Introduction

Chats are a fashionable and effective tool for organizing events, thematic discussions. Many people prefer chats to traditional groups, as often a response can come instantly, and it is possible to receive a notification about each new message.

We are all used to regular chat. Chatting is sometimes quite boring. Therefore, we can conclude that chats need to expand their functionality. Integration into the chat application of the “Remembering Game” application will not only help brighten up the expectation of a user’s response, but also help to develop verbal and logical thinking. Do not forget that in addition to the obvious benefits, you can have a great time waiting for an answer. Since in the modern world a person spends a tremendous amount of time communicating in chat rooms and it is not uncommon for this communication to be meaningless, communication needs modification.

The purpose of this work is to develop an application that would help people not only chat, but also get practical benefits from it, by developing their cognitive abilities, such as memory, concentration and abstract thinking.

1.1 Chat description

There are several varieties of the software implementation of chats:

- HTTP or web chats.
- Chats using Adobe Flash technology.
- Chat programs for communication in local networks
- Chats using the client-server scheme
- Chats working in peer-to-peer networks.
- Chats using Push technology.
- Completely anonymous chats.

Anonymous chats differ from other types of chats in that the user does not need to register. You can come up with any name, including a duplicate. In anonymous chats, it is not possible to track the IP address.

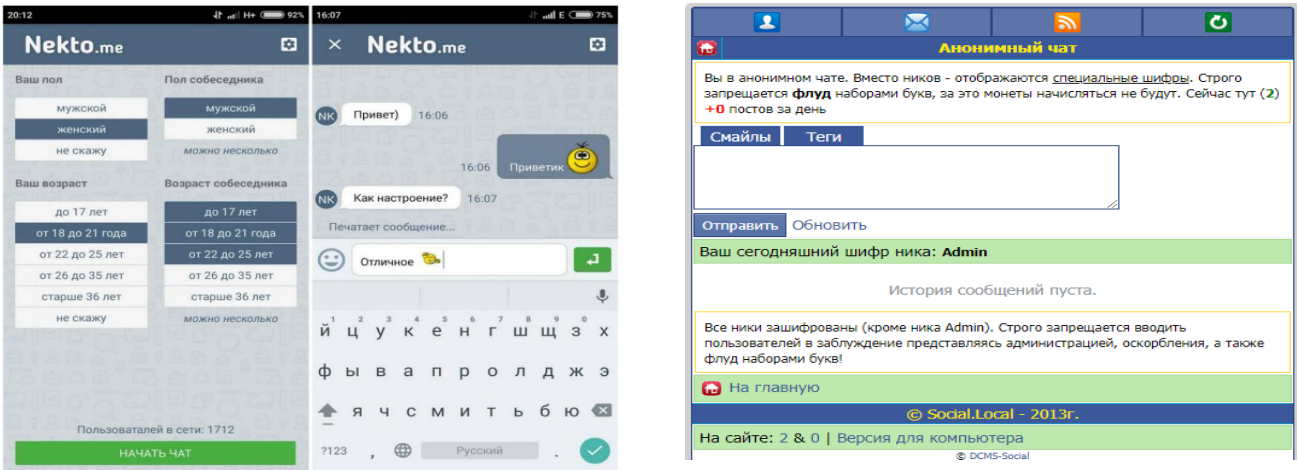


Figure 1.1 – anymous chats

HTTP chat. Such a chat looks like a regular web page where you can read the last few dozen phrases written by chat participants and moderators. The chat page automatically refreshes at the set frequency.

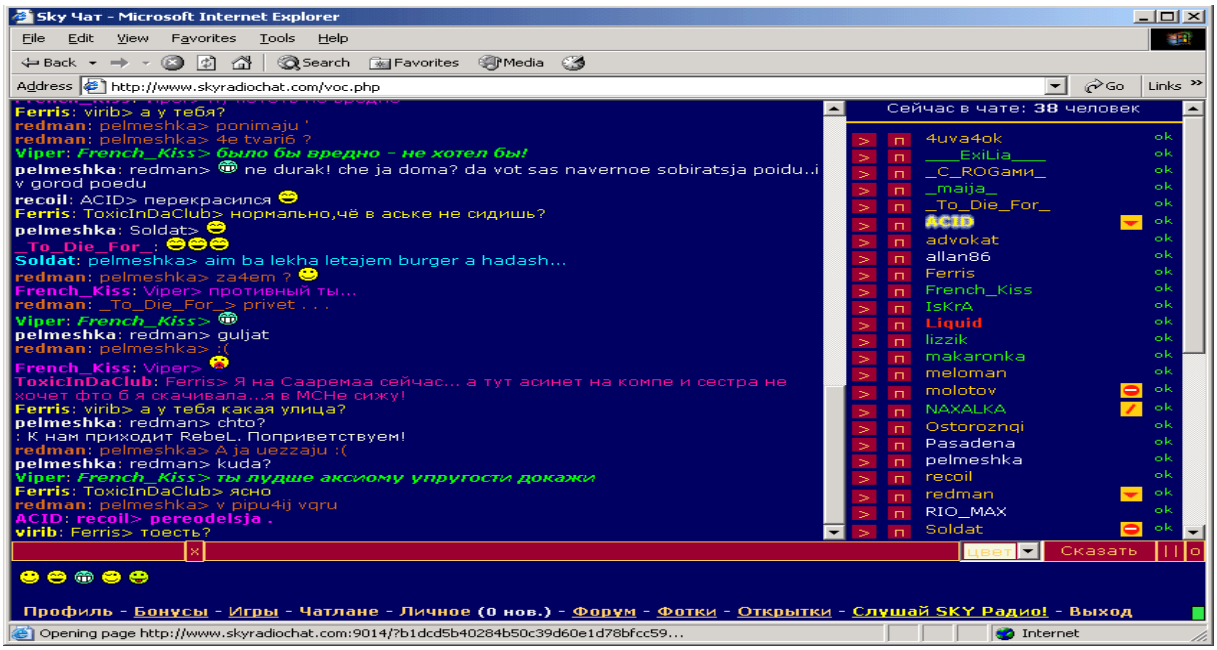


Figure 1.2 – HTTP chat

Chat with IRC technology. IRC provides both group and private communication.

There are several possibilities for group communication.

• A user can send a message to a list of users, and a list is sent to the server, the server selects individual users from it and sends a copy of the message to each of them.

• More effective is the use of channels. In this case, the message is sent directly to the server, and the server sends it to all users in the channel. Both in group and in private communication, messages are sent to clients via the shortest path and are visible only to the sender, recipient, and servers included in the shortest path. An example is shown in Figure 1.3. An example of an IRC network. Clients are marked in green, bots in blue, and bouncers in orange.

