A picture containing shape

Description automatically generated

**ITO Quiz**

**Spring Boot Assignment**

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Version 1.0

Build an ITO online Exam Portal which will be helpful for smooth the assessment process.

Note: In is Assessment you must generate REST APIs for the following operations.

There will be following Module in the Application

* + Admin Module
    - Questions Set CRUD Operation.
    - Evaluate
  + User Module
    - Generate Exam ID
    - Assessment.

Database Tables:

Question (question\_id, question, option1, option2, option3, option4, answer)

Answer (id, candidate\_id, question\_id, answer)

Candidate (candidate\_id, name, emailId, isStarted, isSubmit)

Admin:

Admin can create, read, update, and delete questions.

Create Question:

* Admin will take following input for create a question:
  + String question
  + List<String> options (4 Options)
  + Integer answer //index of correct answer based on options. User will input index b/w 1 to 4
* User can insert one and more than one question in single POST call.
* For Generate the Id use the sequence generator.
* If question created successfully then return success message “Question <id> generated successfully”
* If failed to generate than return failure message “Failed to Generate Question”

Read Questions List:

* Admin can get all the list of question which are stored in database.
* If Questions are available than return the JSON array list for all the question.
* If no question available in database, then return Message “No Question available”.

Read By Id:

* Admin can read the question by auto generate ID.
* If data is available than return the JSON object of question
* If ID is not available in database return message “Invalid Question Number”

Update Question:

* Admin will update the question by ID
* Admin will take following input for update a question:
  + String question
  + List<String> options (4 Options)
  + Integer answer (index of correct answer based on options. User will input index b/w 1 to 4)
* If update successfully, then return message “Updated question number <id> successfully.”
* If failed, then return message “Failed to Update question number <id>”
* If ID is not available in database return message “Invalid Question Number”

Delete Question:

* User can delete one and more then question from database.
* User will take comma separated Question Id if want to delete more than one.
* If all the question deleted the return message “Deleted selected message successfully”
* If All are the invalid ids than return “Failed to delete selected message”
* If few are valid ids return “<list of delete question id with comma separated> are deleted successfully and failed to delete “<list of failed question id with comma separated>.

Evaluate:

Evaluation will be based on CandidateId

* Check if CandidateId is present in candidate table.
  + If Yes, Process to Next
  + Else throw the exception and Send Message “Candidate Id doesn’t exist”.

Generate the Result

* Fetch all the Answer based on candidate Id
* Compare all the question number and answer index with stored question in DB.
* If more than 6 answer are correct, then return the message:
  + <Candidate ID> : <Candidate Name> is selected for next Round.
  + Correct Answer: Count
  + Incorrect Answer: Count
* Else return the message
  + <Candidate ID>: <Candidate Name> is rejected in this Round
  + Correct Answer: Count
  + Incorrect Answer: Count

Candidate:

Assessment:

Get the Candidate Id:

* Candidate will take input as Name and Emailed and return the unique Candidate Id
  1. String: Name
  2. String: Email Id
* IsStarted and IsSubmit Value will be false when exam id will generate.
* Candidate Id will be auto generated sequence value.
* If emailId available in database than return message “Email Id exist, please enter different email id.

Get the question Set:

Candidate will make a rest call using this Candidate Id (Request Param) and get the question set.

* Check if Candidate Id is present in candidate table.
  + If Yes, Process to Next
  + Else throw the exception and Send Message “Candidate Id doesn’t exist”.
* When receive the request then based on CandidateId set the isStarted value as true. And return random list of 10 questions.
* In response return only question and options.
* If isStarted value is already true for the received CandidateId then return the message “Exam Assessment Running.”

Submit Answer Sheet:

* + - Candidate can submit the answer sheet using the generated Candidate Id
    - Send Candidate Id in (Request Param) and send the JSON body
    - Which contain list of Object (Question Number and Answer Option Index)
    - Check if Candidate Id is present in candidate table.
      * If Yes, Process to Next
      * Else throw the exception and Send Message “<Candidate Id> doesn’t exist”
    - Check If isSubmit is true for that Candidate Id return the message “Answer already submitted” and don’t save any data
    - Else Store all the answer in Answer table with CandidateId.
    - Set IsSubmit as true.
    - Generate the result and send the response to Candidate
      * Compare all the question number and answer index with stored question in DB.
      * If more than 6 answer are correct, then return the message: Selected for the next Round.
      * Else return the message “Sorry you are not selected. Better luck next time”.