | HibernateAnswerDao | Provide method to manage the question answer in database |
| 9 | HibernateLuceneDao |  |

### HibernateCourseDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a course to database |
| 2 | findById() | Find a course by its id |
| 3 | findByExample() | Find all course have same feature with example |
| 4 | findByExample() | Find some course have same feature with example |
| 5 | getAll() | Return all course |
| 6 | update() | Update a course |
| 7 | delete() | Delete a course |
| 8 | getCount() | Return the number of the course in database |
| 9 | executeSql() | Return the courses execute by sql |

### HibernateExamDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save an exam to database |
| 2 | findById() | Find an exam by its id |
| 3 | findByExample() | Find all exam have same feature with example |
| 4 | findByExample() | Find some exam have same feature with example |
| 5 | getAll() | Return all exam |
| 6 | update() | Update an exam |
| 7 | delete() | Delete an exam |
| 8 | getCount() | Return the number of the exam in database |
| 9 | executeSql() | Return the exams execute by sql |

### HibernateLessonDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a lesson to database |
| 2 | findById() | Find a lesson by its id |
| 3 | findByExample() | Find all lesson have same feature with example |
| 4 | findByExample() | Find some lesson have same feature with example |
| 5 | getAll() | Return all lesson |
| 6 | update() | Update a lesson |
| 7 | delete() | Delete a lesson |
| 8 | getCount() | Return the number of the lesson in database |
| 9 | executeSql() | Return the lessons execute by sql |

### HibernateLessonVersionDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a lesson version to database |
| 2 | findById() | Find a lesson version by its id |
| 3 | findByExample() | Find all lesson version have same feature with example |
| 4 | findByExample() | Find some lesson version have same feature with example |
| 5 | getAll() | Return all lesson version |
| 6 | update() | Update a lesson version |
| 7 | delete() | Delete a lesson version |
| 8 | getCount() | Return the number of the lesson version in database |
| 9 | executeSql() | Return the lesson versions execute by sql |

### HibernateQuestionDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a question to database |
| 2 | findById() | Find a question by its id |
| 3 | findByExample() | Find all question have same feature with example |
| 4 | findByExample() | Find some question have same feature with example |
| 5 | getAll() | Return all question |
| 6 | update() | Update a question |
| 7 | delete() | Delete a question |
| 8 | getCount() | Return the number of the question in database |
| 9 | executeSql() | Return the questions execute by sql |

### HibernateReportDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a report to database |
| 2 | findById() | Find a report by its id |
| 3 | findByExample() | Find all report have same feature with example |
| 4 | findByExample() | Find some report have same feature with example |
| 5 | getAll() | Return all report |
| 6 | update() | Update a report |
| 7 | delete() | Delete a report |
| 8 | getCount() | Return the number of the report in database |
| 9 | executeSql() | Return the reports execute by sql |

### HibernateUserDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save an account to database |
| 2 | findById() | Find an account by its id |
| 3 | findByExample() | Find all account have same feature with example |
| 4 | findByExample() | Find some account have same feature with example |
| 5 | getAll() | Return all account |
| 6 | update() | Update an account |
| 7 | delete() | Delete an account |
| 8 | getCount() | Return the number of the account in database |
| 9 | executeSql() | Return the accounts execute by sql |

### HibernateAnswerDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save an answer to database |
| 2 | findById() | Find an answer by its id |
| 3 | findByExample() | Find all answer have same feature with example |
| 4 | findByExample() | Find some answer have same feature with example |
| 5 | getAll() | Return all answer |
| 6 | update() | Update an answer |
| 7 | delete() | Delete an answer |
| 8 | getCount() | Return the number of the answer in database |
| 9 | executeSql() | Return the answer execute by sql |

### HibernateLuceneDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | luceneModel() |  |

### Sequence diagram

## core.exception Package

### C:\Users\CuHo\Desktop\Exception.pngClass diagram

***Figure 4: Class diagram Practice core.exception package***

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | CorruptedFormException | Corrupted form exception |
| 2 | EmailExpectedException | Email expected exception |
| 3 | InvalidEmailException | Invalid email exception |
| 4 | PasswordExpectedException | Password expected exception |
| 5 | PasswordIncorrectException | Password incorrect exception |
| 6 | UsernameExpectedException | Username expected exception |
| 7 | NullOrEmptyContentException | Content is null or empty exception |

### CorruptedFormException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### EmailExpectedException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### InvalidEmailException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### PasswordExpectedException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### PasswordIncorrectException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### UsernameExpectedException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### NullOrEmptyContentException Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | ERROR\_CODE | int |  | private |  |

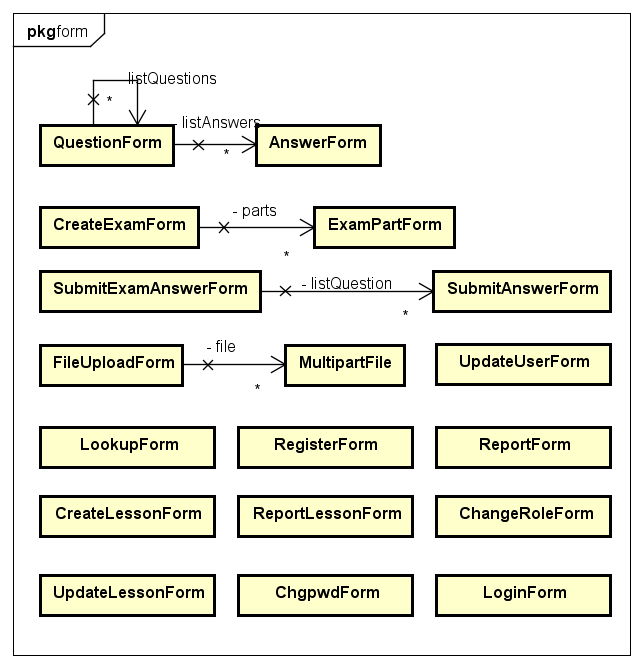
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCode() |  |

