React Developers TASK 5:

Task: Implement Request Logging Middleware in Express

Task Overview:

In our full-stack book management application, it's crucial to have a mechanism for logging incoming requests to aid in debugging and monitoring. This task involves implementing request logging middleware in Express to capture essential information about incoming requests, such as the request method, URL, and timestamp. The logged information should be stored in a file for future reference and debugging purposes.

Detailed Task Description:

1. Request Logging Middleware:

- Create a custom middleware function in your Express application to capture request information. This middleware should be executed for every incoming request.
- Implement the middleware logic to record the following details for each request:
    - Request method (e.g., GET, POST, PUT, DELETE).
    - Request URL or route.
    - Timestamp (date and time of the request).

2. Logging Format:

- Define a clear and consistent format for logging request information. This format should be human-readable and include all the relevant details, separated by delimiters or in a structured format like JSON.

3. Logging to a File:

- Set up a logging mechanism to write the captured request information to a log file. You can choose a common format like text (e.g., .log) or JSON, depending on your preference.
- Ensure that log entries are appended to the file, preserving historical request information.

4. Error Handling:

- Implement error handling in the request logging middleware to handle any unexpected issues during the logging process. For example, if there are problems writing to the log file, handle these errors gracefully.

5. Configuration Options:

- Consider adding configuration options for the middleware to allow customization of the log file path, format, and other parameters. This makes it more adaptable to different deployment environments.

6. Testing:

- Thoroughly test the request logging middleware by making various types of requests to your API. Verify that the middleware correctly captures and logs the request details.
- Test the error-handling mechanisms by intentionally causing logging errors and ensuring they are handled gracefully.

7. Documentation:

- Document the usage and configuration of the request logging middleware in your application's documentation. Include instructions on how to access and interpret the log files.

8. Deployment:

- Plan the deployment of the updated Express application with the request logging middleware to your production environment. Ensure that the log file path is appropriately configured for production use.

9. Monitoring and Post-Deployment Checks:

- After deployment, monitor the log files to verify that request information is being logged as expected.
- Conduct post-deployment checks to ensure that the middleware does not introduce performance bottlenecks or issues.

Evaluation Criteria:

Candidates will be evaluated based on their ability to:

- Develop request logging middleware in Express that captures essential request information.
- Handle errors and exceptions gracefully in the middleware.
- Configure and customize the middleware to suit different deployment environments.
- Thoroughly test and verify the functionality of the middleware.
- Document the usage and configuration of the middleware.
- Plan and execute a smooth deployment of the middleware to production.
- Monitor and troubleshoot post-deployment issues related to request logging.

Candidates should submit the middleware code, documentation, and a summary of testing and verification results as part of their task completion.