**Level 1 - Basic Knowledge on Backend**

**Basic Knowledge on Back End - 1 Hour**

**Please answer all the questions below !**

1. Give a list of advantages of Node.js
   - Node.js has a smooth and fast UI
   - Easier to overcome large data processing challenges.
   - Node.js has fewer files and less code which simplifies the whole process of application development.
   - Easier for calling other services which is critical for application to make communications with the database and platform API series.

2. Give an explanation about Synchronous & Asynchronous
   - Synchronous is the way program execute instructions until the task is completed, while asynchronous is the way program execute instructions by firing events or by calling a provided callback function.

3. What is a module in Node.js?
   - Functions organized in a single or multiple JS files which can be reused throughout the Node.js program.

4. Give an explanation about callback
   - For short it is a function for asynchronous method which is called at the completion of a given task.

5. What are array iterator functions in JavaScript?
   - Array iterator function is a function that returns each value in the associated array in sequence. Example: foreach method, map, filter.

6. What is the differentiation between SQL & NoSQL (at high level)?
   - SQL database is Relational Database while NoSQL database is non-relational or distributed database. SQL are table based database, NoSQL are document based, key-value pairs, graph databases or wide-column stores.

7. What is MongoDB?
   - MongoDB is a cross platform NoSQL program hence a document-oriented database program.

8. What is index in MongoDB?
   - Index is special data structure that store a small portion of the collection's data set in an easy to traverse form. It stores a specific field or set of fields, ordered by the value of the field.

9. What is Document & Collection in MongoDB?
   - In mongodb documents are data records that stored and gathered together in collections which is a grouping of MongoDB documents. Collection is RDBMS equivalent for table.

10. What Data Types are supported in MongoDB?
    - String
    - Int
    - Bool
    - Double
    - Min/max keys

- Arrays
- Timestamp
- Object
- Null
- Symbol
- Date
- Object id
- Binary data
- Code
- Regular expression

## Code Challenge. - 4 Hour

Create an Express.js server for a blog application that should have following detail:
1. Articles
2. Comments

Connect the express app to the mLab server to store data (Link :                   and
https://mlab.com/
create the following routes:
1. Api to do CRUD on article
2. Api to do CRUD on comment

**Note:**
1. Server should be able to handle CORS
2. Comments should be related to an article
3. All api can be written in REST (GraphQL is a plus)

Required additional test: - 2 Hour
test2.js test4.js, test5.js
Link:  Additional_Test