### Sequence Diagram

## core.form Package

### Class diagram



**Figure 5: Class diagram core.form package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | AnswerForm | Answer form |
| 2 | ChangeRoleForm | Change user role form |
| 3 | ChgpwdForm | Change password form |
| 4 | CreateExamForm | Create exam form |
| 5 | CreateLessonForm | Create lesson form |
| 6 | ExamPartForm |  |
| 7 | FileUploadForm | Upload file form |
| 8 | LoginForm | Login form Lookup word form |
| 9 | LookupForm | Get a question form |
| 10 | QuestionForm | Get a question form |
| 11 | RegisterForm | Register form |
| 12 | ReportForm | Report a question form |
| 13 | ReportLessonForm | Report lesson form |
| 14 | SubmitAnswerForm |  |
| 15 | SubmitExamAnswerForm | submit answer of exam |
| 16 | UpdateLessonForm | Update lesson form |
| 17 | UpdateUserForm | Update user form |

### AnswerForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | answer | String |  | private |  |
| 2 | isRight | Boolean |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ChangeRoleForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | userId | Integer |  | private |  |
| 2 | role | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ChgpwdForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | oldPassword | String |  | private |  |
| 2 | newPassword | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### CreateExamForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | courseId | Integer |  | private |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### CreateLessonForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | courseId | Integer |  | private |  |
| 2 | lessonTitle | String |  | private |  |
| 3 | description | String |  | private |  |
| 4 | vocabulary | String |  | private |  |
| 5 | grammar | String |  | private |  |
| 6 | reading | String |  | private |  |
| 7 | listening | String |  | private |  |
| 8 | practice | String |  | private |  |
| 9 | article | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ExamPartForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | skill | int |  | private |  |
| 2 | numberOfQuestion | int |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### FileUploadForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LoginForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | username | String |  | private |  |
| 2 | encryptedPassword | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LookupForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | key | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### QuestionForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionId | Integer |  | private |  |
| 2 | questionAnswerType | Integer |  | private |  |
| 3 | questionType | Integer |  | private |  |
| 4 | questionSkill | Integer |  | private |  |
| 5 | courseId | Integer |  | private |  |
| 6 | creatorId | Integer |  | private |  |
| 7 | numberOfQuestion | Integer |  | private |  |
| 8 | question | String |  | private |  |
| 9 | attachment | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### RegisterForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | username | String |  | private |  |
| 2 | password | String |  | private |  |
| 3 | email | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ReportForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | content | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ReportLessonForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | lessonID | Integer |  | private |  |
| 2 | content | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### SubmitAnswerForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionId | Integer |  | private |  |
| 2 | userAnswers | List<String> |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### SubmitExamAnswerForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | time | Long |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | questionSkill | Integer |  | private |  |
| 4 | isRedo | Boolean |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### UpdateLessonForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | lessonId | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | lessonTitle | String |  | private |  |
| 4 | description | String |  | private |  |
| 5 | vocabulary | String |  | private |  |
| 6 | grammar | String |  | private |  |
| 7 | reading | String |  | private |  |
| 8 | listening | String |  | private |  |
| 9 | practice | String |  | private |  |
| 10 | article | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### UpdateUserForm Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | firstName | String |  | private |  |
| 2 | lastName | String |  | private |  |
| 3 | dob | Long |  | private | date of birth |
| 4 | address | String |  | private |  |
| 5 | hobby | String |  | private |  |
| 6 | bio | String |  | private | about me |
| 7 | website | String |  | private |  |
| 8 | quote | String |  | private |  |

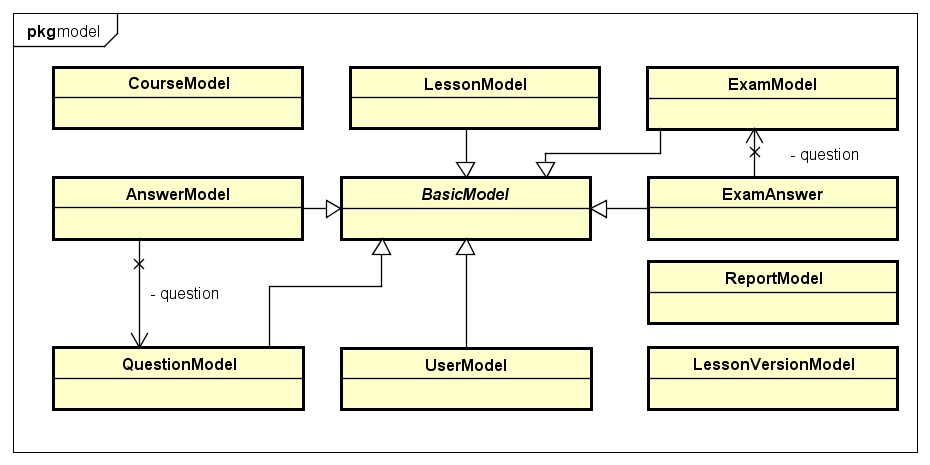
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### Sequence Diagram

