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# TEAM15A AMANDINE SOFTWARE REQUIREMENTS SPECIFICATION

for

Toohak

Version 1.0

November 3, 2024

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# 1 Elicitation

Name: Zihao Wu

Email: 2134516395@qq.com

Question:

1. What problems do you think you will encounter when visiting the homepage?  
My homepage cannot view my personal honors, such as medals I have received or my history of answering questions
2. Have you encountered any problems in understanding or evaluating your performance results after completing the test?  
Unable to view one's own accuracy and ranking.
3. What challenges or setbacks have you encountered while using Toohak?  
No prompts to help players complete the problem.
4. For users only, can you quickly understand how to use the software?  
I think I can because I have played Kahoot or similar testing software before, so I can understand how to use it.

Name: Fengshuo Zhang

Email: 1141807622@qq.com

Question:

1. What problems do you think you will encounter when visiting the homepage?  
I can't know which level I'm at. And what levels are there respectively.
2. Have you encountered any problems in understanding or evaluating your performance results after completing the test?  
It's unfair when two people have the same score and one of them ranks higher than the other.
3. What challenges or setbacks have you encountered while using Toohak?  
None.
4. For users only, can you quickly understand how to use the software?  
I feel like I'm not very good because I rarely use testing software. I prefer hand-writing, and I hope this software can be simpler and clearer.

## 2 Analysis & Specification - Use Cases

### 2.1 Requirement - Award badge

#### 2.1.1 User stories

As an admin, I want a proper feedback mechanism so that I can boost players' confidence on continuous learning and increase their engagement.

#### 2.1.2 Acceptance Criteria

- Badge will be showed in the end of a quiz session.
- Different badge for different kind of players.
- "A+ students" badge for the first place.
- "On a roll" badge for the second place.
- "Perfect engagement" badge for students who attempt all the questions.
- One player can obtain more than one badges.

#### 2.1.3 Use cases

- **Use Case:** Award badges to player.
- **Goal in context:** When player reach some specific achievements, badges will be sent to player at the end of the quiz session.
- **Scope:** When the quiz session ends, system will send badges to player who meet some criteria.
- **Preconditions:** Quiz session is in FINAL\_RESULT state. Player is either in first place, second place, attempt all the questions.
- **Success End Condition:** Quiz session is in FINAL\_RESULT state, player meet the criteria.
- **Failed End Condition:** Quiz session is not in FINAL\_RESULT state, player didn't meet the criteria.

- **Primary Actor:** System
- **Trigger:** Quiz session is in FINAL\_RESULT state, player meet the criteria to earn a badge.
- **Main Success Scenario:** When quiz session is in FINAL\_RESULT state, system will give badge to each players who meet specific criteria. If player is the first place, then system award player "A+ students", if player is in second place, then system award player "On a roll", if player attempt all the questions, then system award player "Perfect engagement".

## 2.2 Requirement - Hint

### 2.2.1 User stories

As a player, I want a hint when I am stuck in the question so that I can increase the chance I answer the question correct.

### 2.2.2 Acceptance Criteria

- Hint will be used during QUESTION\_OPEN state.
- Hint can be used if player left enough chance to view hint.
- Hint will not be visible when player didn't click "hint" icon.
- Hint can be view when player clicked "hint" icon.
- Player's chance to view hint decrease by 1 after view hint.

### 2.2.3 Use cases

- **Use Case:** Player view hint during an active quiz session.
- **Goal in context:** When player click "hint" icon, hint will be shown to player.
- **Scope:** When create a quiz, admin decide how many chance player can view hint. When create questions inside quiz, admin decide whether question have hint or not. During the QUESTION\_OPEN state, player can view hint by clicking the "hint" icon if player's chance to view hint is greater than 0. After view the hint, player's chance to view hint decrease 1.
- **Preconditions:** Quiz session is in QUESTION\_OPEN state, player's chance to view hint is greater than 0.
- **Success End Condition:** Quiz session is in QUESTION\_OPEN state and player's chance to view hint is greater than 0.

- **Failed End Condition:** Quiz session is not in QUESTION\_OPEN state or player's chance to view hint is not strictly greater than 0.
- **Primary Actor:** Player
- **Trigger:** Player click the "hint" icon.
- **Main Success Scenario:** When quiz session is in QUESTION\_OPEN state, player's chance to view hint is greater than 0. Player click the "hint" icon, hint are visible to player, after player saw the hint, player's chance to view hint decrease by 1.

