

RESEARCH & PROJECT SUBMISSIONS

**Program: CESS**

***Course Code: CSE334***

***Course Name: Internet Programming***

***Examination Committee***

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**21-5-2020**

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**01**

***ABSTRACT***

# **ABSTRACT**

This report discusses in detail the development process of a matching cards web game. In the beginning, we introduced the game details, rules, the effect it has in improving the player’s memory over time and the background knowledge needed to develop such a game. Afterwards, we discussed the approaches associated with developing such a game, then we wrote down the functional and non-functional requirements that are associated with this game. Afterwards, our architectural design of this gaming system is discussed in detail with diagrams that show the exact design we had in mind when we developed this game and we showed screenshots of the user interface, then we attached the actual code of our game which we wrote based on the design diagrams. The code files are basically one HTML file, one CSS file and one javascript file. In the end, we showed screenshots of the game while it’s being played to show the different states of the system, also we included all the sources and references we used.

**02**

***INTRODUCTION***

# **INTRODUCTION**

This memory matching cards game is a game in which there is a matrix of hidden images where each image has a copy of itself. Two players take turns to try and find as many matching images as possible before all cards run out. There are three levels for this game, they are:

1. Easy (matrix of 4x4 images)
2. Medium (matrix of 4x5 images)
3. Hard (matrix of 4x6 images)

The score of each player increases by two whenever he/she finds matching images. The player with a bigger score at the end of the game is the winner. The game is very important whether it is for improving your memorizing skills or for learning more about the development process of a web application using CSS, HTML and vanilla Javascript. The idea we had to develop this game is to create a submission form which takes the players’ names and avatars as input and the level (easy, medium or hard) of their choice. Afterwards, the user clicks on start which shows the game board containing the matrix of hidden images, the names and avatars of the players, the scores of the players, the current player’s turn and a restart button which when clicked takes you back to the original submission form. When the game ends, either a celebration image appears to celebrate one of the two player’s victory or a sad emoji image appears when the game ends in a draw.

**03**

***METHODS***

# **METHODS**

This section discusses the various approaches and techniques that could be used to develop the matching cards memory game. The first approach would be to use HTML and CSS to construct the user interface and vanilla Javascript with the Document Object Model (referred to as DOM) to control and manipulate the HTML code based on the user’s actions. The DOM allows us to manage the game logic whenever the user presses any of the hidden images or the start/restart button. However, this approach does not allow us to store the players’ information as there is no backend server available, so players cannot create accounts and save their data, scores and results on the website. This approach is the one we decided to use in our project as creating user accounts is not needed in the requirements of this project.

The second approach