A black background with green text

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**MEMORY CARD GAME: QUICKMATCH**

by

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**Report presented to:**  Dr. Maher Itani

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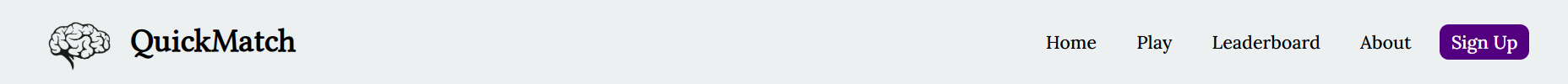
# INTRODUCTION

According to a research done by Wallace Christopher (2023) “*Regularly challenging the brain with card games can also help prevent memory decline associated with aging and certain neurological conditions*”. QuickMatch is a memory card designed to help the users improve their memory while playing a simple and enjoyable game of cards. The color scheme on the website is mainly purple and white, creating a stylish and user-friendly design. This website focuses creating a logical and simple cards game while also prioritizing user benefits through tutorial videos about the brain and the memory. Additionally, users can compete together based on two factors that we will cover later in this report. To be able to challenge others, the user must create an account or login to an account if he has already created one. After completing this step, the username of the player will be displayed in one of the two leaderboard existing tables.

During the implementation of this website, bootstrap was used to implement elements such as an interactive carousel with buttons that can take you to play, register, or check the leaderboard; and a carousel; also, an accordion in the about page that shares more insights about us, and the website in general.

# Components

## Navigation Bar:



The navigation bar is an essential part of every website because it helps the user navigate easily through the different pages, while maintaining a clear and elegant look of the available features. The Navbar in QuickMatch contains links to:

* Home page.
* Play that takes the user to the home page also but to the section designated to the 2 available games.
* Leaderboard.
* About.
* Sign-up and Login pages.
* Name of logo of the website. (the logo is also a button that can refresh/load home page again)

For mobile users, this navigation bar transforms into a hamburger menu for better visibility and accessibility for smaller screen sizes. The links in this hamburger menu are the same as the navbar.

## Main Section: Section 1

A purple and white website

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This section contains a small text describing the website’s purpose briefly, with a “learn more” button that is linked to the “about us” page. It serves as an attention grabber displaying the cards design and defining to the user what games are available on the website.

## Main Section: Section 2

A screenshot of a video game

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This section is designated to a YouTube video that shares the importance of the memory, and what would happen if you removed an essential part from it. This section’s purpose is to catch the user’s attention on the importance of the memory and increase the chances of them actually playing the game QuickMatch.

The video’s link is: <https://www.youtube.com/watch?v=KkaXNvzE4pk> and it is cited below in the references.

## Games

A screenshot of a game

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The section has the two playable games of this website. The logic for both is quite similar with the core difference being how much time the user is given to finish up the cards.

1. In “Free Play” mode, the user is given as much time as he wants; there is no timer that tracks his playing time; however, the JavaScript keeps track of the attempts (card flips) that the user took to complete it.
2. In “Timed Challenge” mode, the user is given one minute and thirty seconds exactly to finish up the game and the timer starts immediately on load. A restart button is also available which restarts the time and re-shuffle the cards.
3. The cards are generated using JavaScript and a JSON file that contains the data of the cards such as the image (icon) that it displays and its name.

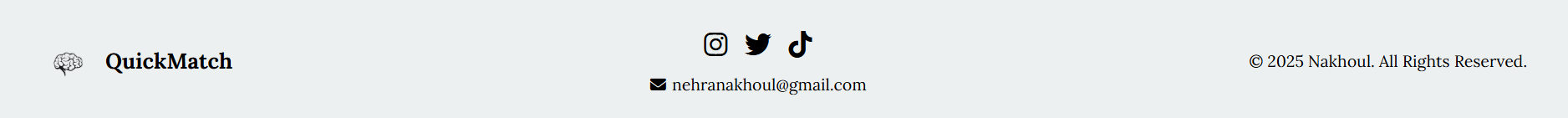
## Mystery Game

A hand holding cards

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The mystery game is a separate challenge with a different concept that focuses essentially on short term memory and fast cognitive skills. First, three cards are shown to the user for 3 seconds and then they disappear to give place for 8 unique cards. Those 8 cards are also flipped for 3 seconds to give the user time to analyze them and look for his cards. Finally, the cards are flipped to their back and the user has 3 guess to locate the initially shown cards.

