WEBTECH LAB-9

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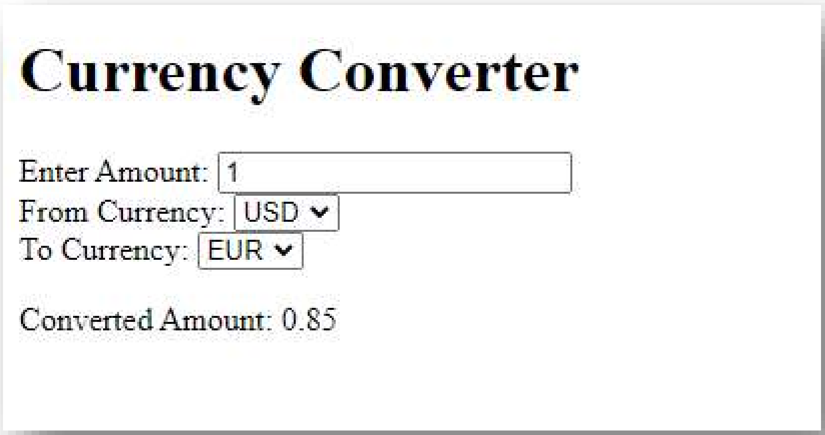
Q1. Develop a currency converter application that allows users to input an amount in one currency and convert it to another. For the sake of this challenge, you can use a hard-coded exchange rate. Take advantage of React state and event handlers to manage the input and conversion calculations.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Currency Converter</title>
  <script src="https://cdn.jsdelivr.net/npm/vue@2"></script>
</head>
<body>

<div id="app">
  <h1>Currency Converter</h1>

  <div>
    <label for="amount">Enter Amount:</label>
    <input type="number" v-model="amount" id="amount"
@input="convertCurrency">
  </div>

  <div>
    <label for="fromCurrency">From Currency:</label>
    <select v-model="fromCurrency" id="fromCurrency"
@change="convertCurrency">
      <option value="USD">USD</option>
      <option value="EUR">EUR</option>
    </select>
  </div>

  <div>
    <label for="toCurrency">To Currency:</label>
    <select v-model="toCurrency" id="toCurrency"
@change="convertCurrency">
      <option value="USD">USD</option>
      <option value="EUR">EUR</option>
    </select>
  </div>

  <div>
    <p>Converted Amount: {{ convertedAmount }}</p>
  </div>
</div>

<script>
new Vue({
  el: '#app',
  data: {
    amount: 1,
    fromCurrency: 'USD',
    toCurrency: 'EUR',
    exchangeRate: 0.85,
  },
  computed: {
    convertedAmount: function () {
      return (this.amount * this.exchangeRate).toFixed(2);
    },
  },
  methods: {
    convertCurrency: function () {
      this.convertedAmount = (this.amount *
this.exchangeRate).toFixed(2);
    },
  },
});
</script>

</body>
</html>
```


Currency Converter

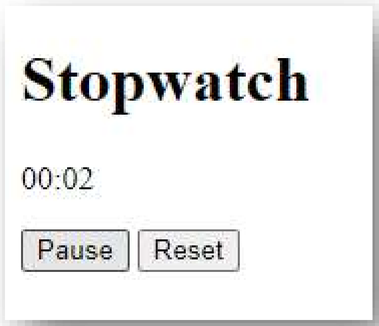
Enter Amount: 1
From Currency: USD
To Currency: EUR

Converted Amount: 0.85

Q2. Create a stopwatch application through which users can start, pause and reset the timer. Use React state, event handlers and the setTimeout or setInterval functions to manage the timer's state and actions.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Stopwatch</title>
  <!-- Include Vue.js -->
  <script src="https://cdn.jsdelivr.net/npm/vue@2"></script>
</head>
<body>

<div id="app">
  <h1>Stopwatch</h1>

  <div>
    <p>{{ formatTime }}</p>
  </div>

  <div>
    <button @click="startPauseTimer">{{ isRunning ? 'Pause' : 'Start'
}}</button>
    <button @click="resetTimer">Reset</button>
  </div>
</div>

<script>
new Vue({
  el: '#app',
  data: {
    timer: 0,
    isRunning: false,
  },
  computed: {
    formatTime: function () {
      const minutes = Math.floor(this.timer / 60);
      const seconds = this.timer % 60;
      return `${this.padNumber(minutes)}:${this.padNumber(seconds)}`;
    },
  },
  methods: {
    startPauseTimer: function () {
      if (this.isRunning) {
        clearInterval(this.timerInterval);
      } else {
        this.timerInterval = setInterval(() => {
          this.timer++;
        }, 1000);
      }
      this.isRunning = !this.isRunning;
    },
    resetTimer: function () {
      clearInterval(this.timerInterval);
      this.timer = 0;
      this.isRunning = false;
    },
    padNumber: function (number) {
      return number.toString().padStart(2, '0');
    },
  },
});
</script>
```

```
</body>
</html>
```