## core.model package

### Class diagram



**Figure 6: Class diagram core.model package**

|  |  |  |
| --- | --- | --- |
| NNo | Class Name | Description |
| 1 | AnswerModel | answer model |
| 2 | BasicModel | basic model |
| 3 | CourseModel | course model |
| 4 | ExamAnswer | exam answer |
| 5 | ExamModel | exam model |
| 6 | LessonModel | lesson model |
| 7 | LessonVersionModel | lesson version model |
| 8 | QuestionModel | question model |
| 9 | ReportModel | report model |
| 10 | UserModel | user model |

### AnswerModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | answer | String |  | private |  |
| 2 | isRight | Boolean |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### BasicModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | createDate | Long |  | private |  |
| 3 | updateDate | Long |  | private |  |
| 4 | deleteDate | Long |  | private |  |
| 5 | deleteFlag | Boolean |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### CourseModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | name | String |  | private |  |
| 3 | description | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ExamAnswer Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionId | Integer |  | private |  |
| 2 | userAnswer | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ExamModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | userId | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | result | Double |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LessonModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | index | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | currentVersionId | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LessonVersionModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | createDate | Long |  | private |  |
| 3 | updateDate | Long |  | private |  |
| 4 | lessonId | Integer |  | private |  |
| 5 | version | Integer |  | private |  |
| 6 | state | Integer |  | private |  |
| 7 | title | String |  | private |  |
| 8 | description | String |  | private |  |
| 9 | creatorId | Integer |  | private |  |
| 10 | vocabulary | String |  | private |  |
| 11 | grammar | String |  | private |  |
| 12 | reading | String |  | private |  |
| 13 | listening | String |  |  |  |
| 14 | practice | String |  |  |  |
| 15 | article | String |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### QuestionModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionCode | Integer |  | private |  |
| 2 | creatorId | Integer |  | private |  |
| 3 | questionAnswerType | Integer |  | private |  |
| 4 | questionType | Integer |  | private |  |
| 5 | questionSkill | Integer |  | private |  |
| 6 | numberOfQuestion | Integer |  | private |  |
| 7 | courseId | Integer |  | private |  |
| 8 | question | String |  | private |  |
| 9 | content | List<Integer> |  | private |  |
| 10 | state | Integer |  | private |  |
| 11 | attachment | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ReportModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | createDate | Long |  | private |  |
| 3 | deleteDate | Long |  | private |  |
| 4 | deleteFlag | Long |  | private |  |
| 5 | senderId | Integer |  | private |  |
| 6 | receiverId | Integer |  | private |  |
| 7 | readFlag | Boolean |  | private |  |
| 8 | content | String |  | private |  |
| 9 | lessonId | Integer |  | private |  |
| 10 | questionId | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### UserModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | email | String |  | private |  |
| 2 | userName | String |  | private |  |
| 3 | encryptedPassword | String |  | private |  |
| 4 | firstName | String |  | private |  |
| 5 | lastName | String |  | private |  |
| 6 | dob | Long |  | private |  |
| 7 | joinDate | Long |  | private |  |
| 8 | address | String |  | private |  |
| 9 | role | Integer |  | private |  |
| 10 | hobby | String |  | private |  |
| 11 | bio | String |  | private |  |
| 12 | website | String |  | private |  |
| 13 | quote | String |  |  |  |
| 14 | isBanned | Boolean |  |  |  |

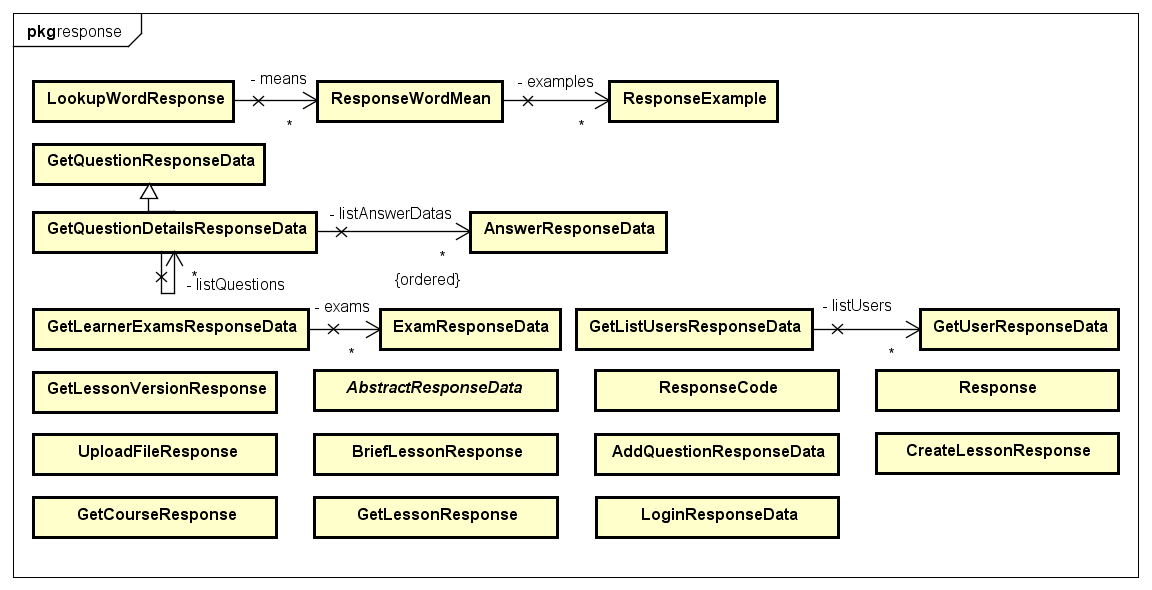
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### Sequence Diagram

