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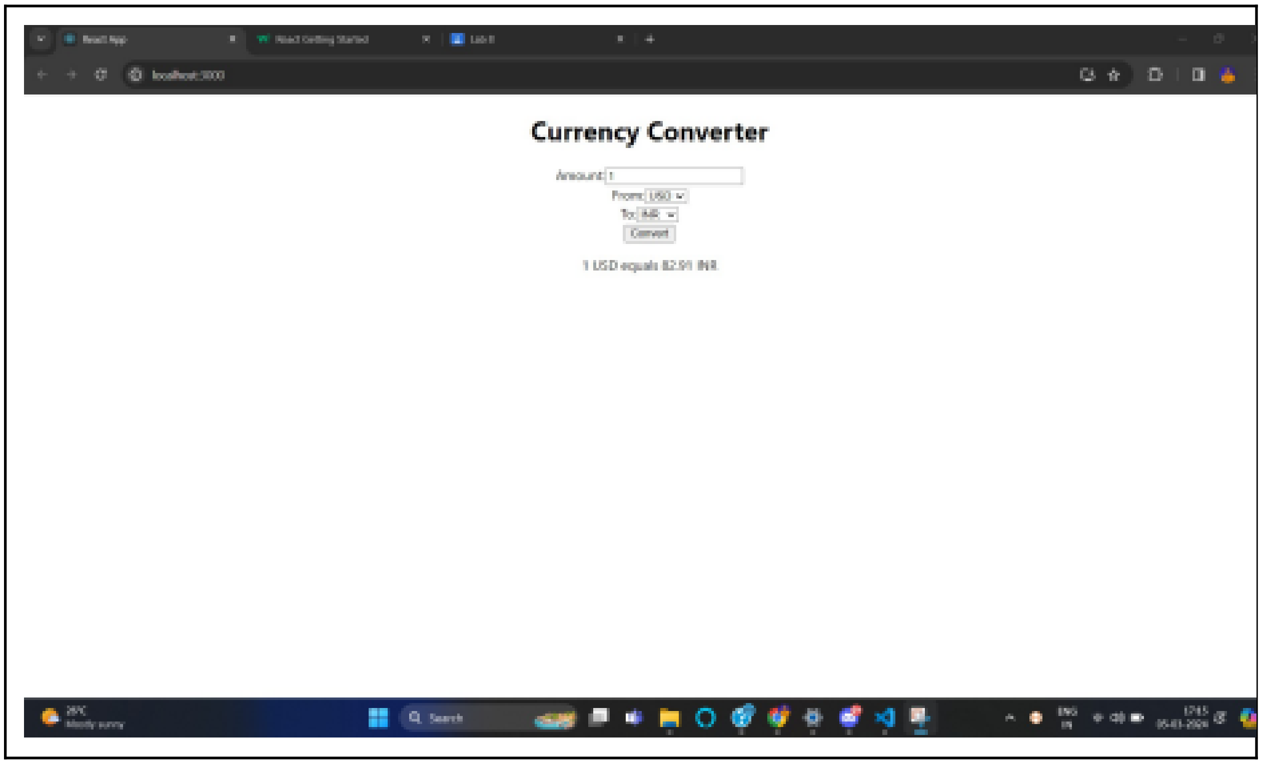
T1. Develop a currency converter application that allows users to input an amount in one currency and convert it to another. For the sake of this challenge, you can use a hard-coded exchange rate. Take advantage of React state and event handlers to manage the input and conversion calculations.

```
import React    useState   from 'react'
import './App.css'

function App
  const  amount  setAmount  = useState ''
  const  fromCurrency  setFromCurrency  = useState 'USD'    const  toCurrency
  setToCurrency  = useState 'INR'   const  convertedAmount  setConvertedAmount
  = useState null

  const handleAmountChange =  event  =>
    setAmount event target value


  const handleFromCurrencyChange =  event  =>
    setFromCurrency event target value


  const handleToCurrencyChange =  event  =>
       setToCurrency event target value


  const handleConvert =     =>
    let exchangeRate
    if  fromCurrency === 'USD' && toCurrency === 'INR'
      exchangeRate = 82.91
      else if  fromCurrency === 'INR' && toCurrency === 'USD'     exchangeRate = 1
      / 82.91
      else
      exchangeRate = 1

    const converted = parseFloat amount  * exchangeRate
    setConvertedAmount converted toFixed 2


  return
    <div className="App">
```

```
      <h1>                  </h1>
      <div>
        <label>

                              <input type="number" value={amount}
onChange={handleAmountChange} />
        </label>
      </div>
      <div>
        <label>

          <select value={fromCurrency}
onChange={handleFromCurrencyChange}>
                               <option value="USD">   </option>
                               <option value="INR">   </option>
          </select>
        </label>
      </div>
      <div>
        <label>

          <select value={toCurrency} onChange={handleToCurrencyChange}>
                               <option value="USD">   </option>
                               <option value="INR">   </option>
          </select>
        </label>
      </div>
      <button onClick={handleConvert}>       </button>
      {convertedAmount &&
       <p>{amount} {fromCurrency}         {convertedAmount} {toCurrency}</p>
       }
    </div>



export default App
```



