	Marwadi University
 ![Marwadi University logo]	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**
Subject: AWT (01CT1625)	**Aim: Develop a web application which involves database operations using Express**
Experiment No: 4	**Date:** **Enrollment No: 92200133005**

AIM: Develop a web application which involves database operations using Express.

CODE:

```javascript
// server.js

const express = require('express');

const mysql = require('mysql');

const bodyParser = require('body-parser');

const path = require('path');

const app = express();

const port = 3000;

// Middleware

app.use(bodyParser.urlencoded({ extended: false }));

app.use(express.static(path.join(__dirname, 'public')));

// Database connection

const db = mysql.createConnection({

    host: 'localhost',

    user: 'root',

    password: '',

    database: 'student_db'

});

// Connect to database

db.connect((err) => {

    if (err) {

        console.error('Error connecting to database:', err);

        return; }
```

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```
console.log('Connected to MySQL database');

// Create table if not exists

const createTableQuery = `

    CREATE TABLE IF NOT EXISTS students (

        id INT AUTO_INCREMENT PRIMARY KEY,

        name VARCHAR(100) NOT NULL,

        email VARCHAR(100) NOT NULL,

        course VARCHAR(100) NOT NULL

    ) `;

db.query(createTableQuery, (err) => {

    if (err) {

        console.error('Error creating table:', err);

    } else {

        console.log('Students table created or already exists');

    }});

});

// Routes

app.get('/', (req, res) => {

    res.sendFile(path.join(__dirname, 'public', 'index.html'));

});

// Get all students

app.get('/api/students', (req, res) => {

    const query = 'SELECT * FROM students';
```

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```
  db.query(query, (err, results) => {

    if (err) {

      console.error('Error fetching students:', err);

      return res.status(500).json({ error: 'Error fetching students' });

    }

    res.json(results);

  }); });

// Add a new student

app.post('/api/students', (req, res) => {

  const { name, email, course } = req.body;

  if (!name || !email || !course) {

    return res.status(400).json({ error: 'All fields are required' }); }

  const query = 'INSERT INTO students (name, email, course) VALUES (?, ?, ?)';

  db.query(query, [name, email, course], (err, result) => {

    if (err) {

      console.error('Error adding student:', err);

      return res.status(500).json({ error: 'Error adding student' });}

    res.redirect('/');

  }); });

// Delete a student

app.get('/api/students/delete/:id', (req, res) => {

  const id = req.params.id;

  const query = 'DELETE FROM students WHERE id = ?';

  db.query(query, [id], (err, result) => {
```

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```
        if (err) {

            console.error('Error deleting student:', err);

            return res.status(500).json({ error: 'Error deleting student' });  }

        res.redirect('/'); });

    });

// Update a student

app.post('/api/students/update', (req, res) => {

    const { id, name, email, course } = req.body;

    if (!id || !name || !email || !course) {

        return res.status(400).json({ error: 'All fields are required' }); }

    const query = 'UPDATE students SET name = ?, email = ?, course = ? WHERE id = ?';

    db.query(query, [name, email, course, id], (err, result) => {

        if (err) {

            console.error('Error updating student:', err);

            return res.status(500).json({ error: 'Error updating student' });}

        res.redirect('/');

    }); });

// Start server

app.listen(port, () => {

    console.log(`Server running on http://localhost:${port}`);

});

//index.html

<script>

    // Fetch and display students when page loads
```

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```javascript
document.addEventListener('DOMContentLoaded', fetchStudents);

function fetchStudents() {

  fetch('/api/students')

    .then(response => response.json())

    .then(students => {

      const studentList = document.getElementById('studentList');

      studentList.innerHTML = '';

      students.forEach(student => {

        const row = document.createElement('tr');

        row.innerHTML = `

          <td>${student.id}</td>

          <td>${student.name}</td>

          <td>${student.email}</td>

          <td>${student.course}</td>

          <td>

            <button class="edit-btn" onclick="editStudent(${student.id}, '${student.name}', '${student.email}', '${student.course}')">

              Edit

            </button>

            <a href="/api/students/delete/${student.id}" class="delete-btn"

              onclick="return confirm('Are you sure you want to delete this student?')">

              Delete

            </a>

          </td>`;

      studentList.appendChild(row); });})
```

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```
        .catch(error => {

            console.error('Error fetching students:', error); });}

    function editStudent(id, name, email, course) {

        // Show edit form and hide add form

        document.getElementById('editForm').style.display = 'block';

        document.getElementById('addForm').style.display = 'none';

        // Populate edit form with student data

        document.getElementById('editId').value = id;

        document.getElementById('editName').value = name;

        document.getElementById('editEmail').value = email;

        document.getElementById('editCourse').value = course; }

    function cancelEdit() {

        // Hide edit form and show add form

        document.getElementById('editForm').style.display = 'none';

        document.getElementById('addForm').style.display = 'block'; }

    </script>

<script>

async function loadStudents() {

  const res = await fetch('/api/students');

  const data = await res.json();

  let html = '<ul>';

  data.forEach(s => {

    html += `<li>${s.name} - ${s.branch}

        <form action="/delete/${s._id}" method="POST" style="display:inline;">
```

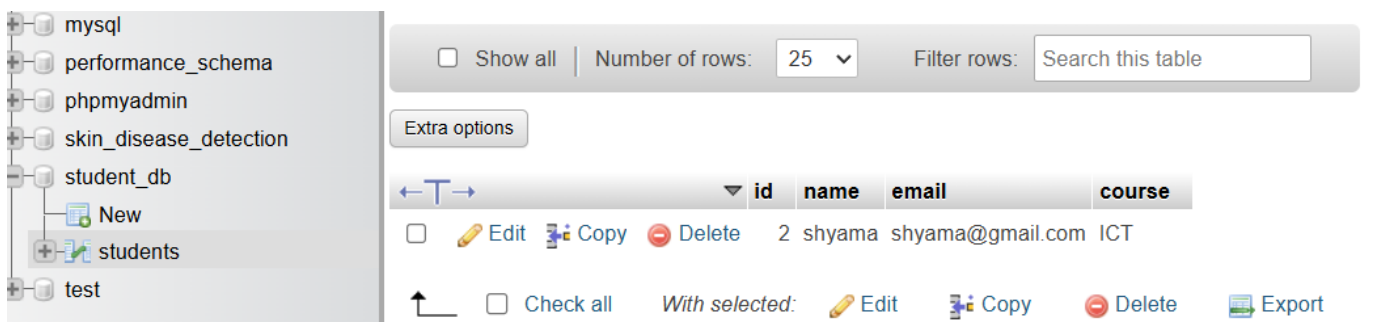|	Marwadi University
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<button type="submit">Delete</button>

</form>

`;});

html += '
';

document.getElementById('students').innerHTML = html;

}

OUTPUT:

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