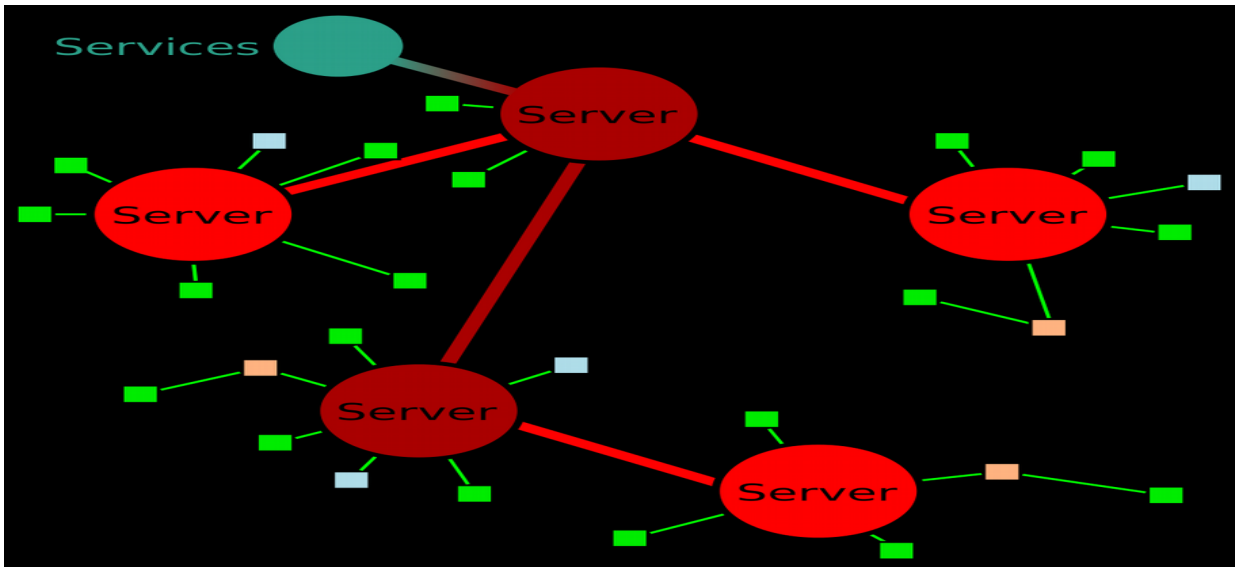


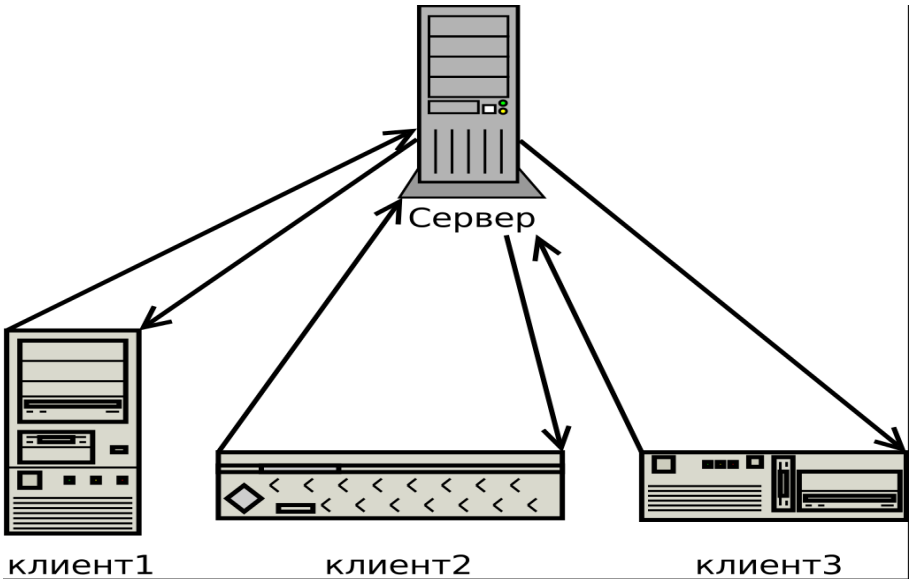
Figure1.3 – IRC-network diagramm

Chats using the client-server scheme. This allows you to use them in networks with complex configurations, as well as manage client applications (for example, Mychat, Jabber).

Lack of duplication of the program server code by client programs.

• Since all calculations are performed on the server, the requirements for computers on which the client is installed are reduced.

• All data is stored on a server, which, as a rule, is protected much better than most clients. It is easier to organize authorization control on the server to allow access to data only to clients with the appropriate access rights. An example is shown in figure 1.4.



1.2 «Memory game» algorithm description

The game to remember "- a card game, consisting in finding the same cards in the" shirt (the inside of the card. The outside is the suit of the card). " In general, the algorithm works as follows: a shirt and difficulty level are selected, then the difficulty level and shirt are remembered, an array is created depending on the selected difficulty level, the game starts, the array is mixed, an array of numbers is laid out, then pictures are superimposed on the numbers. Each card is given an id. As a result, it turns out that before the player's eyes there are cards turned to him with the back, randomly mixed.

The algorithm of the "Memory Games" method has the following sequence of actions:

1) a shirt is selected

2) the difficulty level is selected

3) difficulty level and shirt are remembered

4) an array is created depending on the selected difficulty level

5) the game begins

6) the array is mixed

7) the array of numbers is laid out

8) images are superimposed on numbers

2 Developing a project

Object-oriented programming is by far the most popular, convenient, and efficient paradigm. Therefore, the design process described in terms of reference is advisable to carry out through the prism of object-oriented analysis and design.

The implemented application will consist of an HTML page with CSS styles containing two applications, as well as a node.js server, which should process client requests and send a response. The server will also render images and run game and connection loops. Communication with the server and manipulations should occur in real time, and therefore their intermediate results should be quickly displayed on the monitor screen. Additional graphics libraries were not used.

The following features will be available to the user:

- chatting without registration.
- Break the connection to the server by closing the page;
- Select the level of difficulty of the game;
- Choosing a shirt color;
- Card manipulation;

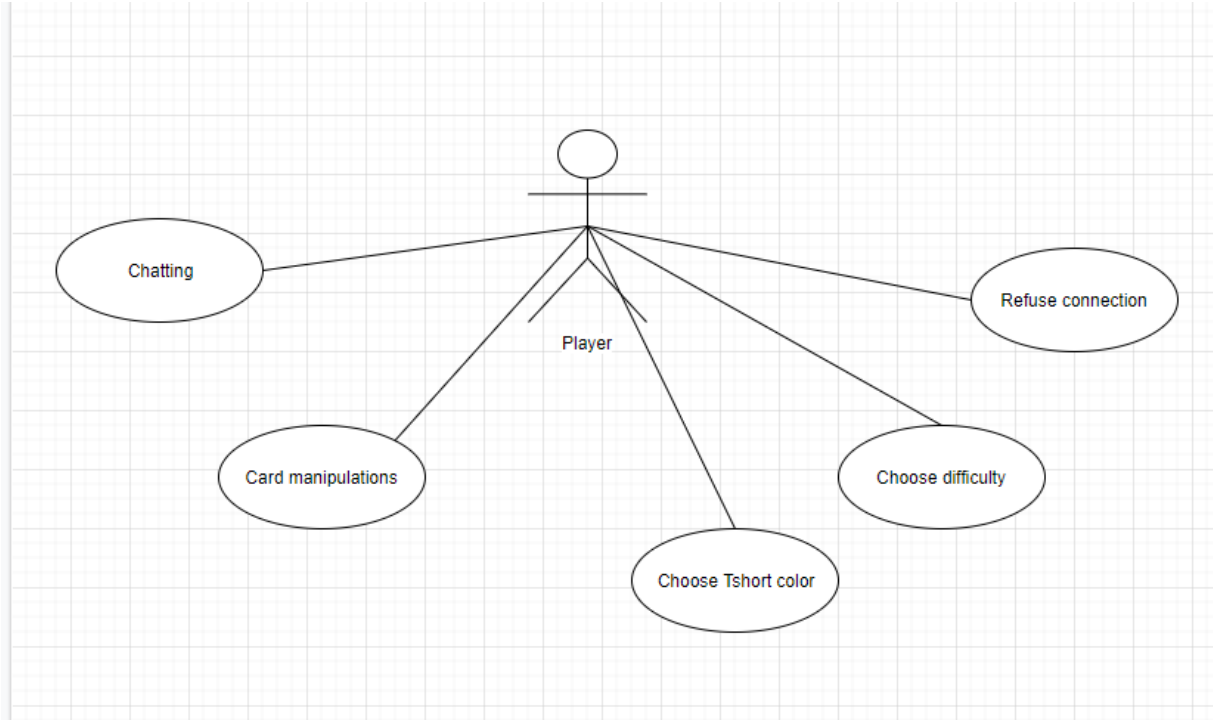


Figure 3.1 – Use case diagram

After analyzing the features that should be available to the user, you can determine what components the user toolbar should consist of: ◦ name input field;

◦ message input field;

◦ submit button;

◦ shirt color buttons;

◦ difficulty buttons

◦ play button.