## core.response Package

### Class diagram



**Figure 7: Class diagram core.response package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | AddQuestionResponseData | Add question response data |
| 2 | AnswerResponseData | Answer response data |
| 3 | BriefLessonResponse | Brief lesson response |
| 4 | CreateLessonResponse | Create lesson response |
| 5 | ExamResponseData | Exam response data |
| 6 | GetCourseResponse | Get course response |
| 7 | GetLearnerExamsResponseData | Get learner exams response data |
| 8 | GetLessonResponse | Get lesson response |
| 9 | GetLessonVersionResponse | Get lesson version response |
| 10 | GetListUsersResponseData | Get list users response data |
| 11 | GetQuestionDetailsResponseData | Get question details response data |
| 12 | GetQuestionResponseData | Get question response data |
| 13 | GetUserResponseData | Get user response data |
| 14 | LoginResponseData | Login response data |
| 15 | LookupWordResponse | Lookup word response |
| 16 | Response | Response |
| 17 | ResponseCode | Response code |
| 18 | ResponseExample | Response example |
| 19 | ResponseWordMean | Response word mean |
| 20 | UploadFileResponse | Upload file response |

### AddQuestionResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionId | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### AnswerResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | answer | String |  | private |  |
| 2 | isRight | Boolean |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### BriefLessonResponse Class

#### Attributes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Attribute | Type | Note | Description |
| 1 | lessonId | Integer | private |  |
| 2 | title | String | private |  |
| 3 | state | Integer | private |  |
| 4 | courseId | Integer | private |  |
| 5 | version | Integer | private |  |
| 6 | description | String | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### CreateLessonResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | lessonId | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | version | Integer |  | private |  |
| 4 | lessonTitle | String |  | private |  |
| 5 | description | String |  | private |  |
| 6 | creatorId | Integer |  | private |  |
| 7 | createDate | Long |  | private |  |
| 8 | vocabulary | String |  | private |  |
| 9 | grammar | String |  | private |  |
| 10 | reading | String |  | private |  |
| 11 | listening | String |  | private |  |
| 12 | practice | String |  | private |  |
| 13 | article | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ExamResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | examId | Integer |  | private |  |
| 2 | result | Double |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetCourseResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | name | String |  | private |  |
| 2 | description | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetLearnerExamsResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | exams | ExamResponseData |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetLessonResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | lessonId | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | lessonTitle | String |  | private |  |
| 4 | description | String |  | private |  |
| 5 | updateDate | Long |  | private |  |
| 6 | state | Integer |  | private |  |
| 7 | version | Integer |  | private |  |
| 8 | vocabulary | String |  | private |  |
| 9 | grammar | String |  | private |  |
| 10 | conversation | String |  | private |  |
| 11 | listening | String |  | private |  |
| 12 | practice | String |  | private |  |
| 13 | reading | String |  | private |  |
| 14 | previousLessonId | Integer |  | private |  |
| 15 | nextLessonId | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetLessonVersionResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | lessonId | Integer |  | private |  |
| 2 | courseId | Integer |  | private |  |
| 3 | version | Integer |  | private |  |
| 4 | lessonTitle | String |  | private |  |
| 5 | description | String |  | private |  |
| 6 | creatorId | Integer |  | private |  |
| 7 | createDate | Long |  | private |  |
| 8 | updateDate | Long |  | private |  |
| 9 | vocabulary | String |  | private |  |
| 10 | grammar | String |  | private |  |
| 11 | reading | String |  | private |  |
| 12 | listening | String |  | private |  |
| 13 | practice | String |  | private |  |
| 14 | article | String |  | private |  |
| 15 | listVersions | List< Integer> |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetListUsersResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | listUsers | List<GetUserResponseData> |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetQuestionDetailsResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | numberOfQuestion | Integer |  | private |  |
| 2 | attachment | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetQuestionResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | questionId | Integer |  | private |  |
| 2 | questionCode | Integer |  | private |  |
| 3 | questionAnswerType | Integer |  | private |  |
| 4 | questionType | Integer |  | private |  |
| 5 | questionSkill | Integer |  | private |  |
| 6 | courseId | Integer |  | private |  |
| 7 | question | String |  | private |  |
| 8 | state | Integer |  | private |  |
| 9 | createDate | Long |  | private |  |
| 10 | updateDate | Long |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### GetUserResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | email | String |  | private |  |
| 2 | userName | String |  | private |  |
| 3 | firstName | String |  | private |  |
| 4 | lastName | String |  | private |  |
| 5 | dob | Long |  | private |  |
| 6 | joinDate | Long |  | private |  |
| 7 | address | String |  | private |  |
| 8 | role | Integer |  | private |  |
| 9 | hobby | String |  | private |  |
| 10 | bio | String |  | private |  |
| 11 | website | String |  | private |  |
| 12 | quote | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LoginResponseData Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | role | Integer |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### LookupWordResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | word | String |  | private |  |
| 2 | means | List<ResponseWordMean> |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### Response Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | code | Integer |  | private |  |
| 2 | data | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ResponseCode Class

#### Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| No | Attribute | Type | Value |
| 1. 1 | SUCCESS | int | 200 |
| 1. 2 | CREATED | int | 201 |
| 1. 3 | FOUND | int | 302 |
| 1. 3 | BAD\_REQUEST | int | 400 |
|  | UNAUTHORIZED | int | 401 |
|  | PERMISSION\_DENIED | int | 403 |
|  | REQUEST\_TIMEOUT | int | 408 |
|  | INVALID\_EMAIL | int | 410 |
|  | DUPLICATED\_EMAIL | int | 411 |
|  | EMAIL\_NOT\_FOUND | int | 412 |
|  | DUPLICATED\_USERNAME | int | 413 |
|  | CORRUPTED\_FORM | int | 460 |
|  | USERNAME\_EXPECTED | int | 461 |
|  | PASSWORD\_EXPECTED | int | 462 |
|  | EMAIL\_EXPECTED | int | 463 |
|  | INVALID\_PASSWORD | int | 420 |
|  | INCORRECT\_PASSWORD | int | 421 |
|  | USER\_NOT\_FOUND | int | 430 |
|  | USER\_NOT\_ALLOW | int | 431 |
|  | USER\_INACTIVE | int | 432 |
|  | USER\_EXAMS\_NOT\_FOUND | int | 433 |
|  | USERNAME\_PASSWORD\_NOT\_MATCH | int | 470 |
|  | PASSWORD\_INCORRECT | int | 471 |
|  | QUESTION\_NOT\_FOUND | int | 440 |
|  | INTERNAL\_SERVER\_ERROR | int | 500 |
|  | UNSUPPORTED\_API | int | 600 |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ResponseExample Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | vi | String |  | private |  |
| 2 | ja | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### ResponseWordMean Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | kind | String |  | private |  |
| 2 | mean | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### UploadFileResponse Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | link | String |  | private |  |

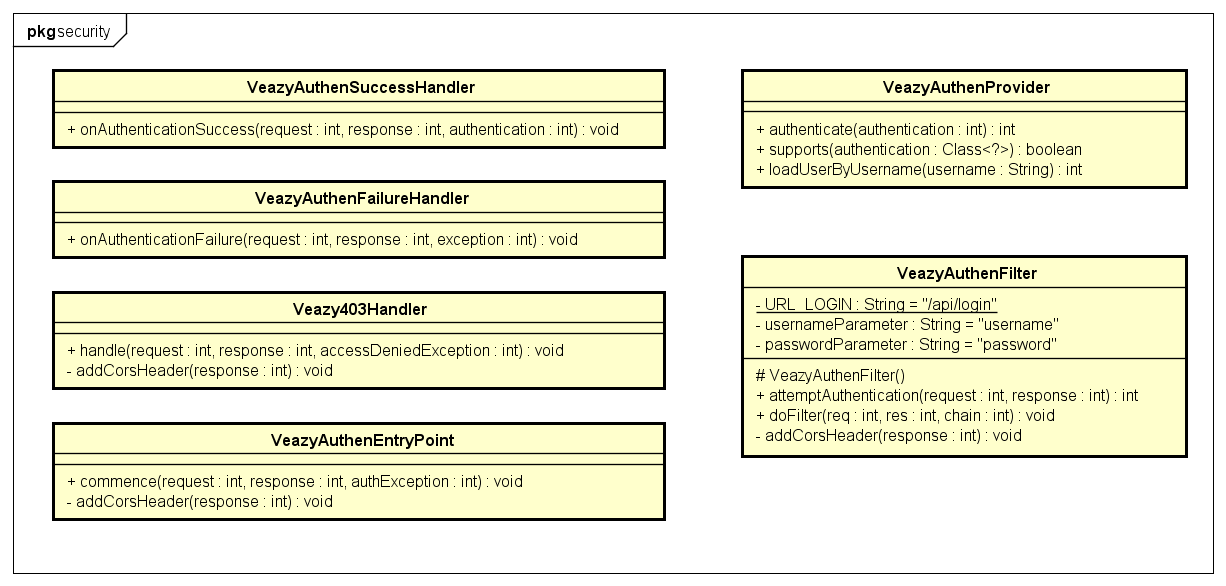
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### Sequence Diagram

## core.security package

### Class diagram



**Figure 8: Class diagram core.security package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | Veazy403Handler |  |
| 2 | VeazyAuthenEntryPoint |  |
| 3 | VeazyAuthenFailureHandler |  |
| 4 | VeazyAuthenFilter |  |
| 5 | VeazyAuthenProvider |  |
| 6 | VeazyAuthenSuccessHandler |  |