Currency Converter

Amount: 1

From: USD

To: INR

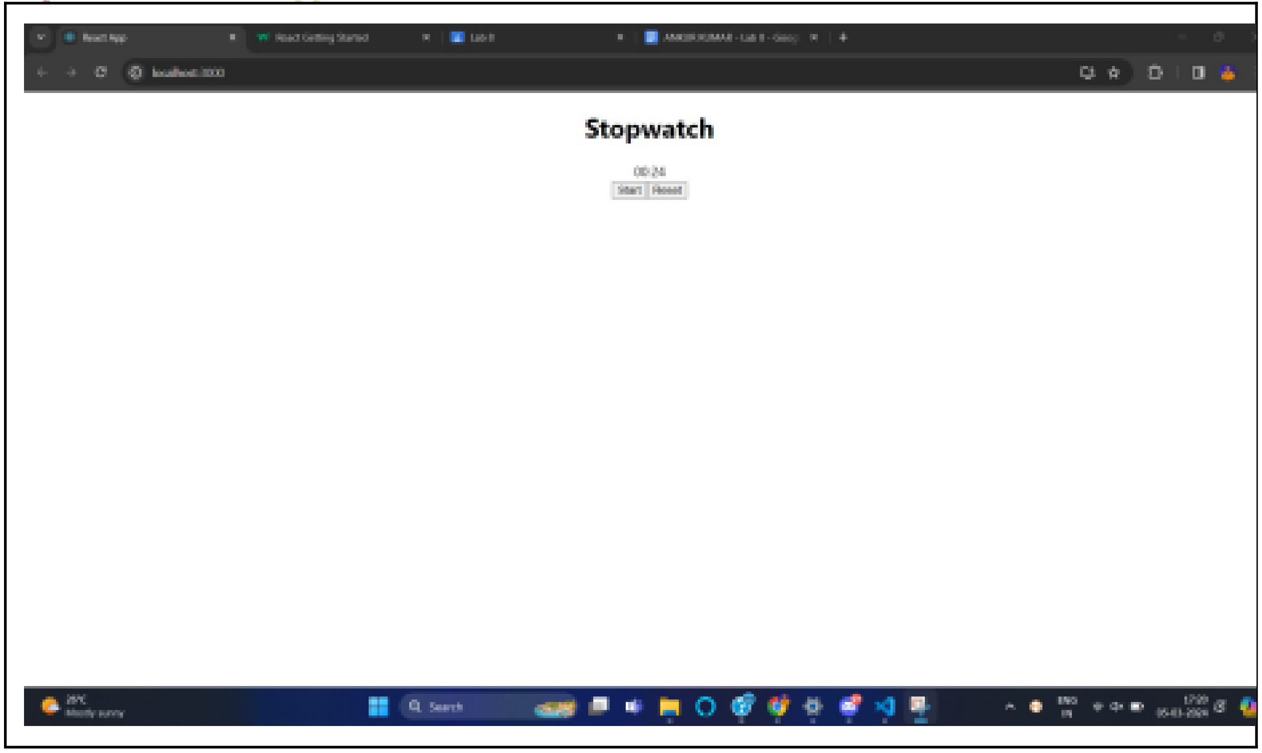
Convert

1 USD equals 82.91 INR

T2. 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.

```
// App.js
import React    useState  useRef   from 'react'   import
'./App.css'

function App
  const  time  setTime  = useState 0
  const  isRunning  setIsRunning  =
  useState false   const intervalRef =
  useRef null
  const handleStart =    =>
    setIsRunning true
    intervalRef current = setInterval    =>    setTime  prevTime
    => prevTime + 1       1000


  const handlePause =    =>
    clearInterval intervalRef current
    setIsRunning false


  const handleReset =    =>
    clearInterval intervalRef current    setTime 0
    setIsRunning false
```

```
const formatTime =  timeInSeconds  =>   const minutes =
  Math floor timeInSeconds / 60    const seconds = timeInSeconds %
  60  return
    String minutes  padStart 2  '0'  + ':' +
    String seconds  padStart 2  '0'



return
  <div className="App">
    <h1>         </h1>
    <div className="timer">{formatTime time }</div> <div
    className="controls">
      {!isRunning ?
        <button onClick={handleStart}>     </button>   :
        <button onClick={handlePause}>     </button>  }
      <button onClick={handleReset}>     </button> </div>
  </div>



export default App
```