◦ exit button

◦ card flip button

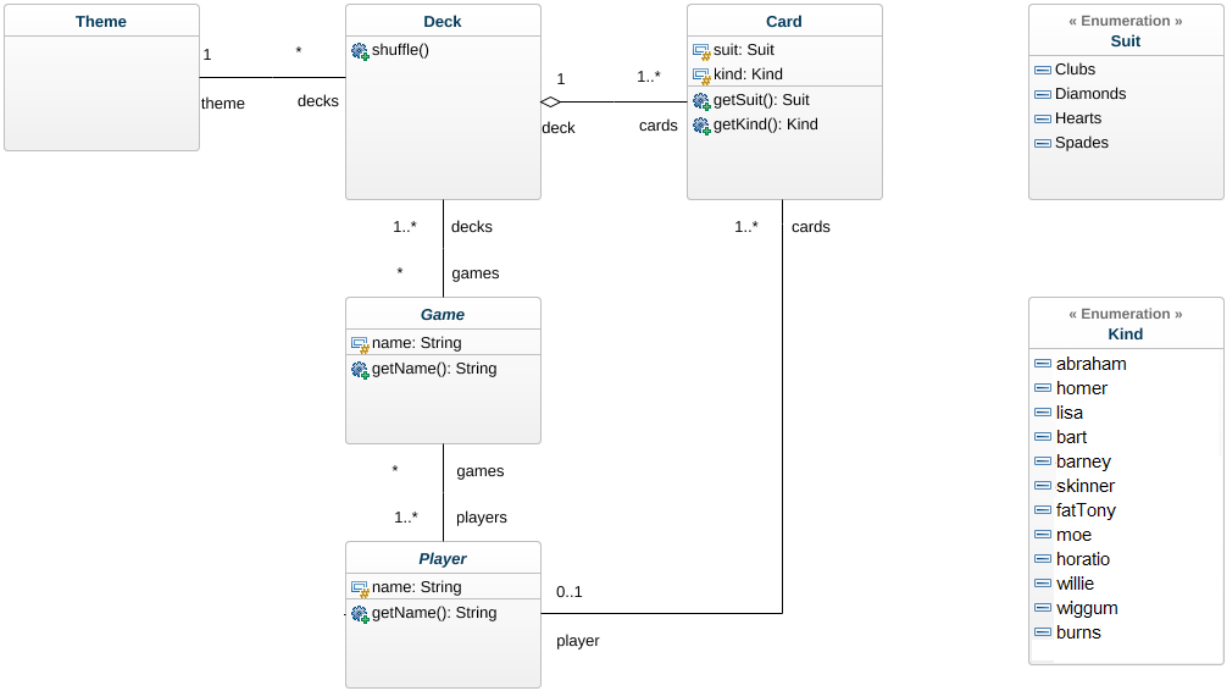


Рисунок 3.2 – Class diagramm

The completion of the system design phase leads the development process to the next stage: the implementation phase in the form of writing program code.

3 Creating working project

The implementation of this task involves the preliminary selection of specific development tools, such as a programming language and a library for writing applications with a graphical user interface. For this, the programming languages JavaScript were selected. "HTML", "CSS" and the editor "Visual Code". As well as express, websocket, node.js frameworks.

The result of the work is shown in Figures 4.1, 4.2, 4.3 and 4.4.

As a result of the implementation, all the requirements for the application at the stage of creating the preliminary design were met. The listing of the program is given in Appendix B.

4 Testing and debugging

The last stage of development is testing and debugging a working project. This stage, despite the fact that it completes the development process, begins at one of the intermediate stages of implementation and is carried out in parallel with the last.

For testing programs, there are special unit testing tools, or unit testing, which automate the assessment of the discrepancy between expected and actual results of program behavior. Each programming language has its own unit testing tool, and since the development was carried out using the JavaScript language, the Jest framework was selected for this purpose, designed to test applications in this language.

The test result showed that all the required functions work without errors and the client-server application is displayed correctly in browsers: Safari, Chrome, Microsoft Edge, Mozila Firefox. Using the analysis of the coverage of the program code, it was possible to find out that the percentage of coverage is 97.2%, which meets the generally accepted requirements, according to which the percentage of coverage should be more than 95% of the entire code.

Conclusion

As a result of the work, a client-server application was created, demonstrating the possibility of integrating a card game into chat, and also allowing people not only to chat, but also to get practical benefits from it by developing their cognitive abilities, such as memory, concentration and abstract thinking.

When developing a course project, the following steps were taken:

◦ domain analysis;
◦ project development;
◦ creating a working project;
◦ testing and debugging.

The finished project fully meets the technical specifications, as well as the model drawn up at the stage of creating the preliminary design, and successfully passed the test.

Список использованных источников

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Appendix A

(Important)

