

## **a) Factors to Consider for Backend Technology Stack**

1. **Performance and Scalability:**
  - Handles high loads and scales well.
2. **Development Speed:**
  - Fast development with good tools and libraries.
3. **Community Support:**
  - Large, active developer community.
4. **Compatibility:**
  - Works well with other parts of the stack (e.g., frontend, databases).
5. **Maintenance:**
  - Easy to update and maintain over time.
6. **Security:**
  - Built-in security features and quick patches for vulnerabilities.
7. **Cost:**
  - Affordable in terms of licenses and infrastructure.

## **b) Recommended Technology Stack**

**Node.js with Express** is suitable for the fitness booking web app. Here's why:

1. **Performance:**
  - Efficient handling of multiple users at the same time.
2. **Development Speed:**
  - Quick development and prototyping with many libraries.
  - Uses JavaScript for both frontend (React) and backend.
3. **Community Support:**
  - Large community and lots of resources available.
4. **Compatibility:**
  - Integrates well with APIs, databases, and real-time features.
5. **Maintenance:**
  - Regular updates and support.
  - Easy to learn and use, reducing development time.
6. **Security:**
  - Libraries available to enhance security.

### **Why Node.js:**

- Consistency in using JavaScript across the stack simplifies development.
- Ideal for startups needing rapid development and deployment.