React App | React Getting Started | Lab 8 | ANKUR KUMAR - Lab 8 - Goog

localhost:3000

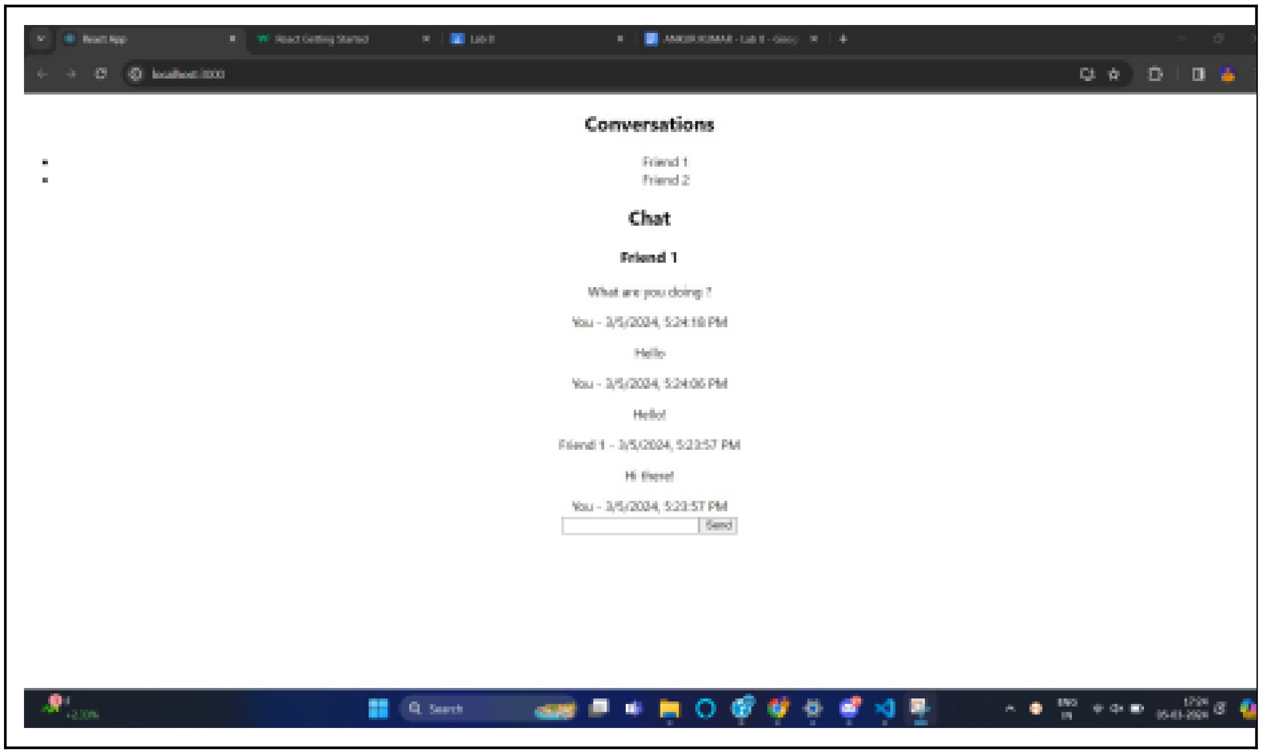
Stopwatch

00:24

T3.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.

```
import React    useState  useEffect   from 'react'   import
'./App.css'

function App
  const  conversations  setConversations  = useState      const
   selectedConversation  setSelectedConversation  =
  useState null   const  newMessage  setNewMessage  =
  useState ''  const  messages  setMessages  = useState

  useEffect    =>
    fetchConversations

  useEffect    =>
    if  selectedConversation
      fetchMessages selectedConversation id
      selectedConversation

  const fetchConversations =    =>
    const mockConversations =
        id: 1  name: 'Friend 1'
        id: 2  name: 'Friend 2'

    setConversations mockConversations

  const fetchMessages =  conversationId  =>    const
    mockMessages =
        id: 1  text: 'Hello!'  sender: 'Friend 1'  timestamp: new
Date
        id: 2  text: 'Hi there!'  sender: 'You'  timestamp: new Date

    setMessages mockMessages


  const handleConversationClick =  conversation  =>
  setSelectedConversation conversation

  const handleMessageSend =    =>
    const message =   id: messages length + 1  text: newMessage  sender:
'You'  timestamp: new Date
    setMessages  message  ...messages
    setNewMessage ''


  return
    <div className="App">
      <div className="sidebar">
        <h2>             </h2>
        <ul>
                             {conversations map  conversation  =>
                                <li key={conversation id} onClick={   =>
handleConversationClick conversation }>
              {conversation name}
            </li>
            }
        </ul>
      </div>
      <div className="chat">
        <h2>    </h2>
        {selectedConversation &&
          <div>
                               <h3>{selectedConversation name}</h3>
            <div className="messages">
                                 {messages map  message  =>
               <div key={message id} className={message sender === 'You'
? 'sent' : 'received'}>
                                     <p>{message text}</p>
                                     <span>{message sender}
      {message timestamp toLocaleString  }</span> </div>
                }
            </div>
                     <div className="message-input">
               <input type="text" value={newMessage} onChange={ e  =>
setNewMessage e target value } />
              <button onClick={handleMessageSend}>    </button> </div>
          </div>
         }
      </div>
    </div>



export default App
```



Conversations

- Friend 1
- Friend 2

Chat

Friend 1

What are you doing ?

You - 3/5/2024, 5:24:10 PM

Hello

You - 3/5/2024, 5:24:06 PM

Hello!

Friend 1 - 3/5/2024, 5:23:57 PM

Hi there!

You - 3/5/2024, 5:23:57 PM