**Requirement Gathering and Analysis Phase**

**Solution Architecture**

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| Date | 04/07/2024 |
| Team ID | SWTID1719997659 |
| Project Name | Book-Nest |
| Maximum Marks |  |

**Solution Architecture:**

**Client-side Components:**

* **User Interface (UI):**
  + Frontend framework like React.js is used to build a dynamic user interface and Developing components for book display, search functionality, user login/registration, shopping cart, and checkout process.

**Server-side Components:**

* **Web Server:** Deploying a Node.js server with Express.js to handle HTTP requests and serve static content.
* **Application Layer:**
  + Using Node.js with Express.js for backend logic and Creating RESTful APIs for CRUD operations on books, user authentication, shopping cart management, and order processing.
  + Implementing middleware for request validation, authentication, and error handling.

**Database:**

* Using MongoDB as the database management system and storing book data, user profiles, and orders.
* Utilizing an ORM library like Mongoose to interact with the database.

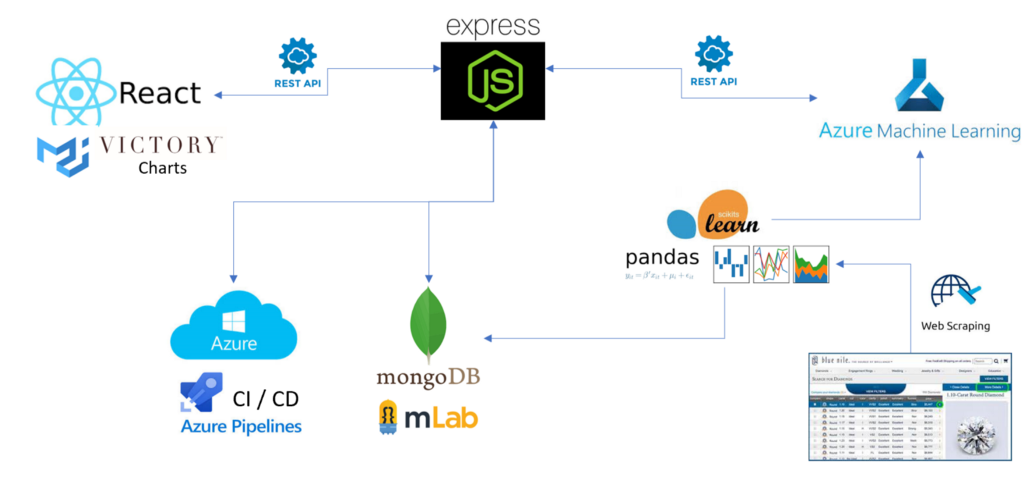
**Authentication and Authorization:**

* Implementing JWT (JSON Web Tokens) for secure user authentication during login and registration.
* Defining user roles (e.g., admin, user) and enforce access control to APIs based on these roles.

**Third-Party Services:**

* Integrate a payment gateway like Razorpay for handling online transactions securely.
* Utilizing external APIs like google books api for fetching book details to enhance user experience.

**Solution Architecture Diagram:**

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