

The Yenepoya Institute of Arts, Science, Commerce and Management
A Constituent Unit of Yenepoya (Deemed to be University)
V Semester - BCA/BSc - BCA502P Progressive Web Apps

LAB PROGRAMS

PART-B

1. Develop a simple AngularJS calculator application that can perform basic mathematical operations. (addition, subtraction, multiplication, division) based on user input.

Source code:

```
<!DOCTYPE html>
<html lang="en" ng-app="calcApp">
<head>
  <meta charset="UTF-8">
  <title>Simple Calculator</title>
  <script src="angular-1.8.2/angular-1.8.2/angular.min.js"></script>
  <style>
    body {
      text-align: center;
      margin-top: 50px;
    }
    .calculator {
      display: inline-block;
      border: 2px solid #ccc;
      padding: 20px;
      box-shadow: 0 0 10px #ccc;
    }
    .display {
      width: 240px;
      height: 40px;
      text-align: right;
      padding: 5px;
      margin-bottom: 15px;
      border: 1px solid #aaa;
    }
    .buttons {
      display: grid;
      grid-template-columns: repeat(4, 60px);
      gap: 10px;
    }
  </style>
```

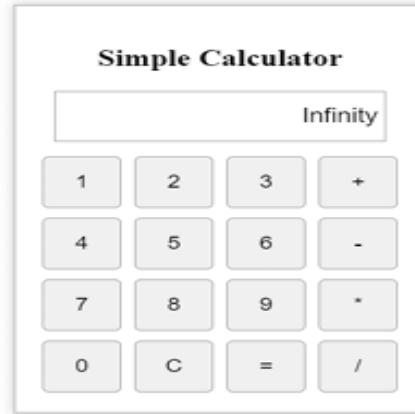
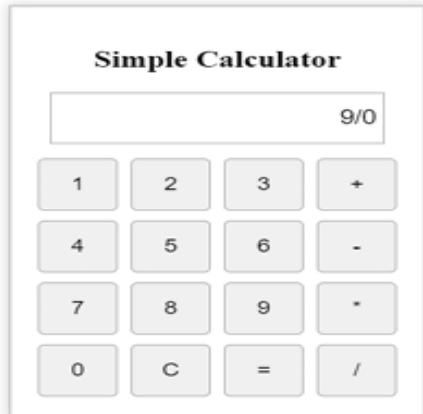
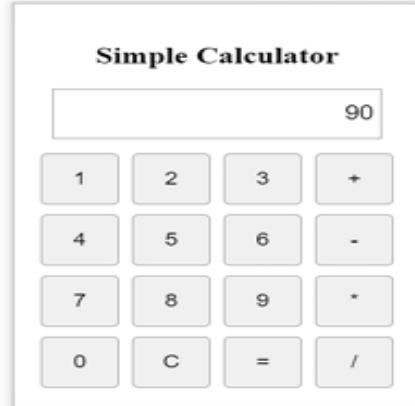
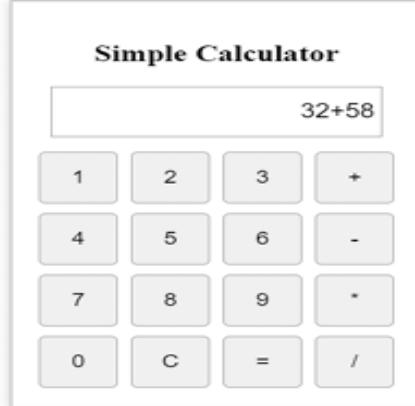
```

button {
    padding: 15px;
    font-size: 18px;
    cursor: pointer;
    border-radius: 5px;
    border: 1px solid #aaa;
}
</style>
</head>
<body ng-controller="calcCtrl">
<div class="calculator">
    <h2>Simple Calculator</h2>
    <input type="text" class="display" ng-model="display" readonly>
    <div class="buttons">
        <button ng-click="append('1')">1</button>
        <button ng-click="append('2')">2</button>
        <button ng-click="append('3')">3</button>
        <button ng-click="append('+')">+</button>
        <button ng-click="append('4')">4</button>
        <button ng-click="append('5')">5</button>
        <button ng-click="append('6')">6</button>
        <button ng-click="append('-')">-</button>
        <button ng-click="append('7')">7</button>
        <button ng-click="append('8')">8</button>
        <button ng-click="append('9')">9</button>
        <button ng-click="append('*')">*</button>
        <button ng-click="append('0')">0</button>
        <button ng-click="clear()">C</button>
        <button ng-click="calculate()">=</button>
        <button ng-click="append('/')">/</button>
    </div>
</div>
<script>
var app = angular.module('calcApp', []);
app.controller('calcCtrl', function($scope) {
    $scope.display = "";

    $scope.append = function(value) {
        $scope.display += value;
    };
    $scope.clear = function() {
        $scope.display = "";
    };
    $scope.calculate = function() {
        try {
            $scope.display = eval($scope.display).toString();
        } catch (e) {
            $scope.display = 'Error';
        }
    };
});