### Veazy403Handler Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | handle() |  |

### VeazyAuthenEntryPoint Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | commence() |  |

### VeazyAuthenFailureHandler Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | onAuthenticationFailure() |  |

### VeazyAuthenFilter Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | URL\_LOGIN | String |  | private |  |
| 2 | usernameParameter | String |  | private |  |
| 3 | passwordParameter | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | attemptAuthentication() |  |
| 2 | doFilter() |  |
| 3 | addCorsHeader() |  |

### VeazyAuthenProvider Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | authenticate() |  |
| 2 | supports() |  |
| 3 | loadUserByUsername() |  |

### VeazyAuthenSuccessHandler Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

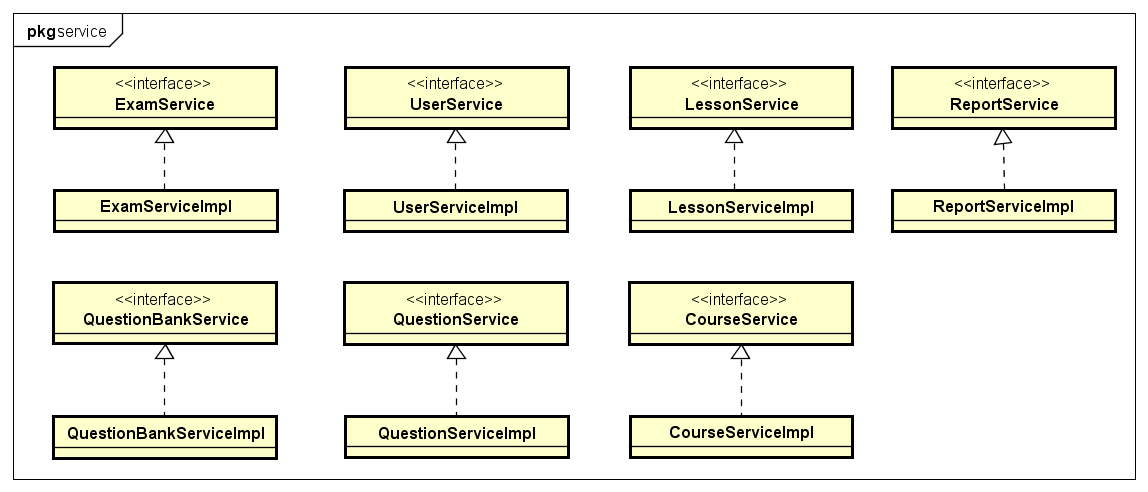
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | onAuthenticationSuccess() |  |

### Sequence Diagram

## core.service Package

### Class diagram



**Figure 9: Class diagram core.service package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | CourseServiceImpl | Contain service for course API |
| 2 | ExamServiceImpl | Contain service for exam API |
| 3 | LessonServiceImpl | Contain service for lesson API |
| 4 | QuestionBankServiceImpl | Contain service for question bank API |
| 5 | QuestionServiceImpl | Contain service for question API |
| 6 | ReportServiceImpl | Contain service for report API |
| 7 | UserServiceImpl | Contain service for account API |

### CourseServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | getCourses() |  |

### ExamServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | findLearnerExams() |  |
| 2 | saveExam() |  |

### LessonServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | createLesson() |  |
| 2 | getLessonVersion() |  |
| 3 | updateLesson() |  |
| 4 | publishLessonVersion() |  |
| 5 | reportLesson() |  |
| 6 | getLessonsOfCourse() |  |
| 7 | getLesson() |  |
| 8 | deleteLesson() |  |
| 9 | getAllLesson() |  |

### QuestionBankServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | generateTest() |  |
| 2 | getSingleQuestion() |  |

### QuestionServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | saveQuestion() |  |
| 2 | findQuestionById() |  |
| 3 | findQuestionByCode() |  |
| 4 | findAllQuestion() |  |
| 5 | update() |  |
| 6 | delete() |  |
| 7 | size() |  |

### ReportServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | saveReport() |  |
| 2 | getReport() |  |
| 3 | getAllReports() |  |
| 4 | readReport() |  |
| 5 | deleteReport() |  |

### UserServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | saveUser() |  |
| 2 | saveUser() |  |
| 3 | findUserById() |  |
| 4 | findUserByEmail() |  |
| 5 | findUserByUsername() |  |
| 6 | findAllUser() |  |
| 7 | update() |  |
| 8 | update() |  |
| 9 | delete() |  |
| 10 | deleteUsers() |  |
| 11 | size() |  |
| 12 | changeUserRoll() |  |
| 13 | changePassword() |  |

## dictionary.controller Package

### D:\Documents\GitHub\DATN\201605JS01\WIP\Users\TungDT\Class Diagram\Dict Controller.pngClass diagram

**Figure 10: Class diagram dictionary.controller package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | DictController | Control lookup word API |

