App.py

```python
from flask import Flask, render_template, request, redirect, session, url_for
import sqlite3

app = Flask(__name__)
app.secret_key = 'secret123'  # Needed for sessions

# DB Setup
def init_db():
    with sqlite3.connect("lms.db") as conn:
        cur = conn.cursor()
        cur.execute('''
            CREATE TABLE IF NOT EXISTS admin (
                id INTEGER PRIMARY KEY AUTOINCREMENT,
                email TEXT UNIQUE,
                password TEXT
            )
        ''')
        cur.execute('''
            CREATE TABLE IF NOT EXISTS books (
                id INTEGER PRIMARY KEY AUTOINCREMENT,
                title TEXT,
                author TEXT,
                copies INTEGER
            )
        ''')
        cur.execute('''
            CREATE TABLE IF NOT EXISTS members (
                id INTEGER PRIMARY KEY AUTOINCREMENT,
                name TEXT,
                email TEXT
            )
        ''')
        cur.execute('''
            CREATE TABLE IF NOT EXISTS transactions (
                id INTEGER PRIMARY KEY AUTOINCREMENT,
                member_id INTEGER,
                book_id INTEGER,
                issue_date DATE DEFAULT CURRENT_DATE,
                return_date DATE
            )
        ''')
        cur.execute("INSERT OR IGNORE INTO admin (email, password) VALUES
('admin@lms.com', 'admin123')")
        conn.commit()

init_db()
```

```python
# --------------- Routes --------------- #

@app.route('/')
def index():
    return render_template("index.html")

@app.route('/login', methods=['GET', 'POST'])
def login():
    if request.method == 'POST':
        email = request.form['email']
        password = request.form['password']
        with sqlite3.connect("lms.db") as conn:
            cur = conn.cursor()
            cur.execute("SELECT * FROM admin WHERE email=? AND password=?",
(email, password))
            user = cur.fetchone()
            if user:
                session['admin'] = email
                return redirect('/dashboard')
            else:
                return "Invalid credentials"
    return render_template("login.html")

@app.route('/dashboard')
def dashboard():
    if 'admin' not in session:
        return redirect('/login')
    return render_template("dashboard.html")

@app.route('/books', methods=['GET', 'POST'])
def books():
    if 'admin' not in session:
        return redirect('/login')
    if request.method == 'POST':
        title = request.form['title']
        author = request.form['author']
        copies = request.form['copies']
        with sqlite3.connect("lms.db") as conn:
            conn.execute("INSERT INTO books (title, author, copies) VALUES (?,
?, ?)", (title, author, copies))
            conn.commit()
    with sqlite3.connect("lms.db") as conn:
        books = conn.execute("SELECT * FROM books").fetchall()
    return render_template("books.html", books=books)

@app.route('/members', methods=['GET', 'POST'])
def members():
```

```python
        if 'admin' not in session:
            return redirect('/login')
        if request.method == 'POST':
            name = request.form['name']
            email = request.form['email']
            with sqlite3.connect("lms.db") as conn:
                conn.execute("INSERT INTO members (name, email) VALUES (?, ?)",
(name, email))
                conn.commit()
        with sqlite3.connect("lms.db") as conn:
            members = conn.execute("SELECT * FROM members").fetchall()
        return render_template("members.html", members=members)


@app.route('/issue_return', methods=['GET'])
def issue_return():
    if 'admin' not in session:
        return redirect('/login')
    return render_template("issue_return.html")


@app.route('/issue_book', methods=['POST'])
def issue_book():
    member_id = request.form['member_id']
    book_id = request.form['book_id']
    with sqlite3.connect("lms.db") as conn:
        conn.execute("INSERT INTO transactions (member_id, book_id) VALUES (?,
?)", (member_id, book_id))
        conn.execute("UPDATE books SET copies = copies - 1 WHERE id = ?",
(book_id,))
        conn.commit()
    return redirect('/issue_return')


@app.route('/return_book', methods=['POST'])
def return_book():
    member_id = request.form['member_id']
    book_id = request.form['book_id']
    with sqlite3.connect("lms.db") as conn:
        conn.execute("""
            UPDATE transactions
            SET return_date = CURRENT_DATE
            WHERE member_id=? AND book_id=? AND return_date IS NULL
        """, (member_id, book_id))
        conn.execute("UPDATE books SET copies = copies + 1 WHERE id = ?",
(book_id,))
        conn.commit()
    return redirect('/issue_return')


@app.route('/logout')
def logout():
```

```
        session.pop('admin', None)
    return redirect('/')


if __name__ == '__main__':
    app.run(debug=True)
```

