MEMORY GAME

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JING ZHANG

When starting the application, we will display the memory game with:

- Game title
- Game instructions
- Playing board

At the beginning, we have all 24 cards facing down.

When user clicks a card, it will turn face up and reveals the picture. If the user clicks another card, it will turn face up and reveals the picture. If they are not matching, both cards will turn face down.

Memory Matching Game

How to play:

- Flip the cards to reveal the picture.
- If you found a matching picture, you got the 2 cards.
- Let's find all the matching pictures!

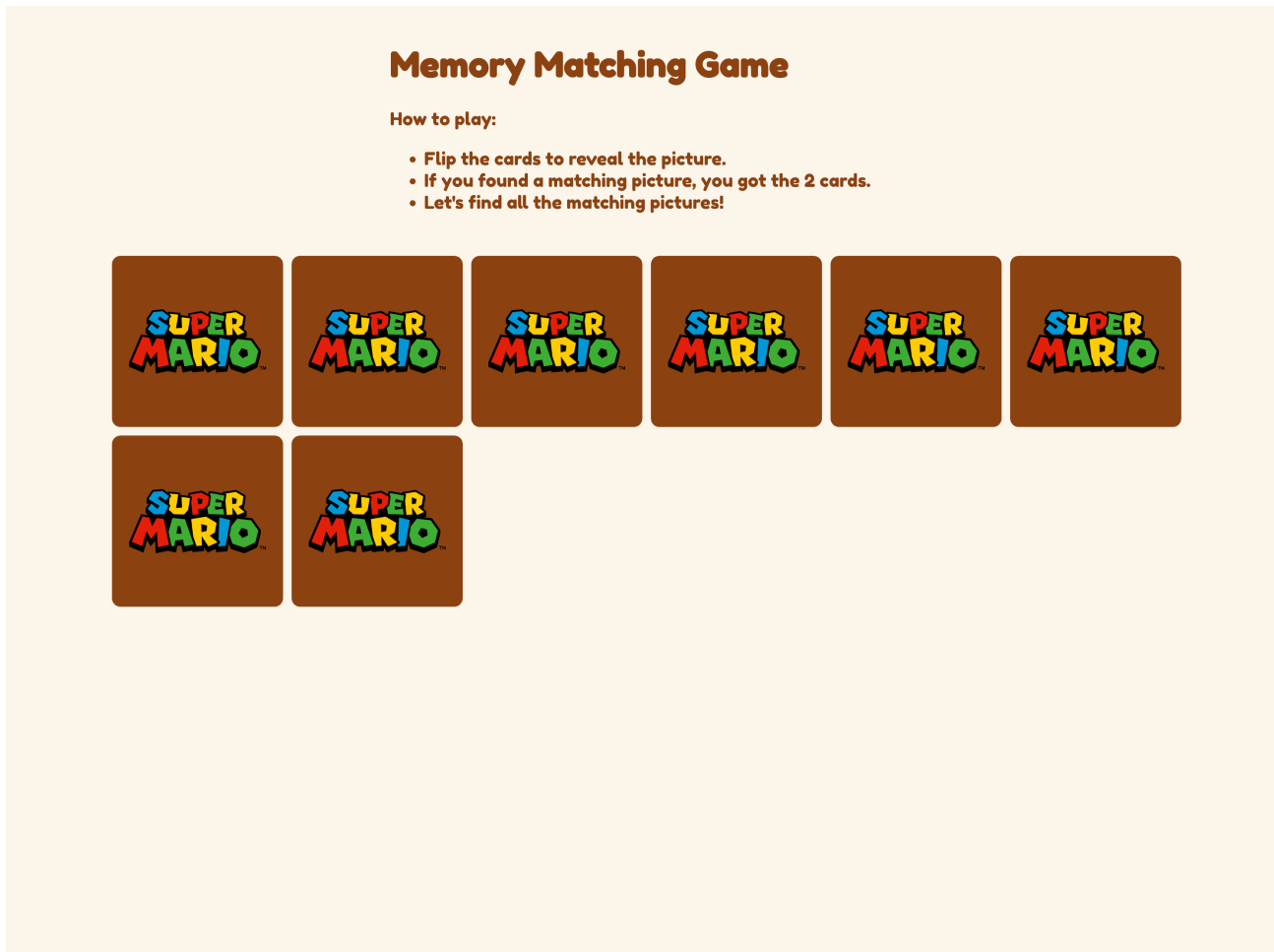If both of the cards are matching, both of the cards will disappear.