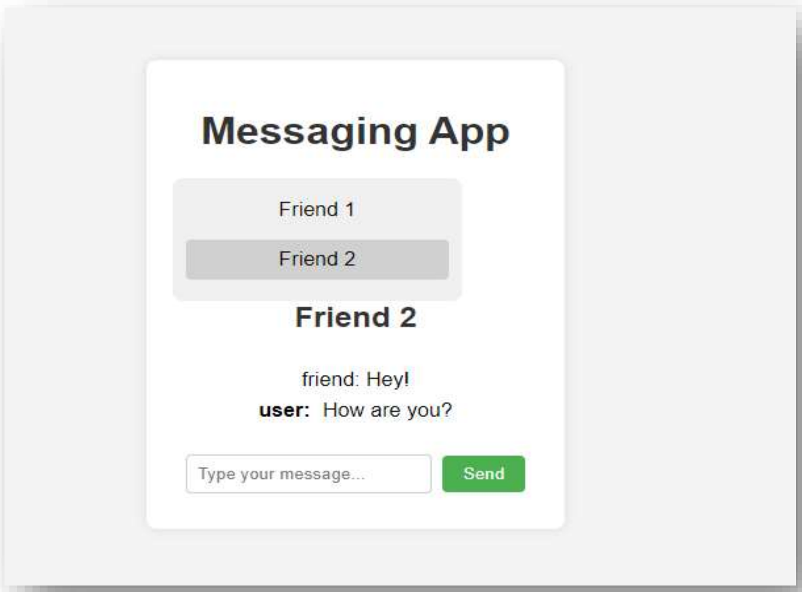
Q3. Develop a messaging application that allows users to send and receive messages in real time. The application should display a list of conversations and allow the user to select a specific conversation to view its messages. The messages should be displayed in a chat interface with the most recent message at the top. Users should be able to send new messages and receive push notifications.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Messaging App</title>
  <!-- Include Vue.js and Vuex -->
  <script src="https://cdn.jsdelivr.net/npm/vue@2"></script>
  <script src="https://cdn.jsdelivr.net/npm/vuex@3"></script>
</head>
<body>

<div id="app">
  <h1>Messaging App</h1>

  <!-- Conversation List -->
  <div class="conversation-list">
```

```
    <div v-for="(conversation, index) in conversations" :key="index"
@click="selectConversation(index)" :class="{ 'selected':
selectedConversation === index }">
      {{ conversation.name }}
    </div>
  </div>

  <!-- Chat Interface -->
  <div class="chat-interface">
    <div v-if="selectedConversation !== null">
      <h2>{{ conversations[selectedConversation].name }}</h2>
      <div class="message-list">
        <div v-for="(message, index) in
conversations[selectedConversation].messages" :key="index"
class="message">
          <span :class="{ 'sender': message.sender === 'user' }">{{
message.sender }}:</span> {{ message.text }}
        </div>
      </div>
      <div class="message-input">
        <input v-model="newMessage" placeholder="Type your message..."
/>
        <button @click="sendMessage">Send</button>
      </div>
    </div>
    <div v-else>
      <p>Select a conversation to start chatting.</p>
    </div>
  </div>
</div>

<script>
// Mock data
const mockConversations = [
  {
    name: 'Friend 1',
    messages: [
      { sender: 'user', text: 'Hello!' },
      { sender: 'friend', text: 'Hi there!' },
    ],
  },
  {
    name: 'Friend 2',
    messages: [
      { sender: 'friend', text: 'Hey!' },
      { sender: 'user', text: 'How are you?' },
    ],
  },
];

new Vue({
  el: '#app',
  data: {
    conversations: mockConversations,
    selectedConversation: null,
    newMessage: '',
  },
  methods: {
    selectConversation(index) {
      this.selectedConversation = index;
    },
    sendMessage() {
      if (this.selectedConversation !== null && this.newMessage.trim()
!== '') {
        this.conversations[this.selectedConversation].messages.push({
          sender: 'user',
          text: this.newMessage.trim(),
        });
        this.newMessage = '';
        // Simulate receiving a message after a delay
        setTimeout(() => {
          this.conversations[this.selectedConversation].messages.push(
{
            sender: 'friend',
            text: 'I got your message!',
          });
        }, 1000);
      }
    },
  },
});
</script>

<style>
  body {
    font-family: 'Arial', sans-serif;
    background-color: #f4f4f4;
    margin: 0;
    padding: 0;
    display: flex;
    align-items: center;
    justify-content: center;
    height: 100vh;
  }

  #app {
    background-color: #fff;
    border-radius: 8px;
    padding: 20px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
    text-align: center;
  }

  h1 {
    color: #333;
  }

  .conversation-list {
    display: flex;
    flex-direction: column;
    width: 200px;
    margin-right: 20px;
    padding: 10px;
    background-color: #f0f0f0;
    border-radius: 8px;
  }
```

```css
.conversation-list div {
  cursor: pointer;
  padding: 8px;
  margin-bottom: 8px;
  border-radius: 4px;
  transition: background-color 0.3s;
}

.conversation-list div:hover {
  background-color: #e0e0e0;
}

.conversation-list .selected {
  background-color: #d0d0d0;
}

.chat-interface {
  flex: 1;
  display: flex;
  flex-direction: column;
}

h2 {
  margin-top: 0;
  color: #333;
}

.message-list {
  flex: 1;
  overflow-y: auto;
  padding: 10px;
}

.message {
  margin-bottom: 8px;
}

.sender {
  font-weight: bold;
```

```
    margin-right: 5px;
  }

  .message-input {
    display: flex;
    align-items: center;
    padding: 10px;
  }

  input {
    flex: 1;
    padding: 8px;
    border: 1px solid #ccc;
    border-radius: 4px;
  }

  button {
    background-color: #4caf50;
    color: #fff;
    padding: 8px 16px;
    border: none;
    border-radius: 4px;
    cursor: pointer;
    margin-left: 8px;
    transition: background-color 0.3s;
  }

  button:hover {
    background-color: #45a049;
  }
</style>

</body>
</html>
```



friend: Hey!
user: How are you?