	Marwadi University **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: AWT (01CT1625)	**Aim: Database: Using MongoDB, build the CRUD operations with NodeJS.**	
Experiment No: 12	**Date:**	**Enrollment No: 92200133005**

AIM: **Database: Using MongoDB, build the CRUD operations with NodeJS.**

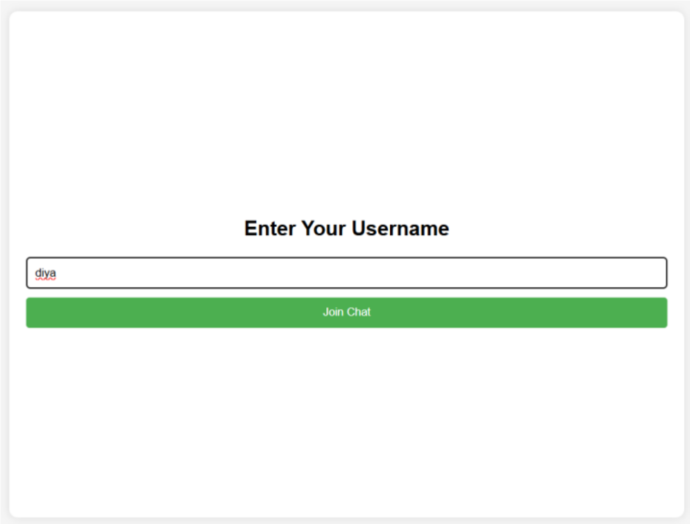
CODE:

```
// <script src="/socket.io/socket.io.js"></script>
  <script>
    // Current username
    let currentUsername = '';
    // Format timestamp
    function formatTimestamp(timestamp) {
      const date = new Date(timestamp);
      return date.toLocaleTimeString([], { hour: '2-digit', minute: '2-digit' });}
    // Handle username submission
    usernameForm.addEventListener('submit', (e) => {
      e.preventDefault();
      currentUsername = usernameInput.value.trim();
      if (currentUsername) {
        // Create user via API
        fetch('/api/users', {
          method: 'POST',
          headers: {
            'Content-Type': 'application/json'},
          body: JSON.stringify({ username: currentUsername })})
        .then(response => {
          if (response.status === 409) {
            // Username exists, just join
        return { success: true };}
      return response.json();})
    .then(data => {
      if (data.error) {
        alert(`Error: ${data.error}`);
        return;}          // Join the chat
      socket.emit('join', currentUsername);
      usernameScreen.style.display = 'none';
      chatScreen.style.display = 'flex';
      // Fetch online users
      fetchUsers();})
    .catch(error => {
      console.error('Error:', error);
      alert('An error occurred. Please try again.');  });}});
// Handle sending messages
chatForm.addEventListener('submit', (e) => {
  e.preventDefault();
  const message = messageInput.value.trim();
  if (message && currentUsername) {
    // Send message via API
    fetch('/api/messages', {
      method: 'POST',
      headers: {
        'Content-Type': 'application/json'  },
      body: JSON.stringify({ user: currentUsername, text: message })  })
    .then(response => response.json())
    .then(data => {
      if (data.error) {
        alert(`Error: ${data.error}`);
        return;}
      messageInput.value = '';
      messageInput.focus();})
    .catch(error => {
      console.error('Error:', error);
      alert('Failed to send message. Please try again.');  });}  });
// Fetch all messages
function fetchMessages() {
  fetch('/api/messages')
    .then(response => response.json())
    .then(messages => {
      chatMessages.innerHTML = '';
      messages.forEach(message => {
        displayMessage(message);});
      // Auto-scroll to the bottom
      chatMessages.scrollTop = chatMessages.scrollHeight;})
    .catch(error => {
      console.error('Error fetching messages:', error);});  }
// Fetch all users
```

```
function fetchUsers() {