### DictController Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

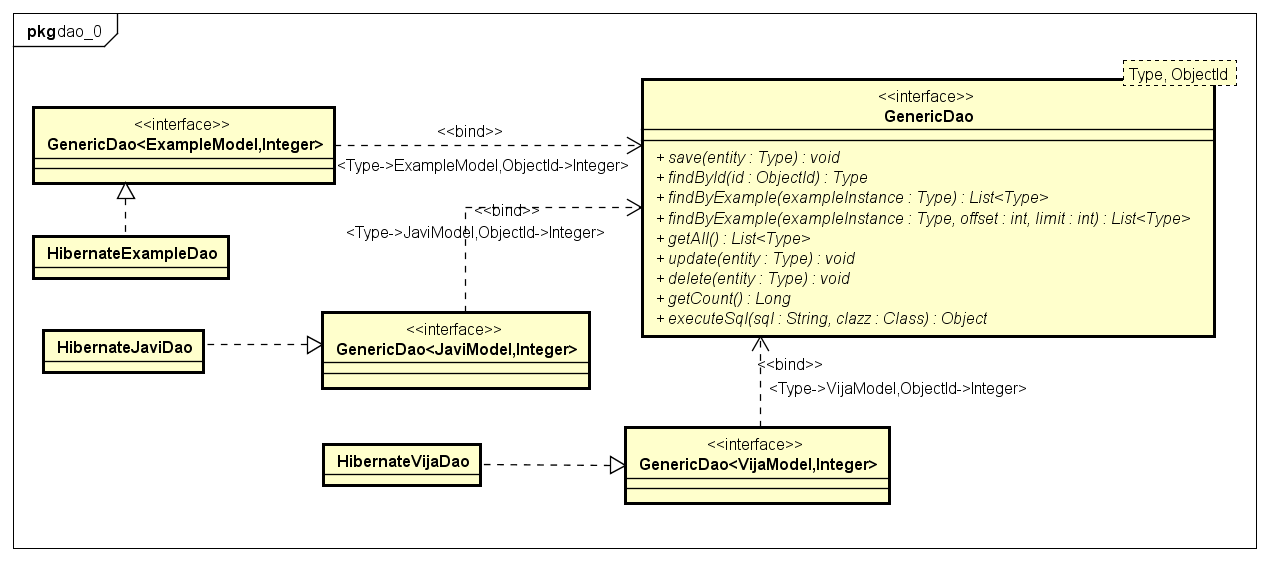
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | lookupJavi() | Look up word at Japanese Vietnamese dictionary |
| 2 | lookupVija() | Look up word at Vietnamese Japanese dictionary |

### Sequence Diagram

## dictionary.dao Package

### Class diagram



**Figure 11: Class diagram dictionary.dao package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | HibernateExampleDao | Provide method to access the example in database |
| 2 | HibernateJaviDao | Provide method to access the Japanese Vietnamese dictionary in database |
| 3 | HibernateVijaDao | Provide method to access the Vietnamese Japanese dictionary in database |

### HibernateExampleDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save an example to database |
| 2 | findById() | Find an example by its id |
| 3 | findByExample() | Find all example have same feature with example |
| 4 | findByExample() | Find some example have same feature with example |
| 5 | getAll() | Return all example |
| 6 | update() | Update an example |
| 7 | delete() | Delete an example |
| 8 | getCount() | Return the number of the example in database |
| 9 | executeSql() | Return the examples execute by sql |

### HibernateJaviDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a Japanese Vietnamese vocabulary to database |
| 2 | findById() | Find a Japanese Vietnamese vocabulary by its id |
| 3 | findByExample() | Find all Japanese Vietnamese vocabulary have same feature with example |
| 4 | findByExample() | Find some Japanese Vietnamese vocabulary have same feature with example |
| 5 | getAll() | Return all Japanese Vietnamese vocabulary |
| 6 | update() | Update a Japanese Vietnamese vocabulary |
| 7 | delete() | Delete a Japanese Vietnamese vocabulary |
| 8 | getCount() | Return the number of the Japanese Vietnamese vocabulary in database |
| 9 | executeSql() | Return the Japanese Vietnamese vocabulary execute by sql |

### HibernateVijaDao Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

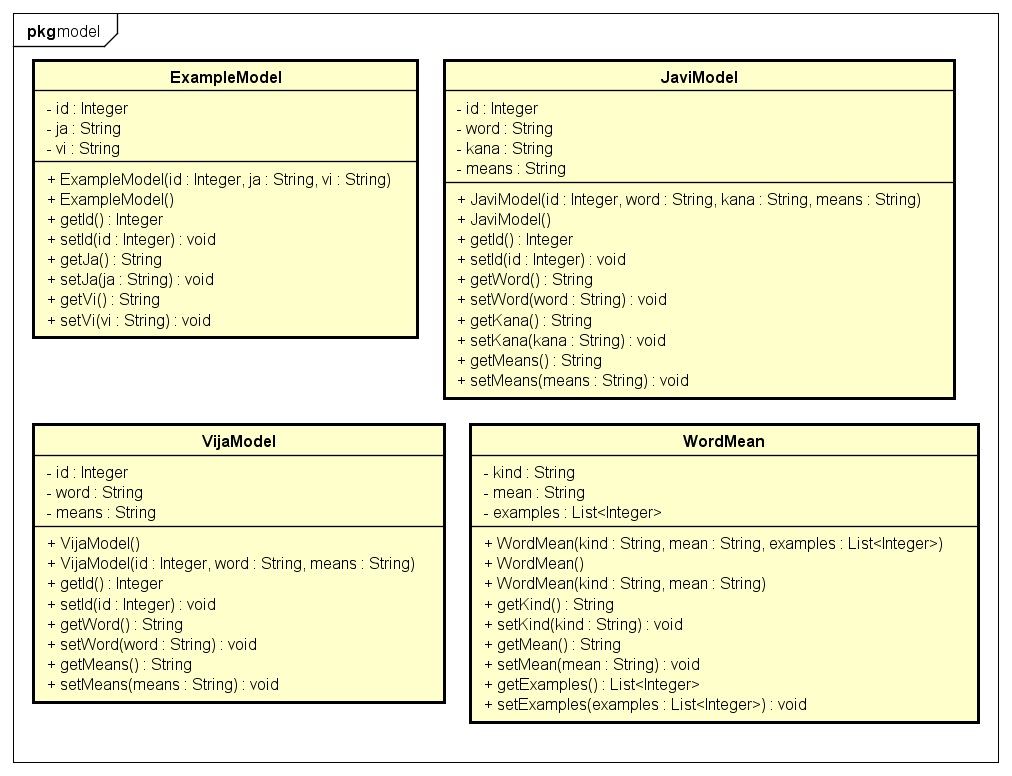
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | save() | Save a Vietnamese Japanese vocabulary to database |
| 2 | findById() | Find a Vietnamese Japanese vocabulary by its id |
| 3 | findByExample() | Find all Vietnamese Japanese vocabulary have same feature with example |
| 4 | findByExample() | Find some Vietnamese Japanese vocabulary have same feature with example |
| 5 | getAll() | Return all Vietnamese Japanese vocabulary |
| 6 | update() | Update a Vietnamese Japanese vocabulary |
| 7 | delete() | Delete a Vietnamese Japanese vocabulary |
| 8 | getCount() | Return the number of the Vietnamese Japanese vocabulary in database |
| 9 | executeSql() | Return the Vietnamese Japanese vocabulary execute by sql |