```

```
});  
</script>  
</body>  
</html>
```



2. Develop an AngularJS application that displays the details of students and their GPA. Allow users to read the number of students and display the count. Note: Student details may be included in the program.

Source code:

```
<!DOCTYPE html>

<html ng-app="studentApp">

<head>

<title>Student CGPA Viewer</title>

<script src="angular-1.8.2/angular-1.8.2/angular.min.js"></script>

<style>

body {

font-family: Arial, sans-serif;

padding: 20px;

}

table {

border-collapse: collapse;

width: 60%;

margin-top: 20px;

}

th, td {

border: 1px solid #ccc;

padding: 10px;

text-align: left;

}

th {

background-color: #f2f2f2;

}
```

```
h1, h3 {  
    color: #333;  
}  
</style>  
</head>  
<body ng-controller="StudentController">  
    <h1>Student Details</h1>  
    <table>  
        <thead>  
            <tr>  
                <th>Student ID</th>  
                <th>Name</th>  
                <th>CGPA</th>  
            </tr>  
        </thead>  
        <tbody>  
            <tr ng-repeat="student in students">  
                <td>{{ student.id }}</td>  
                <td>{{ student.name }}</td>  
                <td>{{ student.cgpa }}</td>  
            </tr>  
        </tbody>  
    </table>  
    <h3>Total Students: {{ students.length }}</h3>  
    <script>
```

```

angular.module('studentApp', [])

.controller('StudentController', function($scope) {
    $scope.students = [
        { id: 101, name: 'Lee Heeseung', cgpa: 3.6 },
        { id: 102, name: 'Jay', cgpa: 3.92 },
        { id: 103, name: 'Jake', cgpa: 3.4 },
        { id: 104, name: 'Sunghoon', cgpa: 3.78 },
        { id: 105, name: 'Sunoo', cgpa: 3.65 },
        { id: 106, name: 'Jungwon', cgpa: 3.55 },
        { id: 106, name: 'Ni-Ki', cgpa: 3.60 }
    ];
});

</script>
</body>
</html>

```

Output:

Student Details

Student ID	Name	CGPA
101	Lee Heeseung	3.6
102	Jay	3.92
103	Jake	3.4
104	Sunghoon	3.78
105	Sunoo	3.65
106	Jungwon	3.55
106	Ni-Ki	3.6

Total Students: 7

- 3. Develop an AngularJS program to create a simple to-do list application. Allow users to add, edit, and delete tasks. Note: The default values for tasks may be included in the program**

Source code:

```
<!DOCTYPE html>
<html ng-app="todoApp">
<head>
  <meta charset="UTF-8">
  <title>Simple To-Do List (AngularJS)</title>
  <script src="angular-1.8.2/angular-1.8.2/angular.min.js"></script> <style>
    body { font-family: Arial; padding: 20px; }
    .task { margin-bottom: 10px; }
    .task input[type="text"] { width: 60%; }
    .btn { padding: 5px 10px; margin-left: 5px; }
  </style>
</head>
<body ng-controller="TodoController">
  <h2>My To-Do List</h2>
  <div>
    <input type="text" ng-model="newTask" placeholder="Add new task">
    <button class="btn" ng-click="addTask()">Add</button>
  </div>
  <ul>
    <li class="task" ng-repeat="task in tasks track by $index">
      <span ng-if="!task.editing">{{ task.name }}</span>
      <input type="text" ng-model="task.name" ng-if="task.editing">
      <button class="btn" ng-click="editTask(task)" ng-if="!task.editing">Edit</button>
      <button class="btn" ng-click="saveTask(task)" ng-if="task.editing">Save</button>
      <button class="btn" ng-click="deleteTask($index)">Delete</button>
    </li>
  </ul>
<script>
var app = angular.module('todoApp', []);
app.controller('TodoController', function($scope) {
  // Default tasks
  $scope.tasks = [
    { name: "Read a book", editing: false },
    { name: "Finish assignment", editing: false },
    { name: "Do Laundry", editing: false }
  ];
  // Add a task
  $scope.addTask = function() {
    if ($scope.newTask && $scope.newTask.trim() !== "") {
      $scope.tasks.push({ name: $scope.newTask, editing: false });
      $scope.newTask = "";
    }
  };
});
```

```

// Edit a task
$scope.editTask = function(task) {
  task.editing = true;
};

// Save a task
$scope.saveTask = function(task) {
  task.editing = false;
};

// Delete a task
$scope.deleteTask = function(index) {
  $scope.tasks.splice(index, 1);
};

</script>
</body>
</html>