Application Demonstration

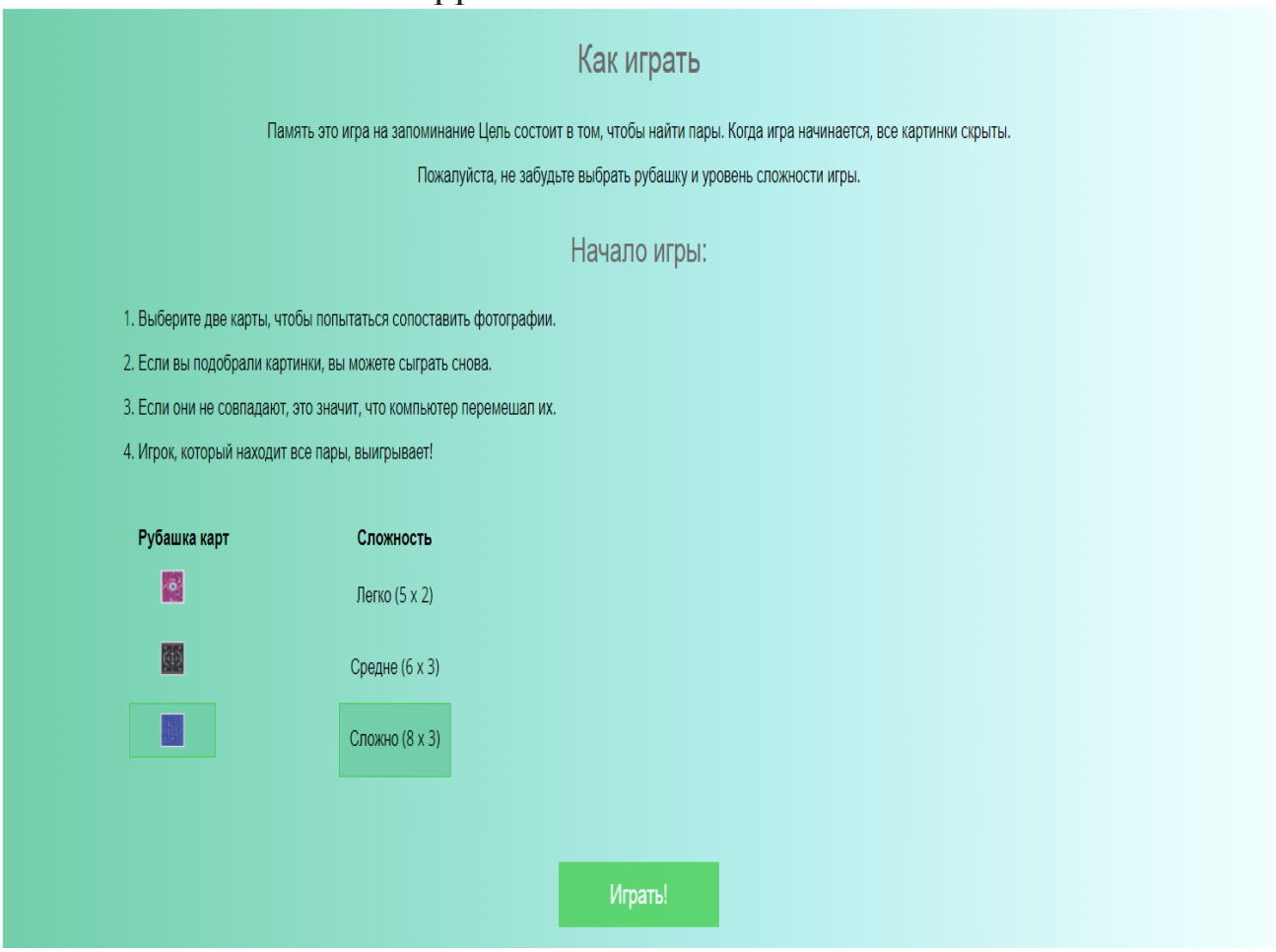


Figure A.1 – General view of the shirt selection interface and complexity

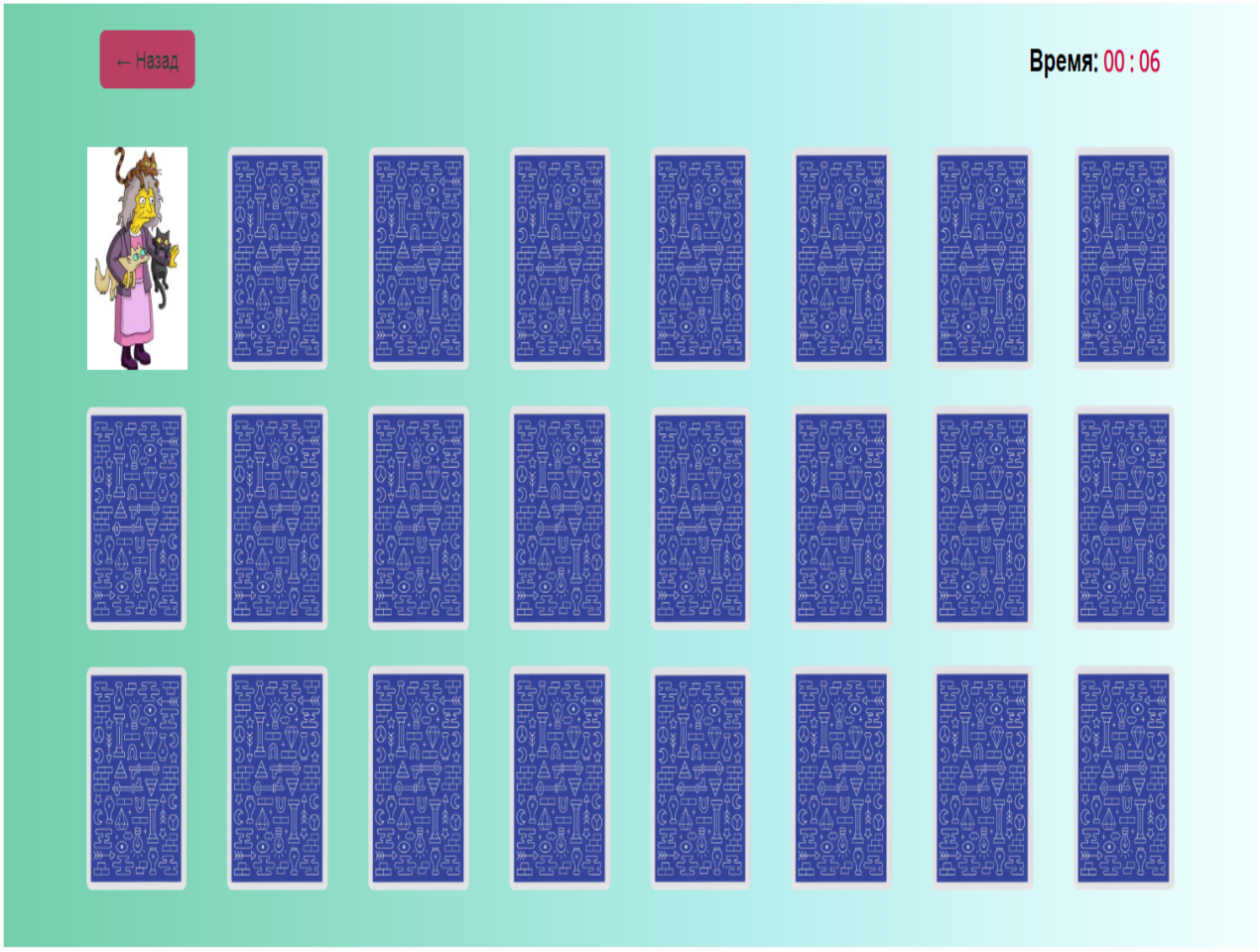
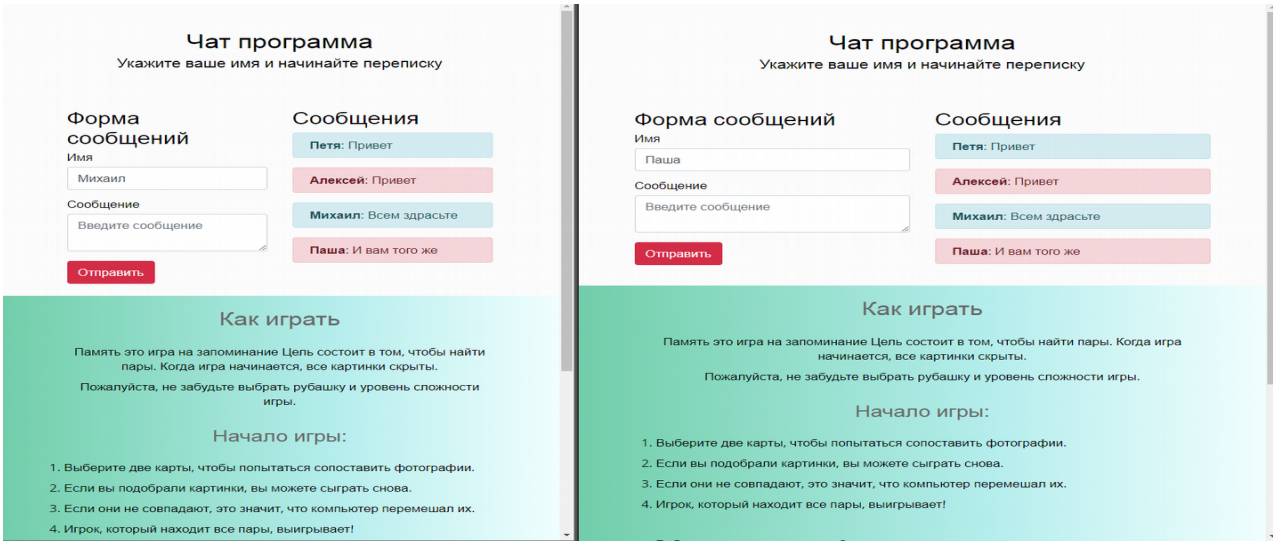


Figure A.2 – Game starts, user need to find two same cards.



