

Lab 05

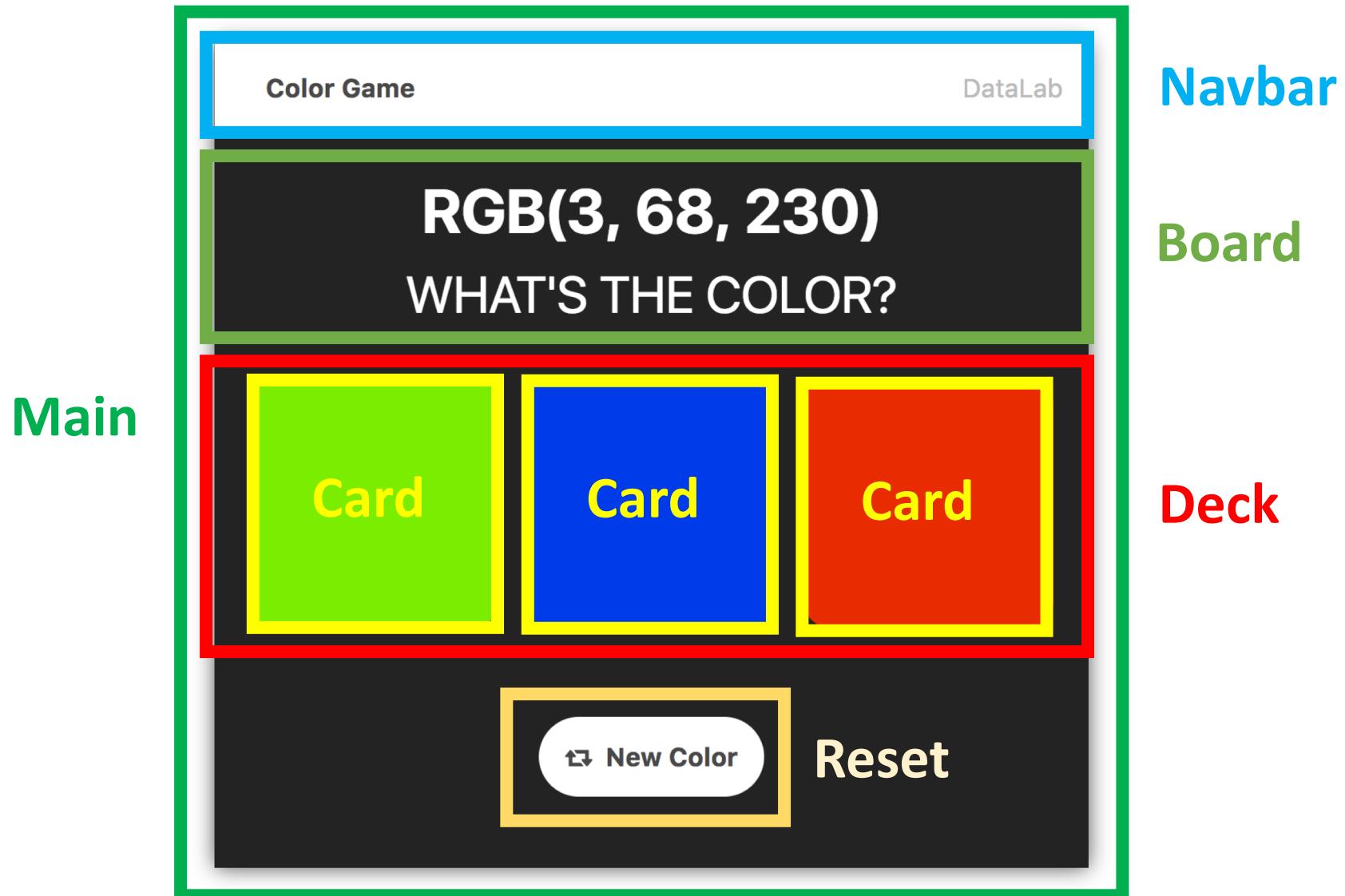
Component based Game

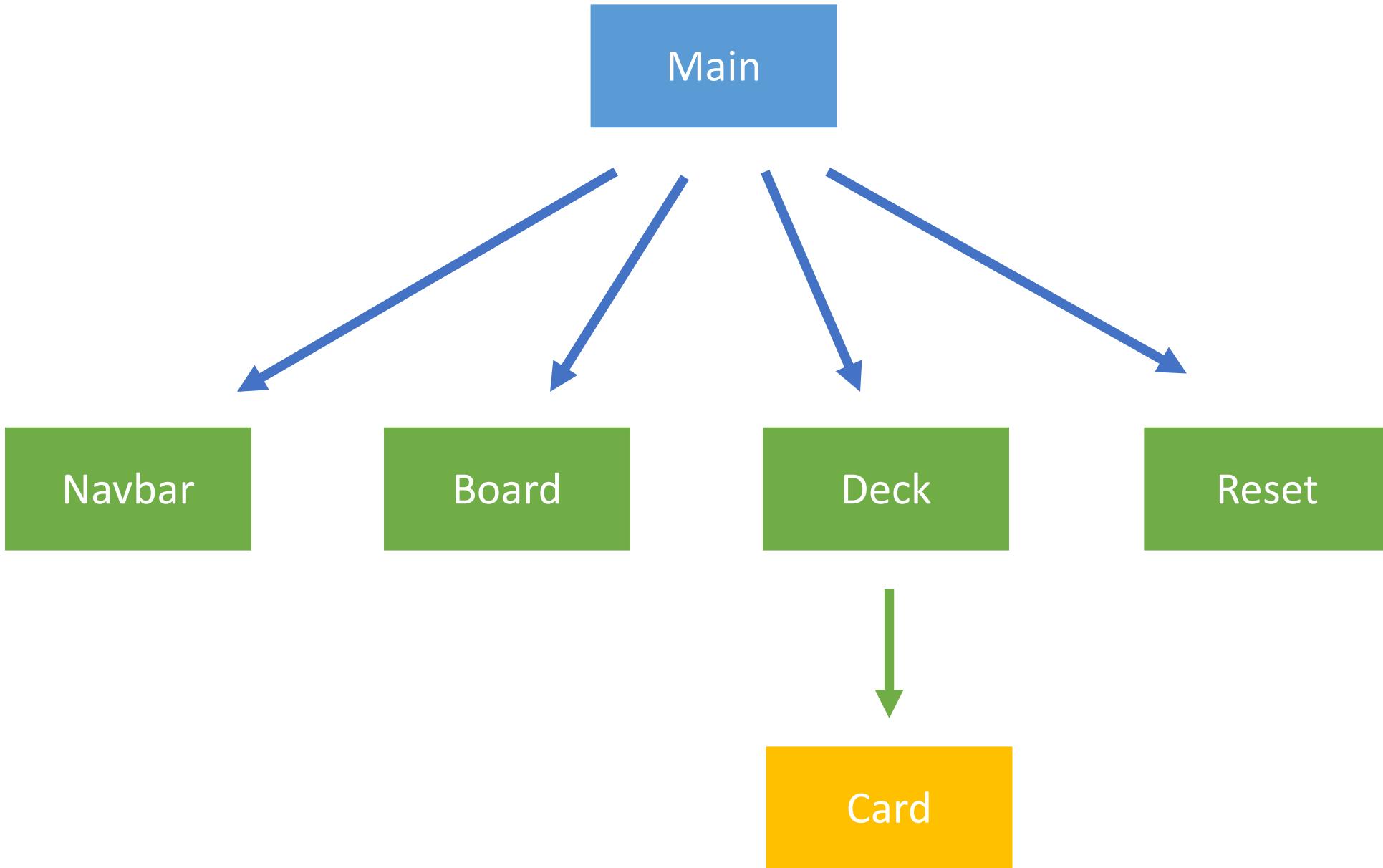
Software Studio

DataLab, CS, NTHU

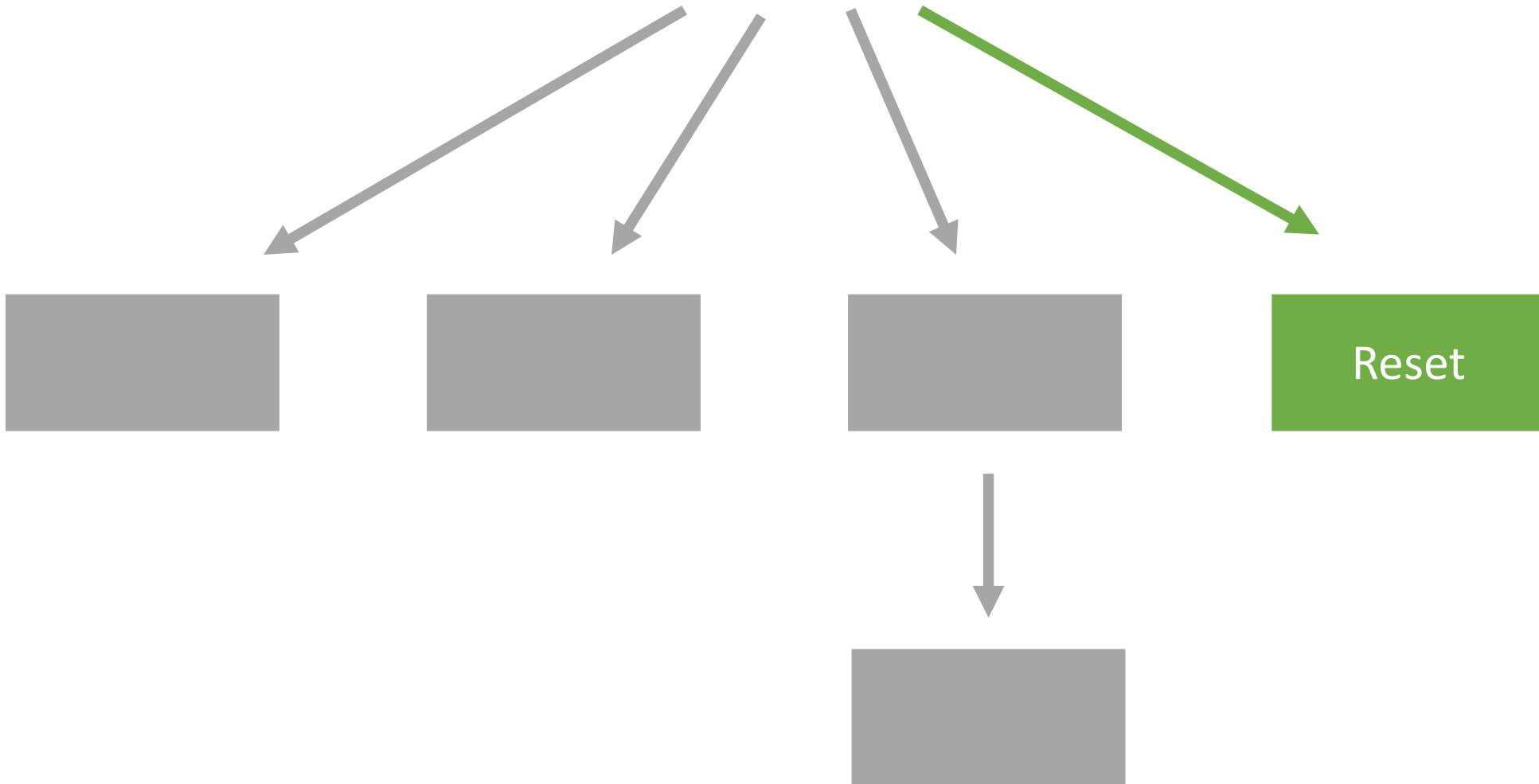
2017 spring

Color Game component





Main



Main

Fire event



Reset

```
export default class Reset extends Component {

    constructor(root) {
        super(root);

        root.addEventListener("click", this.handleDomClick.bind(this));
    }

    handleDomClick(e) {
        this.fire('resetClick');
    }
}
```

```
export default class Main extends Component {

  constructor(root) {
    super(root);

    this.navbar = new Navbar(root.querySelector('.navbar'));

    this.deck = new Deck(root.querySelector('.deck'));
    this.deck.on('wrongClick', this.handleDeckWrongClick.bind(this));
    this.deck.on('rightClick', this.handleDeckRightClick.bind(this));

    this.board = new Board(root.querySelector('.board'), this.deck.getPickedColor());

    this.reset = new Reset(root.querySelector('.reset'));
    this.reset.on('resetClick', this.handleRestClick.bind(this));
  }

  handleRestClick() {
    this.root.style.backgroundColor = "#232323";

    this.deck.reset();
    this.board.reset(this.deck.getPickedColor());
    this.reset.reset();
  }
}
```