  fetch('/api/users')
    .then(response => response.json())
    .then(users => {
      usersList.innerHTML = '';
      users.forEach(user => {
        const li = document.createElement('li');
        li.textContent = user.username;
        if (user.username === currentUsername) {
          li.textContent += ' (You)';
          li.style.fontWeight = 'bold';  }
        usersList.appendChild(li);});})
    .catch(error => {
      console.error('Error fetching users:', error);});}
// Display a message
function displayMessage(message) {
  const messageElement = document.createElement('div');
  if (message.user === 'System') {
    messageElement.classList.add('message', 'system-message');
    messageElement.innerHTML = `
      <div>${message.text}</div>
      <div class="timestamp">${formatTimestamp(message.timestamp)}</div>`;} else if (message.user === currentUsername) {
    messageElement.classList.add('message', 'user-message');
    messageElement.innerHTML = `
    <div class="actions">
      <button class="edit-btn" data-id="${message._id}">Edit</button>
      <button class="delete-btn" data-id="${message._id}">Delete</button>
    </div>
    <div>${message.text}</div>
    <div class="timestamp">${formatTimestamp(message.timestamp)}</div>`;
  // Add event listeners for edit and delete buttons
  setTimeout(() => {
    const editBtn = messageElement.querySelector('.edit-btn');
    const deleteBtn = messageElement.querySelector('.delete-btn');
    if (editBtn) {
      editBtn.addEventListener('click', function() {
        const messageId = this.getAttribute('data-id');
        openEditModal(messageId, message.text);});}
    if (deleteBtn) {
      deleteBtn.addEventListener('click', function() {
        const messageId = this.getAttribute('data-id');
        openDeleteModal(messageId);});}
  }, 0);
} else {
  messageElement.classList.add('message', 'other-message');
  messageElement.innerHTML = `
    <div><strong>${message.user}</strong>: ${message.text}</div>
    <div class="timestamp">${formatTimestamp(message.timestamp)}</div>`;}
  chatMessages.appendChild(messageElement);}
// Open edit modal
function openEditModal(messageId, text) {
  editMessageId.value = messageId;
  editMessage.value = text;
  editModal.style.display = 'flex';}
// Open delete modal
function openDeleteModal(messageId) {
  deleteMessageId.value = messageId;
  deleteModal.style.display = 'flex';}
// Edit form submit handler
editForm.addEventListener('submit', (e) => {
  e.preventDefault();
  const messageId = editMessageId.value;
  const newText = editMessage.value.trim();
  if (newText) {
    // Update message via API
    fetch(`/api/messages/${messageId}`, {
      method: 'PUT',
      headers: {
        'Content-Type': 'application/json'},
      body: JSON.stringify({ text: newText })})
    .then(response => response.json())
    .then(data => {
```