```

My To-Do List

Add new task Add

- Read a book
- Finish assignment
- Do Laundry
- Fertilize Plants

My To-Do List

Add new task Add

- Read a book
- Finish assignment
- Do Laundry
- Fertilize Plants

4. Develop an AngularJS program to create a login form, with validation for the user's name and password fields.

Source code:

```
<!DOCTYPE html>
<html ng-app="loginApp">
<head>
  <meta charset="UTF-8">
  <title>AngularJS Login Form</title>
  <script src="angular-1.8.2/angular-1.8.2/angular.min.js"></script>
  <style>
    body { font-family: Arial; padding: 20px; }
    .error { color: red; font-size: 14px; }
    .success { color: green; font-size: 14px; }
    input.ng-invalid.ng-touched { border-color: red; }
    input.ng-valid.ng-touched { border-color: green; }
    form { width: 300px; }
  </style>
</head>
<body ng-controller="LoginController">
  <h2>Login Form</h2>
  <form name="loginForm" ng-submit="submitForm()" novalidate>
    <div>
      <label>Username:</label><br>
      <input type="text" name="username" ng-model="user.username" required ng-minlength="3" />
      <div class="error" ng-show="loginForm.username.$touched && loginForm.username.$invalid">
        <span ng-show="loginForm.username.$error.required">Username is required.</span>
        <span ng-show="loginForm.username.$error.minlength">Minimum 3 characters required.</span>
      </div>
    </div><br>
    <div>
      <label>Password:</label><br>
      <input type="password" name="password" ng-model="user.password" required ng-minlength="6" />
      <div class="error" ng-show="loginForm.password.$touched && loginForm.password.$invalid">
        <span ng-show="loginForm.password.$error.required">Password is required.</span>
        <span ng-show="loginForm.password.$error.minlength">Minimum 6 characters required.</span>
      </div>
    </div><br>
    <button type="submit" ng-disabled="loginForm.$invalid">Login</button>
  </form>
  <!-- Display result -->
```

```

<p class="success" ng-if="loginSuccess">✓ Login successful!</p>
<p class="error" ng-if="loginFailed">✗ Invalid username or password.</p>
<script>
  var app = angular.module('loginApp', []);
  app.controller('LoginController', function($scope) {
    // Initial form data
    $scope.user = {};
    $scope.loginSuccess = false;
    $scope.loginFailed = false;
    // Predefined login credentials (simulate backend check)
    const validUsername = "user";
    const validPassword = "123456";
    $scope.submitForm = function() {
      if ($scope.loginForm.$valid) {
        if ($scope.user.username === validUsername && $scope.user.password ===
        validPassword) {
          $scope.loginSuccess = true;
          $scope.loginFailed = false;
          console.log("Login successful:", $scope.user);
        } else {
          $scope.loginFailed = true;
          $scope.loginSuccess = false;
        }
      }
    };
  });
</script>
</body>
</html>

```

Login Form

Username:

Username is required.

Password:

Password is required.

Login Form

Username:

Password:

Password is required.

Login Form

Username:

Username is required.

Password:

Minimum 6 characters required.

Login Form

Username:

Password:

Minimum 6 characters required.

Login Form

Username:

Neama

Password:

.....

X Invalid username or password.

Login Form

Username:

user

Password:

.....

✓ Login successful!