Main

reset.method()



Reset

```
export default class Main extends Component {

  constructor(root) {
    super(root);

    this.navbar = new Navbar(root.querySelector('.navbar'));

    this.deck = new Deck(root.querySelector('.deck'));
    this.deck.on('wrongClick', this.handleDeckWrongClick.bind(this));
    this.deck.on('rightClick', this.handleDeckRightClick.bind(this));

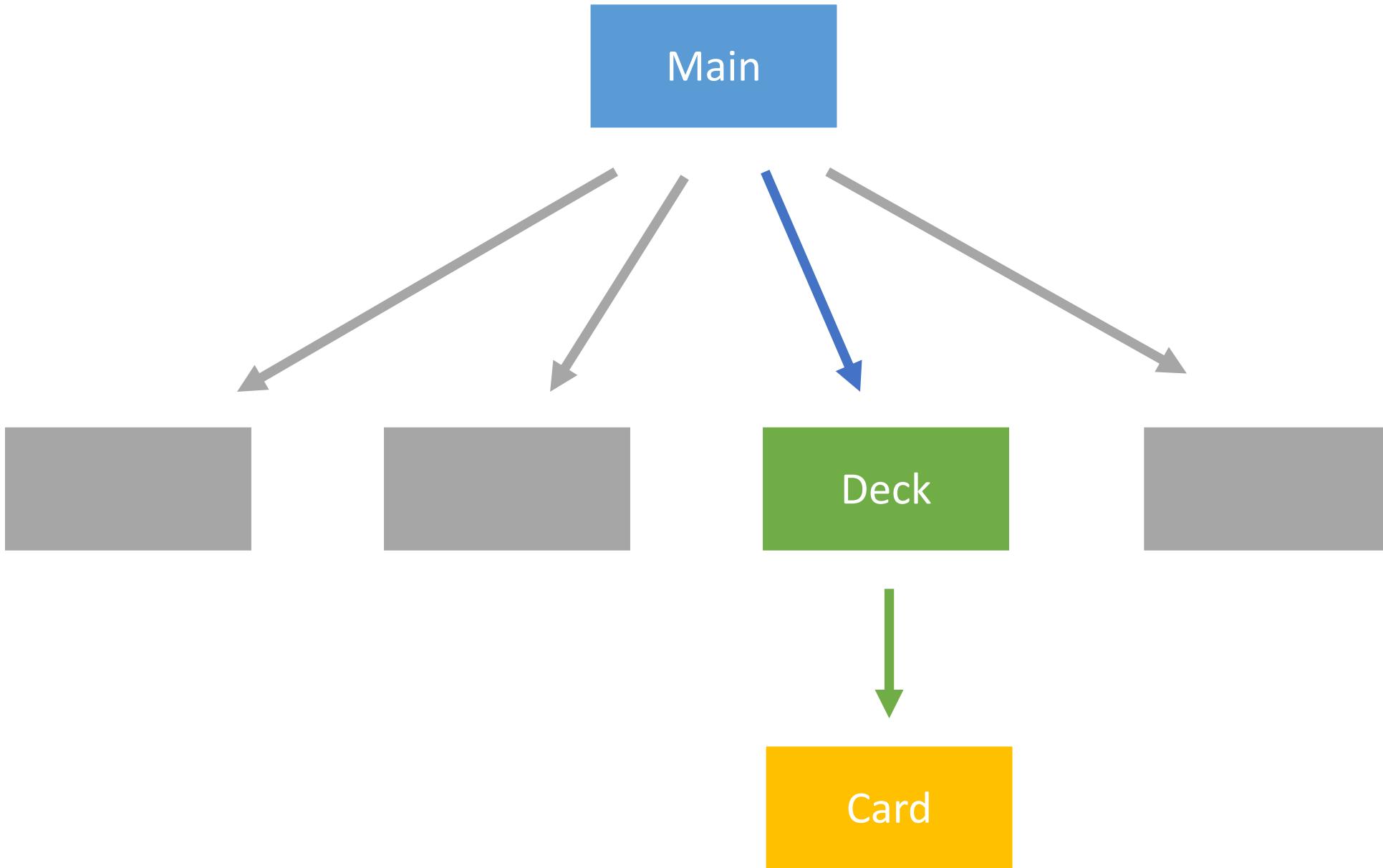
    this.board = new Board(root.querySelector('.board'), this.deck.getPickedColor());
    this.reset = new Reset(root.querySelector('.reset'));
    this.reset.on('resetClick', this.handleRestClick.bind(this));
  }

  handleRestClick() {
    this.root.style.backgroundColor = "#232323";

    this.deck.reset();
    this.board.reset(this.deck.getPickedColor());
    this.reset.reset();
  }
}
```

```
this.deck.reset();
this.board.reset(this.deck.getPickedColor());
this.reset.reset();
```

