# **Criteria B: Design**

By: Hrithik Shah

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## Detailed Design Specifications

Criteria A's specifications will be described and branched into specifications need for Criteria B in further detail.

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| Criteria A | Criteria B |
| 1. Game that allows students to practice spatial, logical or linguistic skills. | 1. A grid or an array is used. 2. JButtons are used, including these methods: setPreferredSize, setBorderPainted, setIcon, setEnabled |
| 1. Game is mainly visual, with limited written content. | 1. Instructions are succinct. 2. Instructions have pictures to explain. 3. Use pictures throughout the game – on each screen. 4. Grid/Array has pictures in it. |
| 1. Good user-interface design principles are used. | 1. Disables buttons when they should not be clicked. 2. Like items are grouped with liked items & widgets appear in the right order. 3. Code if statements to handle invalid data entry. 4. Have useful information on JButtons. 5. Spell checked the instructions. 6. Use a single colour scheme across all screens. 7. Change the fonts. |
| 1. Game is fun and engaging for grade 5 learning-disabled students. | 1. There is a clear theme. 2. Can move. 3. Players can’t cheat. 4. No obvious errors. 5. Restrictions to movement/choices. |
| 1. Code is easily adaptable. | 1. Title comments (Name, Date, Purpose) at the top of the code. 2. Pictures are sourced with the picture name and URL at the top of the code. 3. Comments at the beginning of methods. 4. Action Performed is broken down into many methods. 5. Some of the methods have return types/ parameters. 6. Arrays & Loops are used to update screens/move levels/check validity. |
| 1. Requires 1 or 2 players. | 1. Can play again. 2. Reset button. 3. Turns are indicated on the screen. 4. Score / Level information is indicated on the screen. |
| 1. A new widget. | One of the following appears:   1. Menu 2. Progress bar 3. Pull Down/Combo Box 4. Radio Buttons 5. JTextArea 6. Sound 7. Start/End Time |

## Feasible Design Ideas

Before I started making my game, I brainstormed the different types of spatial and logical games that I could code and could finish in the time given. I knew beforehand that I did not want to code a game that would not pose much of a challenge or not need me to put in much thought. Therefore, I started searching the web for games that would be fun to play and fun to code.

In the past, I played a game that is aided by cards, but it is mostly played verbally. I thought that making the game would not be that challenging as it does not require much visual aid. This game is called Avalon, where players try and find who, amongst them are bad and who are good. These decisions would be logic based (specification 1). The reason this game would be difficult to code as it needs the players to “vote” in unison to pass or fail a mission (one of the aspects of the game). With Java, only one person can play at a time, at least from the knowledge that we have gained. In addition, the game would be a little overwhelming for students in 5th grade to understand (specification 4).

The next game that would have been good to code would have been Catan, a game where players try to colonize and make settlements through a piece of land (on a game board), gaining points along the way. This game could have been made in the given time frame, but the only problem was that the game is a 6 player game. This made it difficult to code all the necessary features of the game.

Yu-Gi-Oh is a trading card game, where players use a combination of cards to play against other “duelists” and win duels. The obvious theme of Yu-Gi-Oh will tie into this as it is a children’s TV show (specification 4). I felt that this would be a good game to code as it is only 2 players, and will give me a challenge to code.

I finally went along with the TCG Yu-Gi-Oh as the user has to make many logical and spatial decisions throughout the game (specification 1). This game is mostly visual based (apart from instructions) as it only needs the user to recognize the cards, and know the designated effects of the card (specification 2). As this is a game that is played by most elementary students, the students will enjoy the game (specification 4). Another great thing as most students will recognize this as it is popular, and will create its own theme (specification 4). Furthermore, this is a 2 player game which corresponds with (specification 6).

## Color Scheme Selection

Option 1: Yugioh Generation 1

* Background: Egyptian drawings (brown)
* Foreground: Colors of purple and yellow and blue



Option 2: Yugioh Dragunity

* Background: Bright orange
* Foreground: Emerald green



Option 3: Yugioh Duel Generation

* Background: dark and light blue (brown)
* Foreground: crimson, dark grey, red, and light blue



I am going to use the “Yu-Gi-Oh Generation 1” color scheme.

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| Color | Use | RGB code |
| Dark Brown | Background | 132,94,20 |
| Dark Blue | Titles | 3,57,139 |
| Light Blue | Subtitles | 80,137,222 |
| Light Purple | Button | 165,89,116 |
| Gold | Button | 228,217,123 |

## Accurate and Detailed designs

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