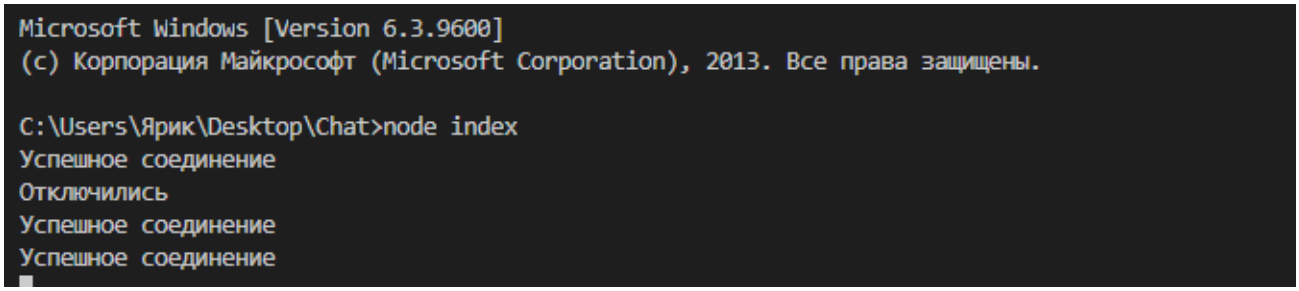


Рисунок А.4 – Info about connection

Appendix B

(Important)