Memory Matching Game

How to play:

- **Flip the cards to reveal the picture.**
- **If you found a matching picture, you got the 2 cards.**
- **Let's find all the matching pictures!**

If user continues finding the matching cards, more cards will disappear:
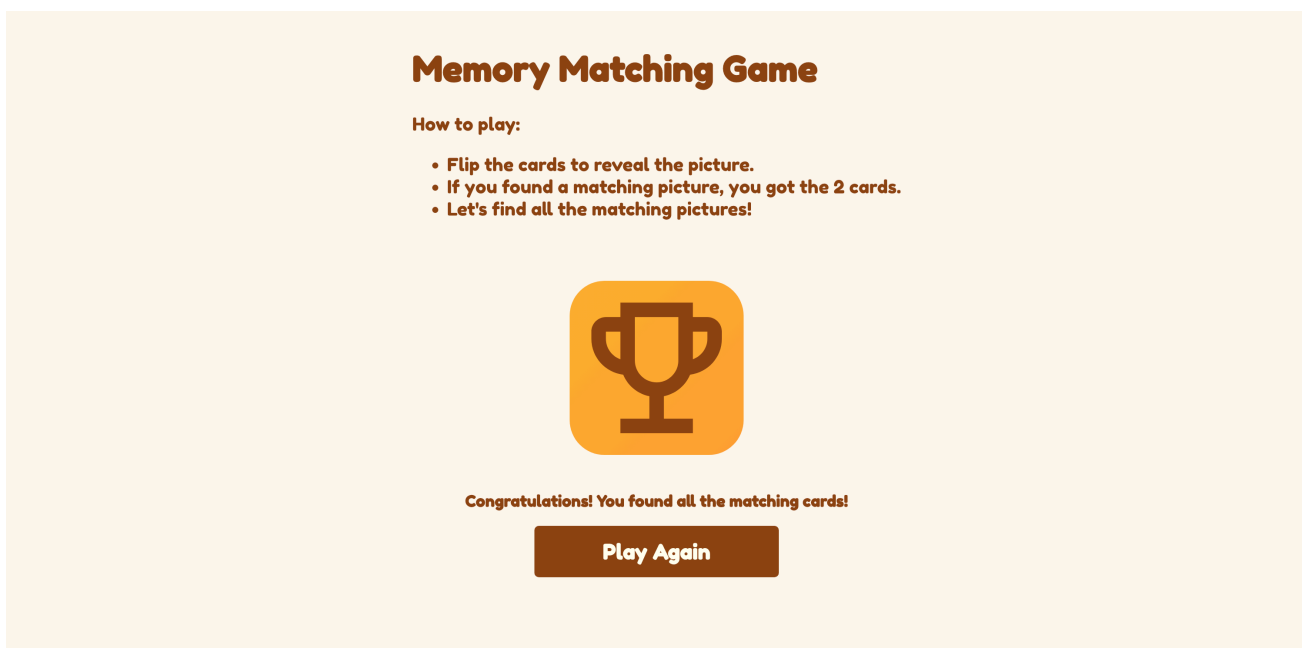

Memory Matching Game

How to play:

- Flip the cards to reveal the picture.
- If you found a matching picture, you got the 2 cards.
- Let's find all the matching pictures!