- 5. Create an AngularJS application that displays a list of employees and their salaries. Allow users to search for employees by name and salary. Note: Employee details may be included in the program.**

Source code:

```
<!DOCTYPE html>
<html lang="en" ng-app="employeeApp">
<head>
    <meta charset="UTF-8">
    <title>Employee List</title>
    <script src="angular-1.8.2/angular-1.8.2/angular.min.js"></script>
    <style>
        body {
            font-family: Arial, sans-serif;
            padding: 20px;
        }
        h1 {
            color: #333;
        }
        input {
            margin: 10px 10px 20px 0;
            padding: 8px;
            width: 200px;
        }
        table {
            width: 80%;
            border-collapse: collapse;
            margin-top: 10px;
        }
        th, td {
            border: 1px solid #ddd;
            padding: 12px;
            text-align: left;
        }
        th {
            background-color: #f4f4f4;
        }
        tr:hover {
            background-color: #f1f1f1;
        }
    </style>
</head>
<body ng-controller="EmployeeController">
    <h1>Employee List</h1>
    <input type="text" ng-model="searchName" placeholder="Search by name" />
    <input type="number" ng-model="searchSalary" placeholder="Search by salary" />
    <!-- Employee Table -->
    <table>
        <thead>
```

```

<tr>
  <th>Name</th>
  <th>Position</th>
  <th>Salary</th>
</tr>
</thead>
<tbody>
  <tr ng-repeat="employee in employees | filter:customFilter">
    <td>{{ employee.name }}</td>
    <td>{{ employee.position }}</td>
    <td>{{ employee.salary | currency }}</td>
  </tr>
</tbody>
</table>
<script>
  var app = angular.module('employeeApp', []);
  app.controller('EmployeeController', function($scope) {
    $scope.employees = [
      { name: 'Hoshi', position: 'Data Analyst', salary: 65000 },
      { name: 'Mingyu', position: 'DevOps Engineer', salary: 72000 },
      { name: 'DK', position: 'Marketing Lead', salary: 58000 },
      { name: 'Joshua', position: 'Business Analyst', salary: 61000 },
      { name: 'Dino', position: 'Customer Support Lead', salary: 49000 }
    ];
    $scope.customFilter = function(employee) {
      var nameMatch = true;
      var salaryMatch = true;

      if ($scope.searchName) {
        nameMatch =
          employee.name.toLowerCase().includes($scope.searchName.toLowerCase());
      }
      if ($scope.searchSalary) {
        salaryMatch = employee.salary === parseInt($scope.searchSalary);
      }
      return nameMatch && salaryMatch;
    };
  });
</script>
</body>
</html>

```

Employee List

Name	Position	Salary
Hoshi	Data Analyst	\$65,000.00
Mingyu	DevOps Engineer	\$72,000.00
DK	Marketing Lead	\$58,000.00
Joshua	Business Analyst	\$61,000.00
Dino	Customer Support Lead	\$49,000.00

Employee List

Name	Position	Salary
Hoshi	Data Analyst	\$65,000.00

Employee List

Name	Position	Salary
DK	Marketing Lead	\$58,000.00

- 6. Develop an AngularJS program to create a simple online shopping cart application. Allow users to add products to the cart, view selected items along with their prices, and calculate the total amount.**

Source code:

```
<!DOCTYPE html>
<html ng-app="shoppingApp">
<head>
  <meta charset="UTF-8">
  <title>Simple Shopping Cart</title>
  <script
    src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>
  <style>
    table, th, td {
      border: 1px solid #ccc;
      border-collapse: collapse;
      padding: 8px;
    }
    h2 {
      color: #333;
    }
    button {
      padding: 4px 10px;
      margin: 2px;
    }
  </style>
</head>
<body ng-controller="CartController">
  <h2>Available Products</h2>
  <table>
    <tr>
      <th>Name</th>
      <th>Price (₹)</th>
      <th>Action</th>
    </tr>
    <tr ng-repeat="product in products">
      <td>{{ product.name }}</td>
      <td>{{ product.price }}</td>
      <td><button ng-click="addToCart(product)">Add to Cart</button></td>
    </tr>
  </table>
  <h2>Your Cart</h2>
  <table ng-if="cart.length > 0">
    <tr>
      <th>Name</th>
      <th>Price (₹)</th>
      <th>Action</th>
    </tr>
    <tr ng-repeat="item in cart">
      <td>{{ item.name }}</td>
```

```

<td>{{ item.price }}</td>
<td><button ng-click="removeFromCart($index)">Remove</button></td>
</tr>
<tr>
<td colspan="1"><strong>Total</strong></td>
<td colspan="2"><strong>₹{{ getTotal() }}</strong></td>
</tr>
</table>
<p ng-if="cart.length == 0">Your cart is empty.</p>
<script>
angular.module('shoppingApp', [])
.controller('CartController', function($scope) {
  // Predefined products
  $scope.products = [
    { name: 'Laptop', price: 50000 },
    { name: 'Smartphone', price: 20000 },
    { name: 'Headphones', price: 1500 },
    { name: 'Keyboard', price: 1000 },
    { name: 'USB Drive', price: 500 }
  ];
  // Initialize cart
  $scope.cart = [];
  // Add product to cart
  $scope.addToCart = function(product) {
    $scope.cart.push(product);
  };
  // Remove product from cart
  $scope.removeFromCart = function(index) {
    $scope.cart.splice(index, 1);
  };
  // Calculate total price
  $scope.getTotal = function() {
    let total = 0;
    angular.forEach($scope.cart, function(item) {
      total += item.price;
    });
    return total;
  };
});
</script>
</body>
</html>

