MERN - Challenge

Assignment – 02

1. MongoDB replication is the process of creating a copy of the same data set in more than one MongoDB server. This can be achieved by using a Replica Set. A replica set is a group of MongoDB instances that maintain the same data set and pertain to any MongoDB process.

2.

   I. Asynchronous and Event-Driven
   II. Single-Threaded
   III. Scalable
   IV. Quick execution of code
   V. Cross-platform compatibility
   VI. Uses JavaScript
   VII. Fast data streaming
   VIII. No Buffering

3. Non-relational (NoSQL) database

4. Node prevent code from being blocked using a **single-threaded event loop**. This is done by using a stack. While reading the code from top to bottom, each instruction is pushed into a stack and when its execution is completed, it pops out of the stack. Now we may come across an instruction/function that will take a longer time to execute which can result in the delay in popping the stack and execution of further statements.

   So, what Node.js allows is the use of Event Loop. Each time when we encounter such a situation, the process causing the delay is offloaded from the stack and the execution of that process continues parallel to further execution of the main code. Thus, the callback for that function is pushed into a task queue and the code continues to execute asynchronously. When the process completes its execution, the callback function returns the desired output from that process and resumes normal execution.

5. If we extend a class with Pure Component, there is no need for **shouldComponentUpdate()** Lifecycle Method. ReactJS Pure Component Class compares current state and props with new props and states to decide whether the React component should re-render itself or not.

   If the previous value of state or props and the new value of state or props is the same, the component will not re-render itself. Since Pure Components restricts the re-rendering when there is no use of re-rendering of the component. Pure Components are Class Components which extends **React.PureComponent**.