Program Listing

File: game.js

```
  'use strict';

const ENTER_KEYCODE = 13;
const ESC_KEYCODE = 27;
const rules = document.querySelector('.rules');
const form = document.querySelector('.form');
const btn = document.querySelector('.form__btn');
const formListShirt = document.querySelector('.form__list--shirt');
const formImage = document.querySelectorAll('.form__image');
const formListLevel = document.querySelector('.form__list--level');
const formItemLevel = document.querySelectorAll('.form__text--level');

const cards = document.querySelector('.cards');
const cardsBtn = document.querySelector('.cards__btn');
const cardsItems = document.querySelector('.cards__items');
const timeInSeconds = document.getElementById('sec');
const timeInMinutes = document.getElementById('min');
let countTime;

const popupGame = document.querySelector('.popup--game');
const popupBtnExit = document.querySelector('.popup__btn--exit');
const failure = document.querySelector('.popup--failure');
const popupBtnFailure = document.querySelector('.popup__btn--failure');
const popupTime = document.querySelector('.popup__title--time'); // поле вывода результ
ата игроку
const popupBtnGame = document.querySelector('.popup__btn--game');
const popupTable = document.querySelector('.popup__table');

let firstTurnedCardIndex; // дефолтное значение индекса первой карты
let firstTurnedCardId; // дефолтное значение data-id первой карты

const player = { // объект с инфой игрока
  name: null,
  surname: null,
  email: null,
  score: null
};
let ratingList = []; // массив всех результатов
let ratingItem = []; // массив куда запишем имя и время
```

```
let memoryObj = {}; // запоминает какую выбрали рубашку и сложность для игры
let newArrCardsRandomAndSelected = []; // массив рандомных карт согласно опций
const dataOfCards = [{
    dataId: 1,
    backgroundImage: 'Barney_Gumble.jpg'
  },
  {
    dataId: 2,
    backgroundImage: 'Clancy_Wiggum.jpg'
  },
  {
    dataId: 3,
    backgroundImage: 'Bart_Simpson.jpg'
  },
  {
    dataId: 4,
    backgroundImage: 'Eleanor_Abernathy.jpg'
  },
  {
    dataId: 5,
    backgroundImage: 'Groundskeeper_Willie.jpg'
  },
  {
    dataId: 6,
    backgroundImage: 'Homer_Simpson.jpg'
  },
  {
    dataId: 7,
    backgroundImage: 'Horatio_McCallister.jpg'
  },
  {
    dataId: 8,
    backgroundImage: 'Fat_Tony.jpg'
  },
  {
    dataId: 9,
    backgroundImage: 'Mr_Burns.jpg'
  },
  {
    dataId: 10,
    backgroundImage: 'Moe_Szyslak.jpg'
  },
  {
    dataId: 11,
    backgroundImage: 'Abraham_Simpson.jpg'
  },
  {
    dataId: 12,
    backgroundImage: 'Seymour_Skinner.jpg'
  }
];
```

```
// функция рандомного перемешивания
Array.prototype.shuffle = function () {
 for (let i = this.length - 1; i >= 0; i--) {
  let randomIndex = Math.floor(Math.random() * (i + 1));
  let itemAtIndex = this[randomIndex];
  this[randomIndex] = this[i];
  this[i] = itemAtIndex;
 }
 return this;
}

// функция создания рандомного массива согласно выбранного уровня
function randomMixArrays(start, end) {
 let arrCut = dataOfCards.slice(start, end);
 let arrCopy = arrCut.slice();
 newArrCardsRandomAndSelected = arrCut.concat(arrCopy);
 newArrCardsRandomAndSelected.shuffle();
 return newArrCardsRandomAndSelected;
}

const fragment = document.createDocumentFragment();
const cardsItem = document.createElement('img');
fragment.appendChild(cardsItem);
cardsItem.classList.add('cards__item');

// функция начала игры
function init(obj) {
 // рандомное перемешивание первонач массива
 dataOfCards.shuffle();
 // поменять рубашку карт согласно наличию класса form__active
 for (let i = 0; i < formImage.length; i++) {
  if (formImage[i].classList.contains('form__active')) {
   obj.style.backgroundImage = "url('./img/" + i + ".png')";
   obj.classList.remove('cards__item--turned'); // у всех карт убрать классы переворачив
ания
   memoryObj.shirt = obj.style.backgroundImage; // сохраняем в св-во объекта инфу о в
ыбраной рубашке
  }
 }
 // выложить карты (+новый класс) согласно наличию класса form__active
 if (formItemLevel[1].classList.contains('form__active')) {
  randomMixArrays(0, 9); // добавить 18 карт
  addCards(); // добавление карт на поле
 } else if (formItemLevel[2].classList.contains('form__active')) {
  randomMixArrays(); // добавить 24 карты
  addCards();
 } else {
  randomMixArrays(0, 5); // добавить 10 карт
  addCards();
 }
 return memoryObj; // возврат объекта с инфой о выбранной рубашке и уровне сложно
сти
}
```

```
// функция отрисовки каждой карты
let renderCard = function (card, index) {
 const newCard = document.createElement('img');
 newCard.dataset.id = newArrCardsRandomAndSelected[index].dataId; // каждой карте д
аём id
 newCard.dataset.bg = newArrCardsRandomAndSelected[index].backgroundImage; // сохр
яняем картинку в атрибут data-bg
 newCard.style.backgroundImage = memoryObj.shirt;
 newCard.src = 'img/transparent.png';
 return newCard;
};

// функция добавления карт на поле
let addCards = function () {
 for (let i = 0; i < newArrCardsRandomAndSelected.length; i++) {
  let elem = renderCard(newArrCardsRandomAndSelected[i], i);
  elem.className = 'cards__item  cards__item--medium-difficulty';
  if (newArrCardsRandomAndSelected.length < 18) {
   elem.className = 'cards__item  cards__item--low-difficulty';
  }
  if (newArrCardsRandomAndSelected.length > 18) {
   elem.className = 'cards__item  cards__item--hard-difficulty';
  }
  cardsItems.appendChild(elem); // добавляем карты на поле
 }
};

// таймер
function calcTime(sec, min, zeroing) { // при наличии 3-го парам-ра обнуляется таймер
 sec = Number(timeInSeconds.textContent);
 min = Number(timeInMinutes.textContent);
 sec++;
 if (zeroing) {
  sec = 0;
  min = 0;
 }
 if (sec >= 60) {
  sec = 0;
  min++;
 }
 if (sec < 10) {
  sec = '0' + sec;
 }
 if (min < 10) {
  min = '0' + min;
 }
 timeInSeconds.textContent = sec;
 timeInMinutes.textContent = min;
}

// функция выхода из игрового поля
function closeCardsField() {
```

```
  cards.style.display = 'none';
  rules.style.display = 'block';
  form.style.display = 'block';
  cardsItems.innerHTML = ''; // удаление карт
}

// функция вывода поздравлений
function outputResult() {
  clearInterval(countTime); // остановка таймера
  popupTime.textContent = min.textContent + ' : ' + sec.textContent; // вывод результата
таймера
  if (!popupGame.classList.contains('popup--show')) {
    popupGame.classList.add('popup--show');
  }

  // заполняем профиль игрока в объект и добавляем в хранилище
  player.name = document.getElementsByName('name')[0].value;
  player.surname = document.getElementsByName('surname')[0].value;
  player.email = document.getElementsByName('email')[0].value;
  player.score = +timeInMinutes.textContent * 60 + +timeInSeconds.textContent; // перев
од в секунды
  window.localStorage.setItem('player', JSON.stringify(player)); // в хранилище будет доба
влено значение

  // добавляем время игрока в массив и сохраняем таблицу 10-ти лучших в хранилище
  ratingList = JSON.parse(window.localStorage.getItem('ratingList')); // вернёт массив знач
ений лежащих в хранилище
  if (!ratingList) {
    ratingList = [];
  }
  if (ratingList.length == 10) {
    ratingList.sort(function (a, b) {
      return a[1] - b[1];
    });
    ratingList = ratingList.slice(0, 9);
  }

  const nameUser = document.getElementsByName('name')[0].value;
  let scoreUser = +timeInMinutes.textContent * 60 + +timeInSeconds.textContent; // перев
од в секунды
  ratingItem[0] = nameUser;
  ratingItem[1] = scoreUser;
  ratingList.push(ratingItem);

  if ((ratingList.length > 0) && ratingList[ratingList.length - 1][1] > scoreUser) {
    ratingList[ratingList.length - 1][0] = nameUser;
    ratingList[ratingList.length - 1][1] = scoreUser;
  }
  if (ratingList.length > 1) {
    ratingList.sort(function (a, b) {
      return a[1] - b[1];
    });
  }
```

```
 window.localStorage.setItem('ratingList', JSON.stringify(ratingList)); // в хранилище будет добавлено значение

 // отрисовываем таблицу результатов
 const ratingTable = document.createElement('table');
 const headRow = document.createElement('tr');
 ratingTable.appendChild(headRow);
 ratingTable.classList.add('popup__table-tag');

 // отрисовываем шапку
 for (let i = 0; i < 3; i++) {
  const headCell = document.createElement('th');
  headCell.classList.add('popup__cell');
  if (i == 0) headCell.innerHTML = '№';
  if (i == 1) headCell.innerHTML = 'Name';
  if (i == 2) headCell.innerHTML = 'Time';
  headRow.appendChild(headCell);
 }

 for (let i = 0; i < 10; i++) {
  const tableRow = document.createElement('tr');
  ratingTable.appendChild(tableRow);
  for (let j = 0; j < 3; j++) {
   const tableCell = document.createElement('td');
   if (j == 0) tableCell.innerHTML = `${i + 1}`; // внести номер позиции
   if (ratingList[i]) {
    if (j == 1) tableCell.innerHTML = `${ratingList[i][0]}`; // внести имя
    if (j == 2) tableCell.innerHTML = `${ratingList[i][1]}`; // внести время
   }
   tableCell.classList.add('popup__cell');
   tableRow.appendChild(tableCell);
  }
 }
 popupTable.appendChild(ratingTable);
}

// обработчик поворота карты
cardsItems.addEventListener('click', function (e) {
 if (e.target.classList.contains('cards__item--turned') && !
e.target.classList.contains('cards__items')) {
  e.target.style.backgroundImage = memoryObj.shirt; // смена картинки на рубашку
  e.target.classList.toggle('cards__item--turned');
  firstTurnedCardId = null; // удаляем id первой карты из глобальной области видимост
и
  firstTurnedCardIndex = null; // удаляем индекс первой карты из глобальной области в
идимости

 } else if (!e.target.classList.contains('cards__items')) {
  e.target.classList.toggle('cards__item--turned');
  setTimeout(function () {
   e.target.style.backgroundImage = "url('./img/" + e.target.getAttribute('data-bg') + "'), u
rl('./img/white.png')";
  }, 300);
```

```
  const arrOfCards = document.querySelectorAll('.cards__item'); // массив карт
  let count = 0; // счётчик для кол-ва открытых карт

  for (let i = 0; i < arrOfCards.length; i++) {
   if (arrOfCards[i].classList.contains('cards__item--turned')) {
    count++;
   }
   if (count == 1 && arrOfCards[i].classList.contains('cards__item--turned')) { // находим п
ервую открытую карту и сохраняем её id
    if (!firstTurnedCardId) { // если индекса первой карты не задан, то задаём id перво
й карты
     firstTurnedCardId = arrOfCards[i].getAttribute('data-id');
    }
    if (!firstTurnedCardIndex) { // если индекса первой карты не задан, то задаём
     firstTurnedCardIndex = i;
    }
   }
   if (count == 2) { // если уже есть 2 открытые карты

    if (e.target.getAttribute('data-id') == firstTurnedCardId) { // сравниваем id активной к
арты и открытой, если они равны
     setTimeout(function () {
      e.target.style.visibility = 'hidden'; // скрываем вторую карту
      e.target.classList.remove('cards__item--turned');
      e.target.classList.remove('cards__item'); // убираем из массива
      arrOfCards[firstTurnedCardIndex].style.visibility = 'hidden'; // скрываем первую кар
ту
      arrOfCards[firstTurnedCardIndex].classList.remove('cards__item--turned');
      arrOfCards[firstTurnedCardIndex].classList.remove('cards__item'); // убираем из мас
сива
      firstTurnedCardId = null; // удаляем id первой карты
      firstTurnedCardIndex = null; // удаляем индекс первой карты из глобальной облас
ти видимости
     }, 500);
     if (arrOfCards.length < 4) { // вывод поздравлений игроку
      setTimeout(function () {
       outputResult();
      }, 700);
     }
    } else { // если id не совпали
     setTimeout(function () {
      e.target.style.backgroundImage = memoryObj.shirt; // закрываем вторую карту
      e.target.classList.toggle('cards__item--turned');
      arrOfCards[firstTurnedCardIndex].style.backgroundImage = memoryObj.shirt; // закр
ываем первую карту
      arrOfCards[firstTurnedCardIndex].classList.toggle('cards__item--turned');
      firstTurnedCardId = null; // удаляем id первой карты из глобальной области види
мости
      firstTurnedCardIndex = null; // удаляем индекс первой карты из глобальной облас
ти видимости
     }, 700);
    }
    break;
```

```
    }
   }
  }
});

// обработчики выделения выбранной опции
formListShirt.addEventListener('click', function (e) {
 for (let i = 0; i < formImage.length; i++) {
  formImage[i].classList.remove('form__active');
 }
 e.target.classList.toggle('form__active');
 formListShirt.classList.remove('form__active');
});

formListLevel.addEventListener('click', function (e) {
 for (let i = 0; i < formItemLevel.length; i++) {
  formItemLevel[i].classList.remove('form__active');
 }
 e.target.classList.add('form__active');
 formListLevel.classList.remove('form__active');
});

// валидация на вход в игру
btn.addEventListener('click', function (event) {
 event.preventDefault();
 rules.style.display = 'none';
 form.style.display = 'none';
 cards.style.display = 'block';
 init(cardsItem); // инициализация игры
 countTime = setInterval(calcTime, 1000); // запуск таймера

});

// обработчики досрочного выхода из игрового поля
let cardsBtnClickHandler = function () {
 clearInterval(countTime); // остановка таймера
 calcTime(0, 0, 1); // обнуление таймера
 closeCardsField(); // выход из игрового поля
 cards.removeEventListener('click', cardsBtnClickHandler);
}

let enterPressHandler = function (event) {
 clearInterval(countTime);
 if (event.keyCode === ENTER_KEYCODE) {
  closeCardsField();
  cards.removeEventListener('keydown', enterPressHandler);
 }
}

cardsBtn.addEventListener('click', cardsBtnClickHandler);
cardsBtn.addEventListener('keydown', enterPressHandler);

// обработчик закрытия попапа
```

```
popupBtnFailure.addEventListener('click', function () {
  if (failure.classList.contains('popup--show')) {
    failure.classList.remove('popup--show');
  }
});

// обработчик закрытия попапов ESC
window.addEventListener('keydown', function (event) {
  if (event.keyCode === ESC_KEYCODE) {
    if (popupGame.classList.contains('popup--show')) {
      popupGame.classList.remove('popup--show');
      clearInterval(countTime); // остановка таймера
      closeCardsField(); // выход из игрового поля
    }
    if (failure.classList.contains('popup--show')) {
      failure.classList.remove('popup--show');
    }
  }
});

// обработчик для новой игры
popupBtnGame.addEventListener('click', function (event) {
  if (popupGame.classList.contains('popup--show')) {
    popupGame.classList.remove('popup--show');
  }
  cardsItems.innerHTML = ''; // удаление карт
  calcTime(0, 0, 1); // обнуление таймера
  init(cardsItem); // инициализация игры
  countTime = setInterval(calcTime, 1000);
});

// обработчик для выхода из игры
popupBtnExit.addEventListener('click', function () {
  if (popupGame.classList.contains('popup--show')) {
    popupGame.classList.remove('popup--show');
  }
  calcTime(0, 0, 1); // обнуление таймера
  closeCardsField(); // выход из игрового поля
});
```