```

Available Products

Name	Price (₹)	Action
Laptop	50000	Add to Cart
Smartphone	20000	Add to Cart
Headphones	1500	Add to Cart
Keyboard	1000	Add to Cart
USB Drive	500	Add to Cart

Your Cart

Your cart is empty.

Available Products

Name	Price (₹)	Action
Laptop	50000	Add to Cart
Smartphone	20000	Add to Cart
Headphones	1500	Add to Cart
Keyboard	1000	Add to Cart
USB Drive	500	Add to Cart

Your Cart

Name	Price (₹)	Action
Laptop	50000	Remove
Smartphone	20000	Remove
Total	₹70000	

- 7. Develop an AngularJS program to implement a student attendance tracker. Allow users to mark attendance (Present/Absent) for a list of students and display the summary of attendance. Note: The list of students may be predefined in the program.**

Source code:

```
<!DOCTYPE html>
<html ng-app="attendanceApp">
<head>
  <meta charset="UTF-8">
  <title>Student Attendance Tracker</title>
  <script
    src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>
  <style>
    table, th, td {
      border: 1px solid #aaa;
      border-collapse: collapse;
      padding: 8px;
    }
    th {
      background-color: #f0f0f0;
    }
    h2 {
      color: #333;
    }
    select {
      padding: 4px;
    }
  </style>
</head>
<body ng-controller="AttendanceController">
  <h2>Student Attendance Tracker</h2>
  <table>
    <tr>
      <th>Roll No</th>
      <th>Name</th>
      <th>Attendance</th>
    </tr>
    <tr ng-repeat="student in students">
      <td>{{ student.roll }}</td>
      <td>{{ student.name }}</td>
      <td>
        <select ng-model="student.status">
          <option value="Present">Present</option>
          <option value="Absent">Absent</option>
        </select>
      </td>
    </tr>
  </table>
</body>
```

```

        </tr>
    </table>
<h3>Attendance Summary</h3>
<p>Total Students: {{ students.length }}</p>
<p>Present: {{ getPresentCount() }}</p>
<p>Absent: {{ getAbsentCount() }}</p>
<script>
    angular.module('attendanceApp', [])
        .controller('AttendanceController', function($scope) {
            // Predefined list of students
            $scope.students = [
                { roll: 101, name: 'Anjali', status: 'Present' },
                { roll: 102, name: 'Bhavesh', status: 'Present' },
                { roll: 103, name: 'Charan', status: 'Absent' },
                { roll: 104, name: 'Divya', status: 'Present' },
                { roll: 105, name: 'Eshwar', status: 'Absent' }
            ];

            // Count Present students
            $scope.getPresentCount = function() {
                let count = 0;
                angular.forEach($scope.students, function(student) {
                    if (student.status === 'Present') count++;
                });
                return count;
            };

            // Count Absent students
            $scope.getAbsentCount = function() {
                let count = 0;
                angular.forEach($scope.students, function(student) {
                    if (student.status === 'Absent') count++;
                });
                return count;
            };
        });
    </script>
</body>
</html>

```

Student Attendance Tracker

Roll No	Name	Attendance
101	Anjali	Present ▾
102	Bhavesh	Present ▾
103	Charan	Absent ▾
104	Divya	Present ▾
105	Eshwar	Absent ▾

Attendance Summary

Total Students: 5

Present: 3

Absent: 2