home.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Online Library</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container text-center mt-5">
    <h1> Online Library Management System</h1>
    <p class="lead">Welcome to your digital library</p>
    <a href="login.html" class="btn btn-primary">Login</a>
  </div>
</body>
</html>
```

Login.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Login - LMS</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container col-md-4 mt-5">
    <h2 class="text-center">Admin Login</h2>
    <form method="POST" action="/login">
      <div class="mb-3">
        <label>Email</label>
        <input type="email" name="email" class="form-control" required />
      </div>
      <div class="mb-3">
        <label>Password</label>
        <input type="password" name="password" class="form-control" required
/>
```

```
        </div>
        <button type="submit" class="btn btn-success w-100">Login</button>
    </form>
  </div>
</body>
</html>
```

Admin.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Dashboard - LMS</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container mt-4">
    <h2>📋 Admin Dashboard</h2>
    <div class="row mt-4">
      <div class="col-md-3">
        <a href="books.html" class="btn btn-outline-primary w-100">Manage
Books</a>
      </div>
      <div class="col-md-3">
        <a href="members.html" class="btn btn-outline-secondary w-100">Manage
Members</a>
      </div>
      <div class="col-md-3">
        <a href="issue_return.html" class="btn btn-outline-success w-
100">Issue/Return</a>
      </div>
      <div class="col-md-3">
        <a href="/logout" class="btn btn-outline-danger w-100">Logout</a>
      </div>
    </div>
  </div>
</body>
</html>
```

Books.html

```html
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <title>Manage Books</title>
```

```html
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container mt-4">
    <h2> Book Management</h2>
    <form method="POST" action="/add_book" class="mb-4">
      <div class="row">
        <div class="col-md-4"><input type="text" name="title"
placeholder="Book Title" class="form-control" required></div>
        <div class="col-md-4"><input type="text" name="author"
placeholder="Author" class="form-control" required></div>
        <div class="col-md-2"><input type="number" name="copies"
placeholder="Copies" class="form-control" required></div>
        <div class="col-md-2"><button type="submit" class="btn btn-primary w-
100">Add Book</button></div>
      </div>
    </form>
    <table class="table table-bordered">
      <thead><tr><th>ID</th><th>Title</th><th>Author</th><th>Copies</th><th>Ac
tion</th></tr></thead>
      <tbody>
        <!-- Book data populated from Flask backend -->
      </tbody>
    </table>
  </div>
</body>
</html>
```

Members.html

```html
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <title>Manage Members</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container mt-4">
    <h2>🧑‍🤝‍🧑 Member Management</h2>
    <form method="POST" action="/add_member" class="mb-4">
      <div class="row">
        <div class="col-md-4"><input type="text" name="name"
placeholder="Member Name" class="form-control" required></div>
```

```
        <div class="col-md-4"><input type="email" name="email"
placeholder="Email" class="form-control" required></div>
        <div class="col-md-4"><button type="submit" class="btn btn-primary w-
100">Add Member</button></div>
      </div>
    </form>
    <table class="table table-striped">
      <thead><tr><th>ID</th><th>Name</th><th>Email</th><th>Action</th></tr></t
head>
      <tbody>
        <!-- Member data populated from Flask backend -->
      </tbody>
    </table>
  </div>
</body>
</html>
```

Issue_return.html

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <title>Issue / Return</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
>
</head>
<body>
  <div class="container mt-4">
    <h2> Issue / Return Books</h2>
    <form method="POST" action="/issue_book" class="mb-3">
      <div class="row">
        <div class="col-md-4"><input type="text" name="member_id"
placeholder="Member ID" class="form-control" required></div>
        <div class="col-md-4"><input type="text" name="book_id"
placeholder="Book ID" class="form-control" required></div>
        <div class="col-md-4"><button type="submit" class="btn btn-success w-
100">Issue Book</button></div>
      </div>
    </form>
    <form method="POST" action="/return_book">
      <div class="row">
        <div class="col-md-4"><input type="text" name="member_id"
placeholder="Member ID" class="form-control" required></div>
        <div class="col-md-4"><input type="text" name="book_id"
placeholder="Book ID" class="form-control" required></div>
        <div class="col-md-4"><button type="submit" class="btn btn-warning w-
100">Return Book</button></div>
```

```html
        </div>
      </form>
    </div>
  </body>
</html>
```