

# Code Review

Team Number: 13

## Team Members:

1. Aaron Augustine (20171207)
2. Sireesha Vakada (20171137)
3. Visvesh Subramanian (20171133)
4. Zubair Abid (20171076)

## Zubair:

# Number of lines of code reviewed: 332  
# Classes: 0  
# Methods: 12  
# Issues Identified: 3  
# Code smells Identified: 9

## GO:

### Issue #1

|                          |   |
|--------------------------|---|
| File                     | API.go  |
| Class                    | -   |
| Method                   | CreateQuiz  |
| Short Description        | User can create a quiz with a valid answer outside of available options |
| Suggestions to fix issue | Enforce constraints on the Quiz/Question creation API                   |

### Issue #2

|        |            |
|--------|------------|
| File   | API.go     |
| Class  | -          |
| Method | CreateQuiz |

|                          |   |
|--------------------------|---|
| Short Description        | Cannot edit any quizzes once made                           |
| Suggestions to fix issue | Separate out Questions at the API level and add editability |

### Issue #3

|                          |   |
|--------------------------|---|
| File                     | API.go  |
| Class                    | -   |
| Method                   | CreateQuiz  |
| Short Description        | Questions are not directly accessible via API, despite database design suggesting otherwise |
| Suggestions to fix issue | Fit the API to model better   |

### Code Smell #1

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | -   |
| Short Description             | exported type struct should have comment or be unexported |
| Suggestions to fix Code Smell | Add comments before defining each struct                  |

### Code Smell #2

|                               |  |
|-------------------------------|--|
| Class                         | -  |
| Method                        | All of them  |
| Short Description             | Every function that is exported should have an explaining comment or be unexported |
| Suggestions to fix Code Smell | Add comments before defining each function   |

### Code Smell #3

|                               |  |
|-------------------------------|--|
| Class                         | -  |
| Method                        | -  |
| Short Description             | Redundant Tables in the Database   |
| Suggestions to fix Code Smell | Streamline database design, use SQL queries for each view instead of separate tables |

### Code Smell #4

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | DeleteQuiz, QuizAnswer, DeleteUser                              |
| Short Description             | Leftover Debug statements                                       |
| Suggestions to fix Code Smell | Remove all <code>fmt.Println()</code> lines not printing errors |

### Code Smell #5

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | -   |
| Short Description             | No/minimal comments (other than those provided by default template) |
| Suggestions to fix Code Smell | Add Explanatory comments to code to improve comprehensibility       |

#### Code Smell #6

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | All   |
| Short Description             | Not adhering to naming conventions<br>(Improper usage of CamelCase) |
| Suggestions to fix Code Smell | Change QuizId to QuizID   |

#### Code Smell #7

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | -   |
| Short Description             | Poor code style   |
| Suggestions to fix Code Smell | Add lines in between functions, align<br>brackets, or use govet |

#### Code Smell #8

|                               |                                |
|-------------------------------|--------------------------------|
| Class                         | -                              |
| Method                        | GetUser, CreateUser            |
| Short Description             | Confusing names                |
| Suggestions to fix Code Smell | Do not use both user and userr |

#### Code Smell #9

|                               |  |
|-------------------------------|--|
| Class                         | -  |
| Method                        | QuizAns  |
| Short Description             | Redundant Code   |
| Suggestions to fix Code Smell | Simplify and abstract code to not replicate<br>functionality over code |

Aaron:

# Number of lines of code reviewed: 449  
# Classes: 5  
# Methods: 20  
# Issues Identified: 0  
# Code smells Identified: 8

React:

#### Code Smell #1

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | -   |
| Short Description             | State is being changed directly via assignment operator in multiple files across several methods. |
| Suggestions to fix Code Smell | Use setState function to mutate the state.  |

#### Code Smell #2

|                               |   |
|-------------------------------|---|
| Class                         | -   |
| Method                        | -   |
| Short Description             | Entire code is formatted using 4 space indentation, standard is to use 2 space indentation. |
| Suggestions to fix Code Smell | Lint code to change 4 spaces to 2 spaces..  |