### Sequence Diagram

## dictionary.model package

### Class diagram



**Figure 7: Class diagram dictionary.model package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | ExampleModel | Example Model |
| 2 | JaviModel | Japanese Vietnamese word Model |
| 3 | VijaModel | Vietnamese Japanese word Model |
| 4 | WordMean | Word Meaning |

### ExampleModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | ja | String |  | private |  |
| 3 | vi | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### JaviModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | word | String |  | private |  |
| 3 | kana | String |  | private |  |
| 4 | means | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### VijaModel Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | id | Integer |  | private |  |
| 2 | word | String |  | private |  |
| 3 | means | String |  | private |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### WordMean Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 | kind | String |  | private |  |
| 2 | mean | String |  | private |  |
| 3 | examples | List<Integer> |  | private |  |

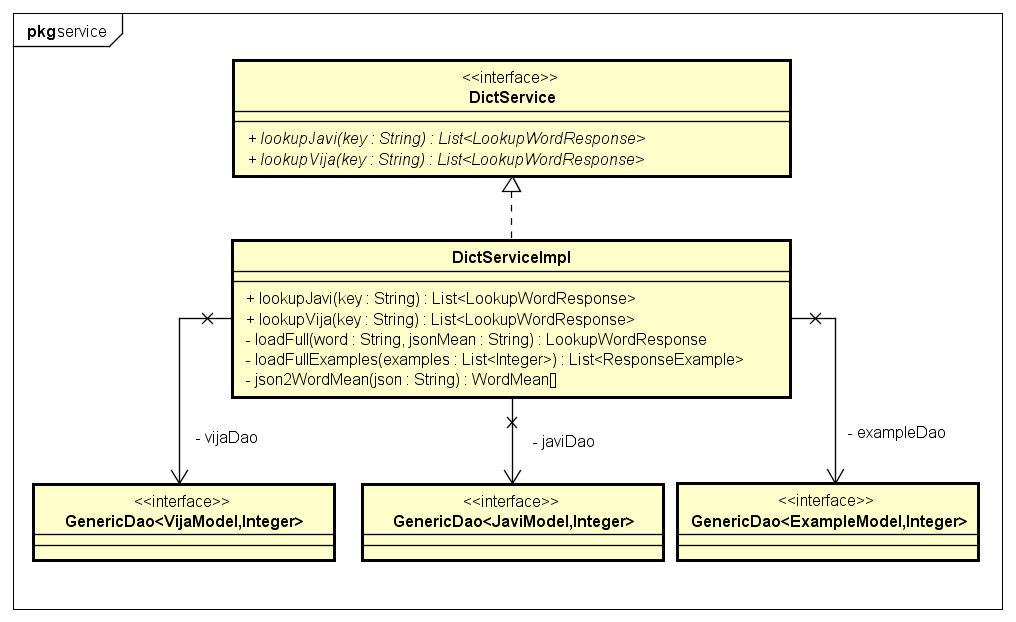
#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 |  |  |

### Sequence Diagram

## dictionary.service package

### Class diagram



**Figure 7: Class diagram dictionary.service package**

|  |  |  |
| --- | --- | --- |
| No | Class Name | Description |
| 1 | DictServiceImpl | contain service for dictionary API |

### DictServiceImpl Class

#### Attributes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Attribute | Type | Default | Note | Description |
| 1 |  |  |  |  |  |

#### Methods

|  |  |  |
| --- | --- | --- |
| No | Method | Description |
| 1 | lookupJavi() | look up word at Japanese Vietnamese dictionary |
| 2 | lookupVija() | look up word at Vietnamese Japanese dictionary |
| 3 | loadFull() | load a word with its word mean form database |
| 4 | loadFullExamples() | load a word mean with its example form database |
| 5 | json2WordMean() | convert json to WordMean object |

### Sequence Diagram

# MVC model



***Figure 6: MVC Model***