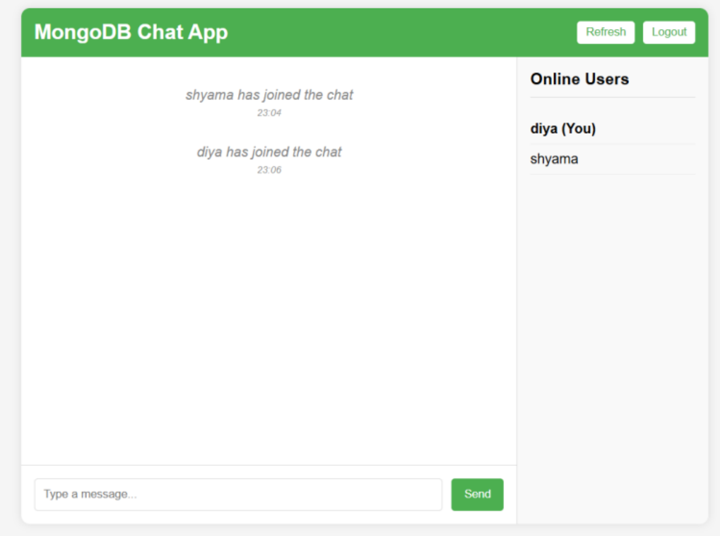
```
   if (data.error) {
    alert(`Error: ${data.error}`);
    return;}
   // Close modal
   editModal.style.display = 'none';})
  .catch(error => {
   console.error('Error:', error);
   alert('Failed to update message. Please try again.');});}  });
 // Cancel edit button handler
cancelEdit.addEventListener('click', () => {
 editModal.style.display = 'none';  });
// Delete confirmation handler
confirmDelete.addEventListener('click', () => {
 const messageId = deleteMessageId.value;
 // Delete message via API
 fetch(`/api/messages/${messageId}`, {
  method: 'DELETE'})
 .then(response => response.json())
 .then(data => {
  if (data.error) {
   alert(`Error: ${data.error}`);
   return;}
  // Close modal
  deleteModal.style.display = 'none';
  .catch(error => {
    console.error('Error:', error);
    alert('Failed to delete message. Please try again.');});  });
// Cancel delete button handler
cancelDelete.addEventListener('click', () => {
  deleteModal.style.display = 'none';});
   // Refresh button handler
refreshButton.addEventListener('click', () => {
  fetchMessages();
  fetchUsers();});
   // Logout button handler
logoutButton.addEventListener('click', () => {
  currentUsername = '';
  chatScreen.style.display = 'none';
  usernameScreen.style.display = 'flex';
  usernameInput.value = '';});    // Socket.io events
// Receive message history
socket.on('messageHistory', (messages) => {
  chatMessages.innerHTML = '';
  messages.forEach(message => {
    displayMessage(message);  });
  // Auto-scroll to the bottom
  chatMessages.scrollTop = chatMessages.scrollHeight;});
  // Receive new message
  socket.on('message', (message) => {
    displayMessage(message);
    // Auto-scroll to the bottom
    chatMessages.scrollTop = chatMessages.scrollHeight;});
  // Message updated
  socket.on('messageUpdated', (message) => {
    // Refresh messages to show updated content
    fetchMessages();  });
  // Message deleted
  socket.on('messageDeleted', (data) => {
    // Refresh messages to remove deleted message
    fetchMessages();});
</script>
```