#### Code Smell #3

|                   |   |
|-------------------|---|
| Class             | -   |
| Method            | -   |
| Short Description | Multiple strings have been marked with double quotes. |

|                               |   |
|-------------------------------|---|
| Suggestions to fix Code Smell | Single quotes are to be used for strings unless using an escape sequence. |
|-------------------------------|---|

#### Code Smell #4

|                               |  |
|-------------------------------|--|
| Class                         | -  |
| Method                        | -  |
| Short Description             | Semicolons are used in several statements. |
| Suggestions to fix Code Smell | Semicolons are to be avoided entirely.     |

#### Code Smell #5

|                               |  |
|-------------------------------|--|
| Class                         | Quiz (Quiz.js)   |
| Method                        | handleAChange(event)   |
| Short Description             | Excessively complicated line with no documentation or comments to explain its functionality.         |
| Suggestions to fix Code Smell | Use comments to briefly explain its purpose so as to be able to understand the function at a glance. |

#### Code Smell #6

|                               |  |
|-------------------------------|--|
| Class                         | Quiz (Quiz.js)                                     |
| Method                        | render()   |
| Short Description             | Indentation error at <li> tag at return statement. |
| Suggestions to fix Code Smell | Fix indentation to match the opening <li> tag.     |

### Code Smell #7

|                               |   |
|-------------------------------|---|
| Class                         | LeaderBoard (LeaderBoard.js)                                |
| Method                        | render()  |
| Short Description             | Multiple declarations of i, using var and let separately.   |
| Suggestions to fix Code Smell | Only let statement is necessary here, delete var statement. |

### Code Smell #8

|                               |   |
|-------------------------------|---|
| Class                         | LeaderBoard (LeaderBoard.js)  |
| Method                        | render()  |
| Short Description             | Multiple variables are named without much relevance to their role. Eg: set1, arr. |
| Suggestions to fix Code Smell | Pick names that better define the role they are fulfilling.                       |

Sireesha:

#Number of lines reviewed: 272

#Classes: 2

#Methods: 13

#Issues Identified:

#Code smells identified:

React JS:

#### Issue #1

|                                  |  |
|----------------------------------|--|
| File                             | Createquiz.js, App.js                  |
| Class                            | CreateQuiz, App                        |
| Method                           | All                                    |
| Short Description                | Readability                            |
| Suggestion to fix the code smell | No Comments present wholeover the code |

#### Issue #2

|                                  |   |
|----------------------------------|---|
| File                             | Createquiz.js, App.js   |
| Class                            | CreateQuiz, App   |
| Method                           | All   |
| Short Description                | Modularity  |
| Suggestion to fix the code smell | Instead of writing the render part in the same file itself , can make an another seperate file for html part. |



## Code Smell #1

|                                  |  |
|----------------------------------|--|
| File                             | App.js   |
| Class                            | App  |
| Method                           | render()   |
| Short Description                | <p>Duplicated code</p> <p>Ex:</p> <pre> { !(localStorage.LoggedIn==="true") &amp;&amp;     &lt;li&gt;&lt;Link to={'/SignIn'}&gt;Sign In&lt;/Link&gt;&lt;/li&gt;     { !(localStorage.LoggedIn==="true") &amp;&amp;     &lt;li&gt;&lt;Link to={'/SignUp'}&gt;Sign Up&lt;/Link&gt;&lt;/li&gt; </pre> |
| Suggestion to fix the code smell | <p>Instead it can be written</p> <p>Ex:</p> <pre> { !(localStorage.LoggedIn==="true") &amp;&amp;     &lt;li&gt;&lt;Link to={'/SignIn'}&gt;Sign In&lt;/Link&gt;&lt;/li&gt;     &lt;li&gt;&lt;Link to={'/SignUp'}&gt;Sign Up&lt;/Link&gt;&lt;/li&gt; </pre>  |