## 2.3 Requirement - Personal analysis report

### 2.3.1 User stories

As a admin, I want show personal analysis report to player so that player will have an overview of their performance and engagement.

### 2.3.2 Acceptance Criteria

- Personal analysis report will be shown automatically when quiz session is in FINAL\_RESULT state
- Personal analysis report will varies from players.
- Personal analysis report will include correct ratio, attempt ratio, players' rank.

### 2.3.3 Use cases

- **Use Case:** System show personal analysis report in FINAL\_RESULT state.
- **Goal in context:** When quiz session is in FINAL\_RESULT state, system show a personal analysis report to each player.
- **Scope:** When quiz session is in FINAL\_RESULT state, system automatically give each player a personal analysis report including correct ratio, attempt ratio and players' rank.
- **Preconditions** Quiz session is in FINAL\_RESULT state.
- **Success End Condition** Quiz session is in FINAL\_RESULT state, system show player personal analysis report.
- **Failed End Condition** Quiz session is not in FINAL\_RESULT state.
- **Primary Actor:** System.

- **Trigger:** Quiz session goes into FINAL\_RESULT state.
- **Main Success Scenario:** When quiz session is in FINAL\_RESULT state, system automatically shows player a personal analysis report.

## 3 Validation

**Zihao Wu:** I think the solutions you mentioned can solve most of the problems I have been thinking about. Hint can help me quickly solve problems and I can also check my personal badges or history records. However, I find it difficult to understand the percentage of problem attempts. I would like to know which attempt was wrong and the reason for it.

**Fengshuo Zhang:** For the issue of ranking, I think it has been solved very well because with the existence of hints, the way of discrimination can be increased, making the entire ranking more fair. For the medal level, it can let me know what stage I am in and have a goal to strive for.

# 4 Interface Design

## Interface: Routes

Name & Description	HTTP Method	Data Types	Errors
<code>/v1/player/:playerid/badges</code> Give badges to player	GET	<b>Return Object</b> {badges}	Return {error} with status code 400 when any of: <ul style="list-style-type: none"><li>If player Id does not exist.</li><li>Session is not in FINAL_RESULT state</li></ul>
<code>/v3/admin/quiz</code> Create a new quiz.	POST	<b>Header Parameters</b> {token}  <b>Body Parameters</b> {name, description, chanceToViewHint}  <b>Return Object</b> {quizId}	Return {error} with status code 401 when any of: <ul style="list-style-type: none"><li>Invalid token</li></ul> Return {error} with status code 400 when any of: <ul style="list-style-type: none"><li>Invalid name</li><li>Invalid description</li><li>chanceToViewHint &lt; 0</li></ul>
<code>/v3/admin/quiz/:quizid/question</code> Create a quiz question.	POST	<b>Header Parameters</b> {token}  <b>Body Parameters</b> {questionBody}  <b>Return Object</b> {questionId}	Return {error} with status code 401 when any of: <ul style="list-style-type: none"><li>Invalid token</li></ul> Return {error} with status code 403 when any of: <ul style="list-style-type: none"><li>Valid token, but user is not an owner of this quiz or quiz doesn't exist</li></ul> Return {error} with status code 400 when any of: <ul style="list-style-type: none"><li>Invalid question</li><li>Invalid thumbnailUrl</li><li>No correct answers</li></ul>
<code>/v1/player/:playerid/question/:questionposition/hint</code> Player view hint of one question.	GET	<b>Return Object</b> {hint}	Return {error} with status code 400 when <ul style="list-style-type: none"><li>PlayerId does not exist.</li><li>Question position is not valid for the session this player is in.</li><li>Session is not in QUESTION_OPEN state</li><li>Session is not currently on this question</li></ul>
<code>/v1/player/:playerid/report</code> Show personal analysis report to player.	GET	<b>Return Object</b> {report}	Return {error} with status code 400 when <ul style="list-style-type: none"><li>Player Id does not exist.</li><li>Session is not in FINAL_RESULTS state</li></ul>