How about click card?



```
export default class Card extends Component {

  constructor(root) {
    super(root);

    root.addEventListener("click", this.handleDomClick.bind(this));
  }

  handleDomClick(e) {
    this.fire('cardClick', this.color);
  }
}
```

```
export default class Deck extends Component {

  constructor(root) {
    super(root);

    this.cards = [];
    const els = root.querySelectorAll(Card.getRootClass());

    for (let el of els) {

      const card = new Card(el);
      card.on('cardClick', this.handleClick.bind(this));

      this.cards.push(card);
    }
  }

  handleClick(firer, color) {
    if (this.gameOver)
      return;

    if (color === this.pickedColor) {
      // do something
      this.fire('rightClick', this.pickedColor);
    } else {
      // do something
      this.fire('wrongClick');
    }
  }
}
```

```
export default class Main extends Component {

  constructor(root) {
    super(root);

    this.navbar = new Navbar(root.querySelector('.navbar'));

    this.deck = new Deck(root.querySelector('.deck'));
    this.deck.on('wrongClick', this.handleDeckWrongClick.bind(this));
    this.deck.on('rightClick', this.handleDeckRightClick.bind(this));

    this.board = new Board(root.querySelector('.board'), this.deck.getPickedColor());

    this.reset = new Reset(root.querySelector('.reset'));
    this.reset.on('resetClick', this.handleRestClick.bind(this));
  }

  handleDeckWrongClick(firer) {
    this.board.showWrongMessage();
  }

  handleDeckRightClick(firer, pickedColor) {
    this.root.style.backgroundColor = pickedColor;
    this.board.showCorrectMessage();
    this.reset.showPlayAgain();
  }
}
```

```
export default class Main extends Component {

  constructor(root) {
    super(root);

    this.navbar = new Navbar(root.querySelector('.navbar'));

    this.deck = new Deck(root.querySelector('.deck'));
    this.deck.on('wrongClick', this.handleDeckWrongClick.bind(this));
    this.deck.on('rightClick', this.handleDeckRightClick.bind(this));

    this.board = new Board(root.querySelector('.board'), this.deck.getPickedColor());

    this.reset = new Reset(root.querySelector('.reset'));
    this.reset.on('resetClick', this.handleRestClick.bind(this));
  }

  handleDeckWrongClick(firer) {
    this.board.showWrongMessage();
  }

  handleDeckRightClick(firer, pickedColor) {
    this.root.style.backgroundColor = pickedColor;
    this.board.showCorrectMessage();
    this.reset.showPlayAgain();
  }
}
```