## Code Smell #2

|                   |  |
|-------------------|--|
| File              | CreateQuiz.js , App.js                                 |
| Class             | CreateQuiz , App                                       |
| Short Description | Semi colons and trailing commas are used at the end of |

|                               |  |
|-------------------------------|--|
|                               | import statements, and almost all lines        |
| Suggestions to fix Code smell | Remove the semi colons. And unnecessary commas |

### Code Smell #3

|                                  |   |
|----------------------------------|---|
| File                             | CreateQuiz.js   |
| Class                            | CreateQuiz , App  |
| Method                           | handleSubmit  |
| Short Description                | Identifier not in camel case<br>Ex: sent_json (identifier name) |
| Suggestion to fix the code smell | Change the identifier name from sent_json to sentjson           |

### Code Smell #4

|                              |  |
|------------------------------|--|
| File                         | CreateQuiz.js , App.js   |
| Class                        | CreateQuiz   |
| Method                       | All  |
| Short Description            | <p>Indentation error declaring function names and after if conditions and for loops and also before opening braces.</p> <p>And normal indentation errors<br/>Example: Expected indentation of 16 spaces but found 18.</p> <p>Ex: if(condition)</p> |
| Suggestion to fix Code smell | Space after function name and before function parenthesis  |

|  |                    |
|--|--------------------|
|  | Ex: if (condition) |
|--|--------------------|

#### Code Smell #5

|                                  |  |
|----------------------------------|--|
| File                             | CreateQuiz.js  |
| Class                            | CreateQuiz   |
| Method                           | All  |
| Short Description                | string names are named keeping them in double quotes<br><br>Ex: "" |
| Suggestion to fix the code smell | Instead of double quotes, use single quotes<br><br>Ex: ' '         |

#### Code Smell #6

|                                  |  |
|----------------------------------|--|
| File                             | Createquiz.js, App.js  |
| Class                            | CreateQuiz, App  |
| Method                           | -  |
| Short Description                | Fetch, alert, localStorage not defined                             |
| Suggestion to fix the code smell | Instead of using them that way , window.fetch(...) has to be used. |

#### Code Smell #7

|                                  |  |
|----------------------------------|--|
| File                             | Createquiz.js, App.js  |
| Class                            | CreateQuiz, App  |
| Method                           |  |
| Short Description                | space Error at ' ' '!' '{ '( ' ;'<br><br>Example:{ anylogged:<br>false,userlogged:null } |
| Suggestion to fix the code smell | Space after ' ,'<br><br>Ex: { anylogged: false,<br>userlogged: null }                    |

#### Code Smell #8

|                                  |  |
|----------------------------------|--|
| File                             | Createquiz.js, App.js  |
| Class                            | CreateQuiz, App  |
| Method                           | ALL  |
| Short Description                | Short of Blank lines / Unnecessary use of blank lines                  |
| Suggestion to fix the code smell | At max only blank line is allowed and a blank line must at end of file |

#### Code Smell #9

|                   |  |
|-------------------|--|
| File              | Createquiz.js, App.js  |
| Class             | CreateQuiz, App  |
| Method            | ALL  |
| Short Description | Declaration of multiple variables in single line<br><br>Ex: var rows = [], i = 0, len = this.state.no_of_ques; |

|                                  |  |
|----------------------------------|--|
| Suggestion to fix the code smell | Divide the declaration of variables in two lines<br><br>Ex: var row = []<br>Var len = this.state.no_of_ques, i = 0 |
|----------------------------------|--|

Visvesh:

#Number of lines reviewed: 180

#Classes: 3

#Methods: 7

#Issues Identified:

#Code smells identified:

Issue #1

|                                  |  |
|----------------------------------|--|
| File                             | SignUp.js  |
| Class                            | SignUp   |
| Method                           | render()   |
| Short Description                | There isn't any check on null values entered by user.  |
| Suggestion to fix the code smell | An if condition just before calling handleSubmit would prevent any detail of user being NULL |