Файл: game.js

```
<!DOCTYPE htm

|>

<html lang="ru">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <meta http-equiv="X-UA-Compatible" content="ie=edge" />
```

```
  <!-- Подключение Bootstrap чтобы все выглядело красиво -->
  <link
    rel="stylesheet"
    href="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/css/bootstrap.min.css"
  />
  <link href="/css/style.css" rel="stylesheet" />
  <title>ChatGame</title>
  <!-- Свои стили -->
  <style>
    body {
      background: #fcfcfc;
    }
  </style>
</head>

<body>
  <!---------------------------CHAT---------------------------------------->
  <!-- Основная часть страницы -->
  <div class="container">
    <div class="py-5 text-center">
      <h2>Чат программа</h2>
      <p class="lead">Укажите ваше имя и начинайте переписку</p>
    </div>
    <div class="row">
      <div class="col-6">
        <!-- Форма для получения сообщений и имени -->
        <h3>Форма сообщений</h3>
        <form id="messForm">
          <label for="name">Имя</label>
          <input
            type="text"
            name="name"
            id="name"
            placeholder="Введите имя"
            class="form-control"
          />
          <br />
          <label for="message">Сообщение</label>
          <textarea
            name="message"
            id="message"
            class="form-control"
            placeholder="Введите сообщение"
          ></textarea>
          <br />
          <input type="submit" value="Отправить" class="btn btn-danger" />
        </form>
      </div>
      <div class="col-6">
        <h3>Сообщения</h3>
        <!-- Вывод всех сообщений будет здесь -->
        <div id="all_mess"></div>
      </div>
```

```
    </div>
  </div>
  <!-- Подключаем jQuery, а также Socket.io -->
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script
>
  <script src="/socket.io/socket.io.js"></script>
  <script>
    // У каждого пользователя будет случайный стиль для блока с сообщенями,
    // поэтому в этом кусочке кода мы получаем случайные числа
    var min = 1;
    var max = 6;
    var random = Math.floor(Math.random() * (max - min)) + min;

    // Устаналиваем класс в переменную в зависимости от случайного числа
    // Эти классы взяты из Bootstrap стилей
    var alertClass;
    switch (random) {
      case 1:
        alertClass = "secondary";
        break;
      case 2:
        alertClass = "danger";
        break;
      case 3:
        alertClass = "success";
        break;
      case 4:
        alertClass = "warning";
        break;
      case 5:
        alertClass = "info";
        break;
      case 6:
        alertClass = "light";
        break;
    }

    // Функция для работы с данными на сайте
    $(function() {
      // Включаем socket.io и отслеживаем все подключения
      var socket = io.connect();
      // Делаем переменные на:
      var $form = $("#messForm"); // Форму сообщений
      var $name = $("#name"); // Поле с именем
      var $textarea = $("#message"); // Текстовое поле
      var $all_messages = $("#all_mess"); // Блок с сообщениями

      // Отслеживаем нажатие на кнопку в форме сообщений
      $form.submit(function(event) {
        // Предотвращаем классическое поведение формы
        event.preventDefault();
        // В сокет отсылаем новое событие 'send mess',
        // в событие передаем различные параметры и данные
```

```
            socket.emit("send mess", {
              mess: $textarea.val(),
              name: $name.val(),
              className: alertClass
            });
            // Очищаем поле с сообщением
            $textarea.val("");
          });

          // Здесь отслеживаем событие 'add mess',
          // которое должно приходить из сокета в случае добавления нового сообщен
ия
          socket.on("add mess", function(data) {
            // Встраиваем полученное сообщение в блок с сообщениями
            // У блока с сообщением будет тот класс, который соответвует пользовател
ю что его отправил
            $all_messages.append(
              "<div class='alert alert-" +
                data.className +
                "'><b>" +
                data.name +
                "</b>: " +
                data.mess +
                "</div>"
            );
          });
        });
    </script>
    <!-------------------------GAME-------------------------------->
    <section class="rules">
      <div class="rules__wrapper">
        <h1 class="rules__title">Как играть</h1>
        <p class="rules__text  rules__text--general">
          Память это игра на запоминание Цель состоит в том, чтобы найти пары.
          Когда игра начинается, все картинки скрыты.
        </p>
        <p class="rules__text  rules__text--general">
          Пожалуйста, не забудьте выбрать рубашку и уровень сложности игры.
        </p>
        <h2 class="rules__title  rules__title--play">Начало игры:</h2>
        <ol class="rules__text-conteiner">
          <li class="rules__text">
            Выберите две карты, чтобы попытаться сопоставить фотографии.
          </li>
          <li class="rules__text">
            Если вы подобрали картинки, вы можете сыграть снова.
          </li>
          <li class="rules__text">
            Если они не совпадают, это значит, что компьютер перемешал их.
          </li>
          <li class="rules__text">
            Игрок, который находит все пары, выигрывает!
          </li>
```

```
    </ol>
  </div>
</section>

<section class="form">
  <div class="form__wrapper">
    <div class="form__option-container">
      <div class="form__option">
        <p class="form__title  form__title--option">Рубашка карт</p>
        <ul class="form__list  form__list--shirt">
          <li class="form__text">
            <img
              class="form__image  form__active"
              src="/img/0.png"
              alt="option 1"
            />
          </li>
          <li class="form__text">
            <img class="form__image" src="/img/1.png" alt="option 2" />
          </li>
          <li class="form__text">
            <img class="form__image" src="/img/2.png" alt="option 3" />
          </li>
        </ul>
      </div>

      <div class="form__option">
        <p class="form__title  form__title--option">Сложность</p>
        <ul class="form__list  form__list--level">
          <li class="form__text  form__text--level  form__active">
            Легко (5 x 2)
          </li>
          <li class="form__text  form__text--level">Средне (6 x 3)</li>
          <li class="form__text  form__text--level">Сложно (8 x 3)</li>
        </ul>
      </div>
    </div>

    <div class="form__btn-container">
      <button class="form__btn">Играть!</button>
    </div>
  </div>
</section>

<section class="cards">
  <div class="cards__wrapper">
    <div class="cards__nav-container">
      <button class="cards__btn" type="submit">← Назад</button>
      <p class="cards__text">
        Время:
        <span class="cards__timer">
          <span id="min">00</span> : <span id="sec">00</span>
        </span>
```

```
            </p>
          </div>
          <div class="cards__items"></div>
        </div>
      </section>

      <section class="popup  popup--game">
        <div class="popup__wrapper">
          <h3 class="popup__title">Поздравляем!</h3>
          <h3 class="popup__title">Ваше время:</h3>
          <p class="popup__title  popup__title--time"></p>
          <div class="popup__table"></div>
          <button class="popup__btn  popup__btn--game" type="submit">
            Новая игра
          </button>
          <button class="popup__btn  popup__btn--exit" type="submit">
            Выйти
          </button>
        </div>
      </section>

      <script src="js/game.js"></script>
    </body>
</html>
```