OUTPUT:



Enter Your Username

diya



MongoDB Chat App

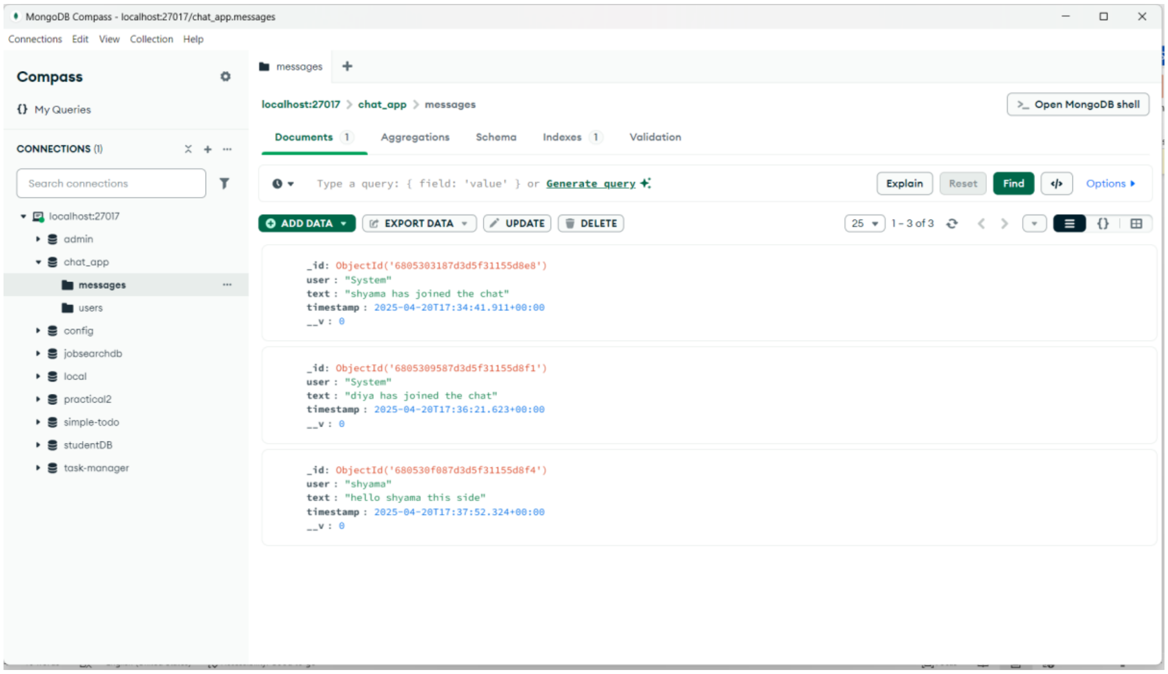
shyama has joined the chat
23:04

diya has joined the chat
23:06

Online Users

diya (You)
shyama

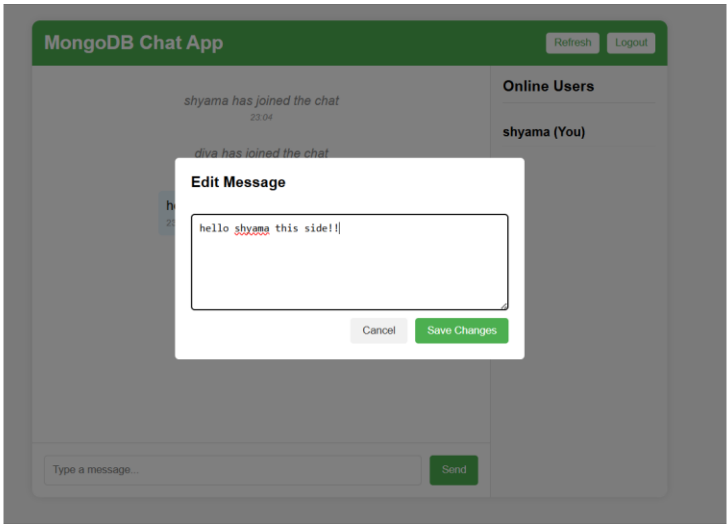
Type a message...



```
_id: ObjectId('6805303187d3d5f31155d8e8')
user : "System"
text : "shyama has joined the chat"
timestamp : 2025-04-20T17:34:41.911+00:00
__v : 0

_id: ObjectId('6805309587d3d5f31155d8f1')
user : "System"
text : "diya has joined the chat"
timestamp : 2025-04-20T17:36:21.623+00:00
__v : 0

_id: ObjectId('680530f087d3d5f31155d8f4')
user : "shyama"
text : "hello shyama this side"
timestamp : 2025-04-20T17:37:52.324+00:00
__v : 0
```

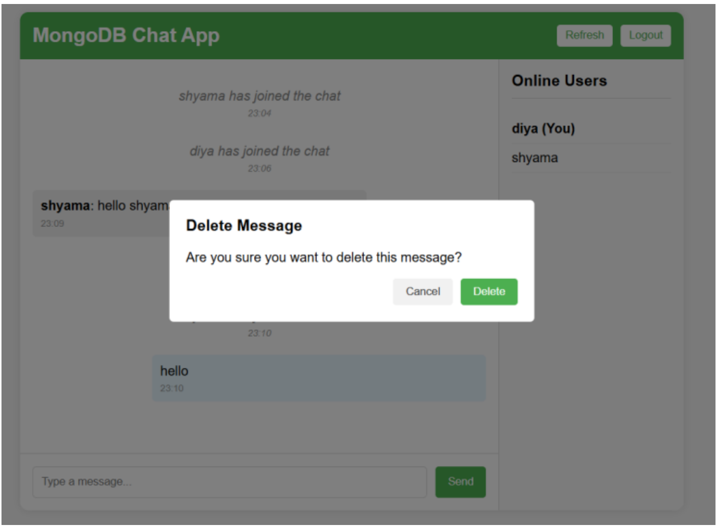


shyama has joined the chat
23:04

diya has joined the chat

Edit Message

```
hello shyama this side!!
```



shyama has joined the chat
23:04

diya has joined the chat
23:06

shyama: hello shyam
23:09

Delete Message

Are you sure you want to delete this message?

23:10

hello
23:10