Issue #2

|        |                |
|--------|----------------|
| File   | SignUp.js      |
| Class  | SignUp         |
| Method | handleSubmit() |

|                                  |  |
|----------------------------------|--|
| Short Description                | Response received by front-end need not be <i>const</i>                    |
| Suggestion to fix the code smell | Declaring var response = new Response(...) also accomplished our objective |

### Issue #3

|                                  |   |
|----------------------------------|---|
| File                             | SignIn.js   |
| Class                            | SignIn  |
| Method                           | handleSubmit()  |
| Short Description                | Using alert wasn't the best idea as it requires the user to click <b>ok</b> everytime. It would be useful when asking the user something and not for a feedback |
| Suggestion to fix the code smell | Updating a <p> or <span> tag doesn't require the user to click on anything thereby making user experience better  |

### Code Smell #1

|                   |  |
|-------------------|--|
| File              | Home.js, SignUp.js, SignIn.js  |
| Class             | Home, SignUp, SignIn   |
| Method            | Constructors of above classes  |
| Short Description | <p>Indentation of spaces aren't consistent.</p> <p>Example:<br/>"Expected indentation of 6 spaces but found 10."</p> |

|                                  |   |
|----------------------------------|---|
| Suggestion to fix the code smell | Making indentation spaces consistent inorder to avoid potential errors and to make code readable. |
|----------------------------------|---|

#### Code Smell #2

|                                  |  |
|----------------------------------|--|
| File                             | Home.js,SignUp.js,SignIn.js                    |
| Class                            | Home,SignUp,SignIn                             |
| Method                           | render()                                       |
| Short Description                | Space after return is not required             |
| Suggestion to fix the code smell | Typing return(...) is better than return (...) |

#### Code Smell #3

|                                  |  |
|----------------------------------|--|
| File                             | Home.js,SignUp.js,SignIn.js  |
| Class                            | Home,SignUp,SignIn   |
| Method                           | Constructors of above classes  |
| Short Description                | <p>Strings are supposed to use single quote while being initialized in constructor of respective functions.</p> <p>Example:<br/>It would be better to write<br/>username: " instead of<br/>username:""</p> |
| Suggestion to fix the code smell | Replacing "" with " while initializing   |

#### Code Smell #4

|                                  |   |
|----------------------------------|---|
| File                             | Home.js,SignUp.js,SignIn.js   |
| Class                            | Home,SignUp,SignIn  |
| Method                           | async handleSubmit()  |
| Short Description                | Commas aren't followed by spaces  |
| Suggestion to fix the code smell | Typing abc, def is advised over abc,def because the former is more legible. |

#### Code Smell #5

|                                  |                                     |
|----------------------------------|-------------------------------------|
| File                             | Home.js,SignUp.js,SignIn.js         |
| Class                            | Home,SignUp,SignIn                  |
| Method                           | render()                            |
| Short Description                | Trailing spaces after certain lines |
| Suggestion to fix the code smell | It isn't a good coding practice.    |

#### Design Patterns and Anti Patterns:

-> The whole code seems to be added part after part , no perfect modulation of the files.

-> coming to the backed file, the whole code is made fit in one large file . Instead it might be divided into seperate files accordingly with the methods different.

-> No proper modulation of the code.

-> Front end part ( React js) -> The same file includes both the code and the html part , instead different files can be made which improves the readability and understandability of the code.



-> The code is a bit too complex to completely understand in one go. One should have complete idea about the functionality , only then he may .

-> There are no OOPS (object oriented programming) available in the code. The Anti pattern is of the form “blob”.

-> Finally , it looks as if the author has started implementig the code at last minute, without complete planning of what to do, when to be done and stuff.

-> Solution to avoid all these is

-> To start the project as soon as possible with a proper planning of what to do , and where to place the related things.

-> Modularity , dividing it files which makes our code more efficient to understand.

-> Avoid decoupling , migrating required stuff but not the whole.