

# DataByte

**The Official Machine Learning and Data Science Club of  
NITT**

**FIRST-YEAR INDUCTION**

**TASK-1**

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## **WEB DEVELOPMENT**

### **PROBLEM STATEMENT:**

The task is to create a matching game where the player must match pairs of cards with the same image. The game will have two modes - Basic and Hacker.

### **Basic Mode:**

- The game will have a grid (4 X 4) of cards with the backside facing up.
- The player must flip two cards at a time to reveal their face.
- If the two cards have the same image, they remain face up and score a point.
- If the two cards do not match, they are turned back over, and gets shuffled up and the player moves on to the next turn.
- The game ends when all the pairs have been matched.
- Add a timer of 30-60 sec to the game to track the time taken to complete the game or restrict the number of clicks made to 3 per 8 sec.
- Implement a suitable scoring system based on time and all essential game features like restart button, etc.
- Implement suitable UI with basic animations for clicks and card display.

### **Hacker Mode:**

- The game will have a grid of cards with the backside facing up whose number of rows and columns must be decided by the user (default 6 x 6) and depending upon the values, place dummy cards (if needed so as to make proper matching of cards based upon user input and just disappear these cards upon click) in the grid.
- In addition to the basic mode features, the game will also have power-up cards with special abilities like
  - Freeze Card: This card freezes the timer for a certain amount of time, giving the player more time to find matches.
  - Bonus Card: This card gives the player a bonus point or points, increasing their score.
- The power-up cards will be randomly placed on the board. Once found, the power-up card's effect will then be activated, and the player will be able to use it for a limited amount of time, after that, the power-up card will expire, and the player will have to find another one to use its effect again.
- Implement sound effects for clicks and win.

#### **Brownie points:**

- Implement a leaderboard using local storage to save the high scores of players.
- Implement a feature to choose the difficulty level of the game (easy, medium, hard) with a corresponding number of cards on the board.
- Use any API of your choice to display random images upon start of the game.
- Save the state of the game i.e., if the user pauses or closes the window and opens again, he should be able to continue playing.
- Make the website mobile responsive.

#### **GUIDELINES:**

- It is mandatory to complete the basic mode of the task before it can be considered complete. While the hacker mode is optional, it is recommended that the mentee implements it if interested.

- **Must build the code in HTML, CSS, vanilla JS only.** Strictly no external libraries such as Bootstrap/ Material UI should be used.
- Plagiarism is strictly forbidden, and any instance of it will result in disqualification from any Databyte activity.

### **EVALUATION METRICS:**

- The mentee's work will be evaluated based on the implementation of the basic features suggested and UI/UX, as well as their creativity and originality.
- If any extra features have been implemented, the mentee will receive additional brownie points.
- Plagiarism and usage of ChatGPT will not be tolerated and will result in disqualification from the task.

### **SUBMISSIONS:**

Host the website in any platform, say Github pages and submit the repository link containing the complete code with a well structured README file explaining in detail your work and features implemented.

### **RESOURCES:**

[HTML basics - Learn web development | MDN](#)

[Learn HTML Basics for Beginners in Just 15 Minutes](#)

[CSS: Cascading Style Sheets | MDN](#)

[JavaScript Tutorial](#)

<https://developer.mozilla.org/en-US/docs/Learn/JavaScript>

[Learn the Basics of Git in Under 10 Minutes](#)