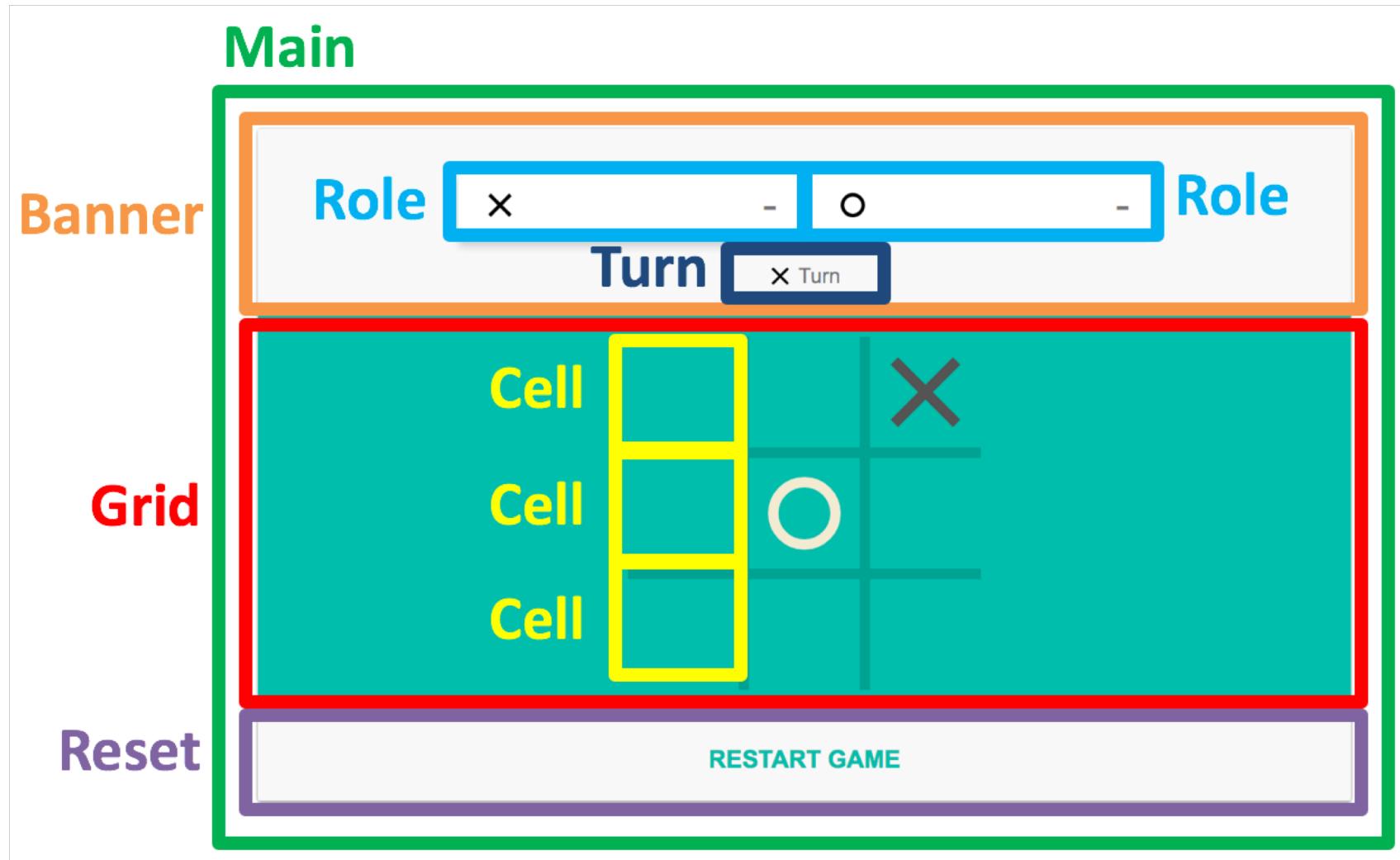
```
export default class Board extends Component {
  static getRootClass() {
    return '.board';
  }

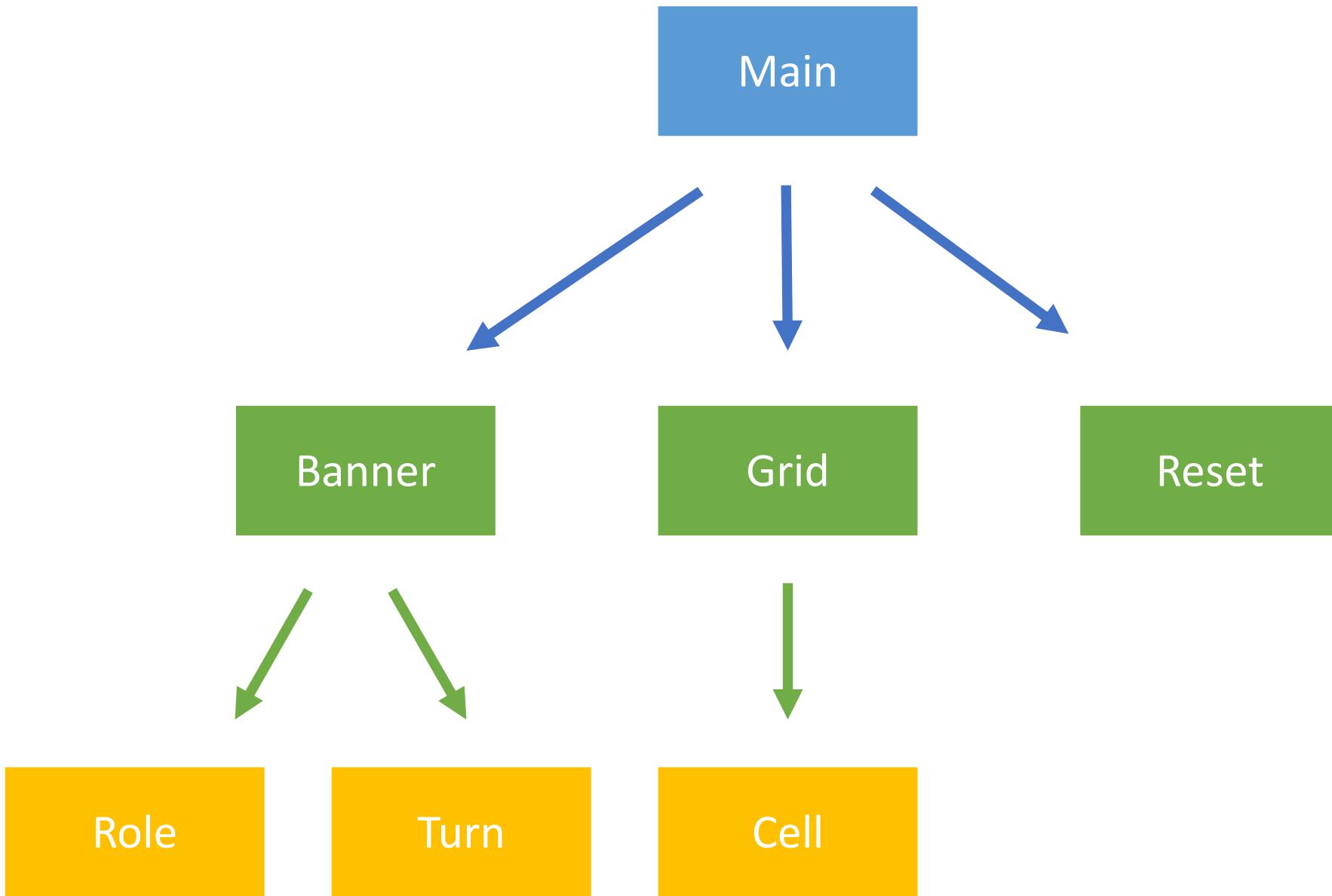
  constructor(root, color) {
    super(root);

    this.colorDisplay = root.querySelector('.color-picked');
    this.messageDisplay = root.querySelector('.message');
    this.reset(color);
  }

  showWrongMessage() {
    this.messageDisplay.textContent = "Try Again";
  }
}
```

Tic-Tac-Toe





Hint (1/3)

- In the Cell component you may have following functions :
 - *constructor*
 - maybe you need to add an event listener here
 - *reset*
 - when finish game or reset button clicked you need to reset cell
 - *handleDomClick*
 - when cell is clicked maybe you need to fire up
 - *occupyCell*
 - maybe you need to change the cell content when the cell is clicked
 - *isOccupied*
 - maybe you need to judge whether the cell is occupied
 - *isMatch*
 - maybe you need to judge whether the cell is occupied by O or X

Hint (2/3)

- In the Grid Component maybe you need to do following tasks :
 - Reset all cell
 - Handle cell click
 - Check whether the game is over (someone win / draw)

Hint (3/3)

- You don't need to follow our template.
- You don't need any css decoration.
- You can use <table></table> to present container of cell.
- Be sure you have all component .js file.
- **You can reuse the code of component based Color Game.**
- If you want to use Object.on() / Object.fire(), make sure you extend *Component*.
- Good Luck!