Figure 4.1: Interface - Route



## Interface: Data Types

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Variable Name	Type
is exactly <b>badges</b>	<code>string</code> , either "A+ students", "On a roll", or "Perfect engagement"
is exactly <b>chanceToViewHint</b>	<code>number</code>
is exactly <b>questionBody</b>	<code>object</code> , with extra field "hint"
is exactly <b>hint</b>	<code>string</code>
is exactly <b>report</b>	<code>object</code> , including correct ratio, attempt ratio, player's rank

Figure 4.2: Interface - Data Type

## 5 Conceptual Modelling - State Diagrams

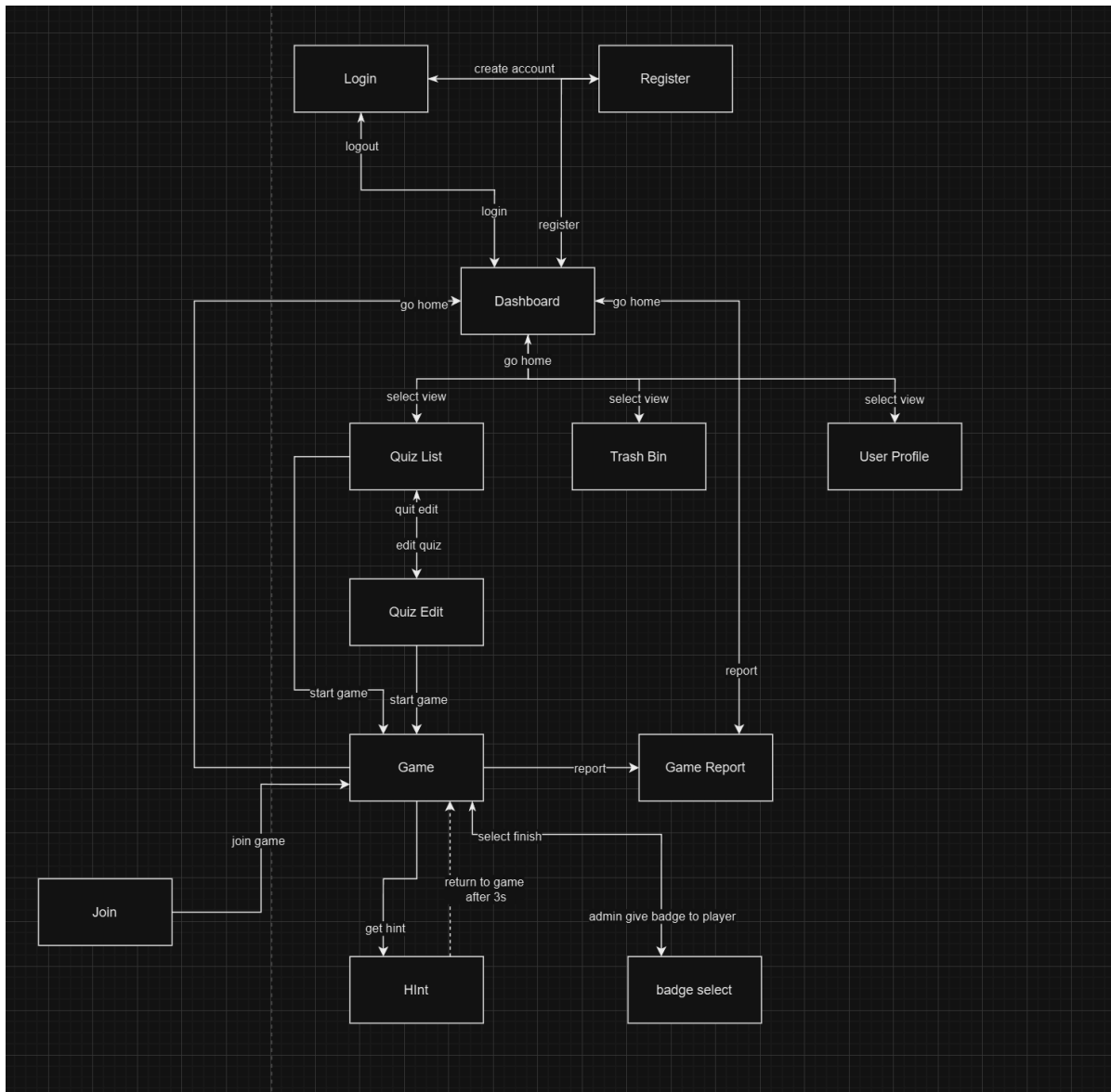


Figure 5.1: State Diagram