## Footer



The footer includes 3 main parts that are left, middle and right part:

* The left part contains the website’s name and logo, knowing that the logo is also a button that is linked to the homepage (basically it refreshes the page).
* Middle part is composed of my personal email, and three icons that are linked to my Instagram, X, and TikTok.
* Right part is a simple section reserved for copyright notice.

Dividing the footer in three parts is done using flex properties where “display: flex” is used alongside with “space-between” feature to separate the 3 different parts.

## Leaderboard

A screenshot of a computer

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The Leaderboard page is designated to rank the users in two tables based on the game they chose to play. To do that, two tables exist in this page that are imported from bootstrap. The first table ranks the users based on the time score (lower times ranks higher on the list), while the second table ranks them based on attempts taken to finish the game.

A screenshot of a video game

Description automatically generated

The third section of the Leaderboard page is an educational video explaining a method that helps in improving the memory. This specific video is put purposely on this page so that the users that are unsatisfied with their rank will be tempted to watch it and try to improve their score.

## About page

A screenshot of a website

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The first section of the about page contains a carousel with three slides/images. At the bottom, there is a responsive image slider that can be used to swap through the 3 images. In each of the previously mentioned pictures, a button with its description is displayed with the purpose of emphasizing in the 3 main features of the website: Sign-up, Play, and Leaderboard. This carousel is also loaded from bootstrap, but many modifications on it were made for it to look the way it does on the website.

The second section of the about page contains a guide on how to play the game with 4 easy steps that should make understanding the game easy for everyone.

The final section of this page is an accordion loaded from bootstrap with 3 parts:

* Why choose us ?
* Benefits of playing.
* About us, to give the user some information about the creator of the website.

## Sign-Up page

A screenshot of a login form

Description automatically generatedThe Sign-up page is essential to create user accounts that will be used to rank the players in the leaderboard. However, the players are allowed to play even if they are not signed in, but their results will be ignored after each game.

From validation is applied in this page:

* If the user doesn’t enter a value in any of the fields, this specific field will be colored in red and message displaying the missing field will be shown to the user.
* If the user’s password does not match the repeated password, a message with the error will also be displayed and the corresponding boxes will turn red to signify that an error exists.

## Login page

## A screenshot of a login form Description automatically generated

The login’s page logic is the same as the sign-up page, but the difference being the fields required to input; the user is only prompted to enter an existing email or a password.

Form validation works the same as signup, where the missing and incorrect fields will turn red and display an error message.

# Database tables

## users

A screenshot of a computer

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## games

A screenshot of a computer

Description automatically generated

## leaderboards

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* foreign keys user\_id and game\_id that references the users and games tables.

! To test the database, first run the file (insert\_games.php) then the code (insert\_users.php). To add those users to the leaderboard and show them on the front-end of the website, you can run the (populate\_leaderboard.php) code.

# Front-end new features

* Added new table to the leaderboard page for the Mystery game.
* Added search bars at the top of each Leaderboards, allowing the user to search for their score.
* Fixed images that were corrupted/not showing.
* Add a new page called “user” that displays information about the currently logged in user (email, name) and the number of wins that he has in each game.
* Pop up message, on mouseover when hovering over the mystery game saying (you have to really focus on details!) and hiding it on mouse leave.

# JQuery and AJAX

* loading the values from the database into the leaderboards in the leaderboard.html file.
* Pop up message, on mouseover when hovering over the mystery game saying (you are on your own for this one!).
* Collecting the score variables to insert them and sort them in the leaderboards table.

# PHP codes and outputs

1. Insert\_users.php

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1. Insert\_games

A screenshot of a game

Description automatically generated

1. Populate\_leaderboard

A screenshot of a computer

Description automatically generated

# References

Christopher, W. (2023, December 10). The benefits of playing card games for mental sharpness and memory. *Medium*. <https://medium.com/@wallace.christopher/the-benefits-of-playing-card-games-for-mental-sharpness-and-memory-7014518f445a>

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Used ChatGPT (OpenAI, 2025) to assist with some code generation, debugging, and explanation of PHP, JavaScript, MySQL, and AJAX integration for this project.