If user find all matching cards, they got a trophy. And have the opportunity to play again.
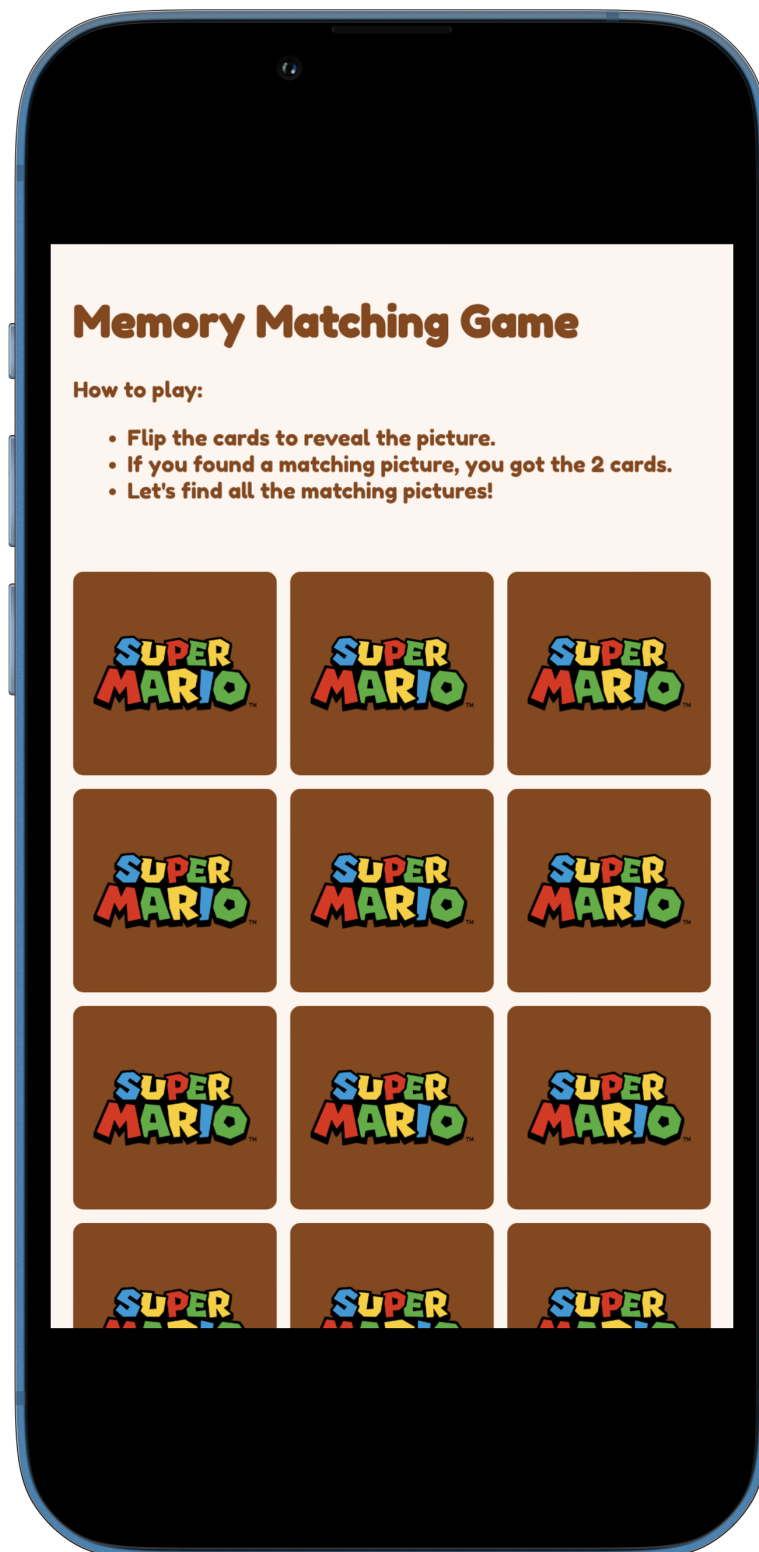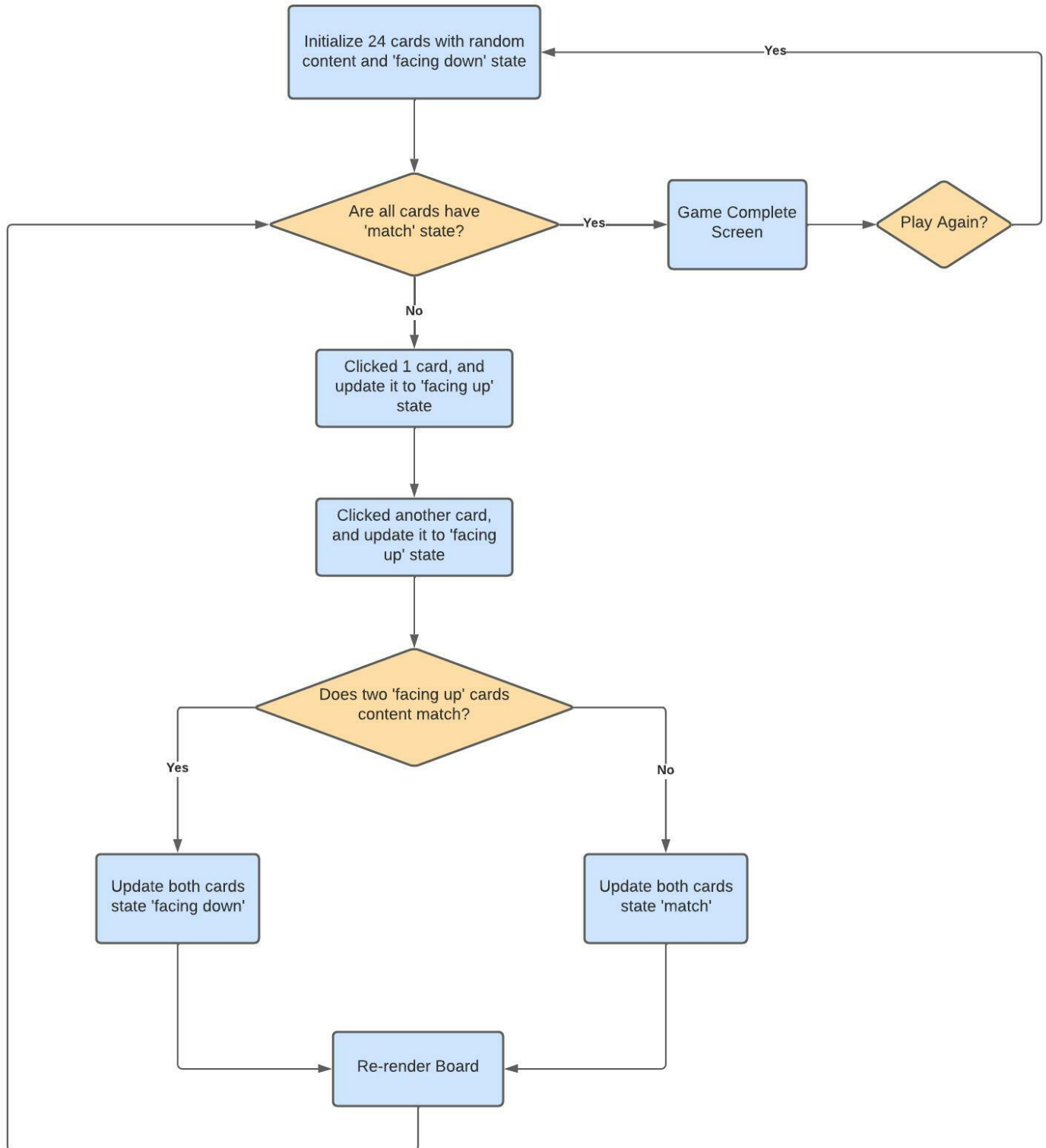