Файл style.css

```
* {
  margin: 0;
  padding: 0;
}

body {
  width: 100%;
  height: 100%;
  line-height: 1;
  font-family: "Open sans", Arial, sans-serif;
  font-size: 16px;
  font-weight: 400;
  color: #000;
  background-image: linear-gradient(to right, #A9A9A9, #D3D3D3, #F5F5F5);
}

.cards {
  position: relative;
  display: none;
  width: 100%;
  max-width: 1500px;
  margin: 0 auto;
  margin-top: 20px;
```

```
 margin-bottom: 20px;
 background-image: linear-gradient(to right, #66CDAA 0%, #AFEEEE 60%, #F0FFFF 100
%);
 z-index: 1;
}

.cards__wrapper {
 width: 90%;
 margin: 0 auto;
 padding: 20px 0 30px;
}

.cards__nav-container {
 display: flex;
 justify-content: space-between;
 margin-bottom: 30px;
 padding: 0 3%;
}

.cards__btn {
 display: block;
 padding: 10px 20px;
 text-align: center;
 border: none;
 font-size: 18px;
 font-weight: 400;
 background-color: #DC143C;
 color: #000;
 border-radius: 7px;
 text-decoration: none;
 cursor: pointer;
 overflow: hidden;
 filter: opacity(70%);
}

.cards__btn:hover {
 filter: opacity(85%);
}

.cards__btn:active {
 filter: opacity(100%);
}

.cards__text {
 text-align: right;
 margin: 10px 0;
 font-size: 24px;
 font-weight: 700;
}

.cards__timer { /* таймер */
 font-size: 22px;
 color: #DC143C;
```

```
}

.cards__items {
 width: 100%;
 margin: 0 auto;
 display: flex;
 flex-wrap: wrap;
 justify-content: space-between;
}

.cards__item {
 margin: 1% 0;
 cursor: pointer;
 background-repeat: no-repeat;
 background-size: contain;
 background-position: center;
}

.cards__item--low-difficulty { /* 5x2 */
 width: 20%;
 height: 20%;
}

.cards__item--medium-difficulty { /* 6x3 */
 width: 16.66%;
 height: 16.66%;
}

.cards__item--hard-difficulty { /* 8x3 */
 width: 12.5%;
 height: 12.5%;
}

@keyframes rotate {
 0% {
  transform: rotate3d(0, 1, 0, 0deg);
 }
 50% {
  transform: rotate3d(0, 1, 0, 90deg);
 }
 100% {
  transform: rotate3d(0, 1, 0, 0deg);
 }
}

.cards__item--turned {
 animation-name: rotate;
 animation-duration: 0.5s;
 animation-fill-mode: forwards;
}
@font-face {
 font-family: 'Open sans';
 src: url('../fonts/opensans-regular-webfont.woff2') format('woff2'),
```

```
      url('../fonts/opensans-regular-webfont.woff') format('woff');
  font-weight: normal;
  font-style: normal;
}
.form {
  position: relative;
  width: 100%;
  max-width: 1500px;
  margin: 0 auto;
  margin-bottom: 20px;
  background-image: linear-gradient(to right, #66CDAA 0%, #AFEEEE 60%, #F0FFFF 100
%);
}

.form__wrapper {
  width: 80%;
  display: flex;
  justify-content: space-between;
  flex-wrap: wrap;
  margin: 0 auto;
  padding-bottom: 30px;
}

.form__form-container {
  width: 360px;
}

.form__items {
  width: 100%;
  border: 0;
  text-align: right;
}

.form__item {
  display: block;
  width: 100%;
  margin: 25px 0;
}

.form__title {
  margin: 0 10px;
  font-weight: 700;
}

.form__title--option {
  text-align: center;
  margin-bottom: 10px;
}

.form__input {
  width: 230px;
  height: 36px;
  padding: 10px;
```

```
  text-align: left;
  border: 1px solid #c8c6c6;
  outline: 0;
  box-sizing: border-box;
  overflow: hidden;
}

.form__input:focus {
  border-color: #32CD52;
}

.form__option-container {
  display: flex;
  justify-content: space-around;
  flex-direction: row;
  width: 50%;
  min-width: 400px;
}

.form__option:last-child {
  margin-right: auto;
  margin-left: 20%;
}

.form__text {
  display: block;
  width: 100px;
  height: 55px;
  text-align: center;
  outline: 0;
  box-sizing: border-box;
}

.form__text:hover {
  outline: 1px solid #32CD52;
}

.form__text:active {
  background-color: #66CDAA;
}

.form__text--level {
  width: 130px;
  padding: 18px 0;
}

.form__active {
  /* при срабатывании обработчика событий */
  background-color: #66CDAA;
  outline: 1px solid #32CD52;
}

.form__image {
```

```
  width: 100px;
  height: 40px;
  padding: 7px 30px;
}

.form__btn-container {
  width: 100%;
  margin: 0 auto;
  padding-top: 50px;
}

.form__btn {
  display: block;
  margin: 0 auto;
  padding: 15px 60px;
  text-align: center;
  color: #fff;
  font-size: 20px;
  cursor: pointer;
  background-color: #32CD52;
  border: none;
  overflow: hidden;
  outline: none;
  filter: opacity(80%);
}

.form__btn:hover {
  filter: opacity(100%);
}

.form__btn:active {
  background-color: #228B22;
}.popup { /* в скрытом состоянии */
  display: none;
  position: fixed;
  width: 460px;
  left: 50%;
  top: 3%;
  transform: translate(-50%, -50%);
  z-index: 5;
}

.popup--show { /* Отображет popup */
  display: block;
}

.popup__wrapper {
  position: absolute;
  width: 100%;
  padding: 20px 50px 5px;
  background-color: white;
  box-shadow: 0 5px 20px 0 #32CD52;
  box-sizing: border-box;
```

```
}

.popup__wrapper--failure {
  box-shadow: 0 5px 20px 0 #DC143C;
}

.popup__title {
  margin-top: 14px;
  text-align: center;
  font-size: 30px;
  font-weight: 700;
}

.popup__title--time {
  color: #dc143c;
  margin-bottom: 30px;
}

.popup__table {
  max-width: 358px;
  margin: 0 auto;
  margin-bottom: 30px;
}

.popup__table-tag {
  max-width: 358px;
  margin: 0 auto;
  border-collapse: collapse;
}

.popup__cell {
  border: 1px solid #000;
  width: auto;
  min-width: 40px;
  max-width: 268px;
  overflow: hidden;
  padding: 3px 10px;
  text-overflow: ellipsis;
  box-sizing: border-box;
}

.popup__text {
  font-size: 30px;
  text-align: center;
  line-height: 24px;
  margin: 20px 0 40px;
}

.popup__text--failure {
  font-size: 24px;
}

.popup__btn {
```

```
  display: block;
  width: 250px;
  margin: 0 auto;
  margin-bottom: 30px;
  padding: 15px 40px;
  text-align: center;
  border: none;
  font-size: 24px;
  font-weight: 700;
  background-color: #DC143C;
  color: white;
  text-decoration: none;
  cursor: pointer;
  overflow: hidden;
  filter: opacity(70%);
}

.popup__btn:hover,
.popup__btn--game:hover {
  filter: opacity(85%);
}

.popup__btn:active,
.popup__btn--game:active {
  filter: opacity(100%);
}

.popup__btn--game {
  background-color: #32CD52;
}



.rules {
  position: relative;
  width: 100%;
  max-width: 1500px;
  margin: 0 auto;
  margin-top: 20px;
  background-image: linear-gradient(to right, #66CDAA 0%, #AFEEEE 60%, #F0FFFF 100
%);
}

.rules__wrapper {
  width: 80%;
  margin: 0 auto;
  padding: 20px 0 30px;
}

.rules__title {
  margin-bottom: 25px;
  text-align: center;
  font-size: 30px;
```

```
  color: #696969;
}

.rules__title--play {
  margin-top: 30px;
  font-size: 26px;
}

.rules__text-conteiner {
  width: 100%;
  max-width: 1080px;

}

.rules__text {
  margin: 10px;
  font-size: 16px;
  text-align: left;
  line-height: 1.5;
}

.rules__text--general {
  text-align: center;
}
@import "base.css";
@import "fonts.css";
@import "rules.css";
@import "form.css";
@import "cards.css";
@import "popup.css";
```