Memory Matching Game

How to play:

- Flip the cards to reveal the picture.
- If you found a matching picture, you got the 2 cards.
- Let's find all the matching pictures!

Congratulations! You found all the matching cards!

Play Again

On Tablet, the cards will be displayed in 4x6 grid layout
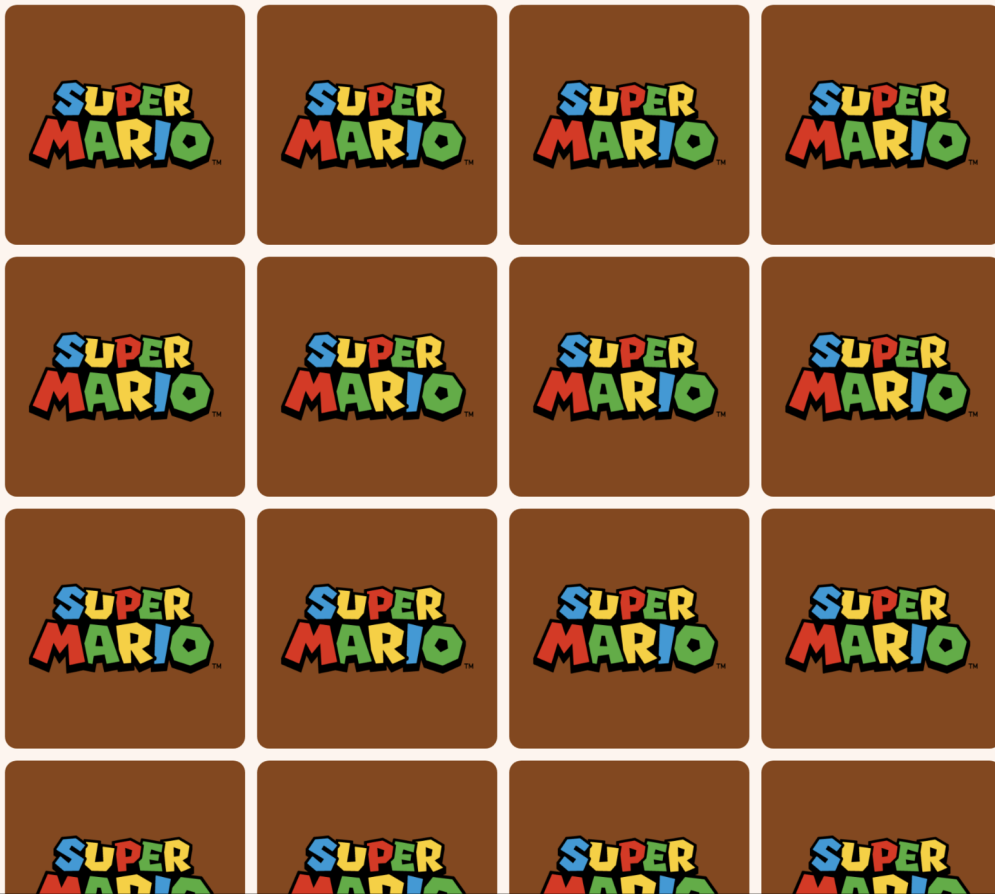
On phone the cards will be displayed in 3x8 grid layout

Flow Chart

Initialize 24 cards with random content and 'facing down' state

Are all cards have 'match' state?

— Yes → Game Complete Screen → Play Again? — Yes →

No ↓

Clicked 1 card, and update it to 'facing up' state

Clicked another card, and update it to 'facing up' state

Does two 'facing up' cards content match?

Yes ↓

Update both cards state 'facing down'

No ↓

Update both cards state 'match'

Re-render Board

Architecture / Framework

This app is been implemented by using React & Redux.

The core react components are

- components/Board
    - This component connect redux store and renders the game board.
    - This component runs the game rule to compare two flipped cards, and either flip them back to down state or remove them.
- components/Card
    - This component displays the card, handles 3D flip transition.
    - This component handles the card click event and update card status.

Redux actions and reducers

- INIT_BOARD: Initialize 24 cards with random content.
- TOGGLE_CARD: Toggle card status with facing up or down.
- UPDATE_CARDS_STATUS: Update two facing up cards status to match or facing down.

How to run this app

npm start

Runs the app in the development mode.

npm test

Launches the test runner in the interactive watch mode.

npm run build

Builds the app for production to the `build` folder.