Node JS Tutorial

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WHAT IS NODE JS?

নোড জেএস এর গল্প

JavaScript Dec 1995-2009 April

JavaScript created as **client side language/front end language**. Only handle front end logics . JavaScript has no power to communicate with server.

JavaScript Can Do :

- Interact with temporary storage
- Make interactive web pages
- Interact with local storage
- Sending request for data to server
- Send request to server
- work as an interface between server and user

JavaScript Can Not Do:

- Querying the database
- Operations over databases
- Access/Write a file on server.
- Server Side Request , Response Handle
- Software Backend Operations.

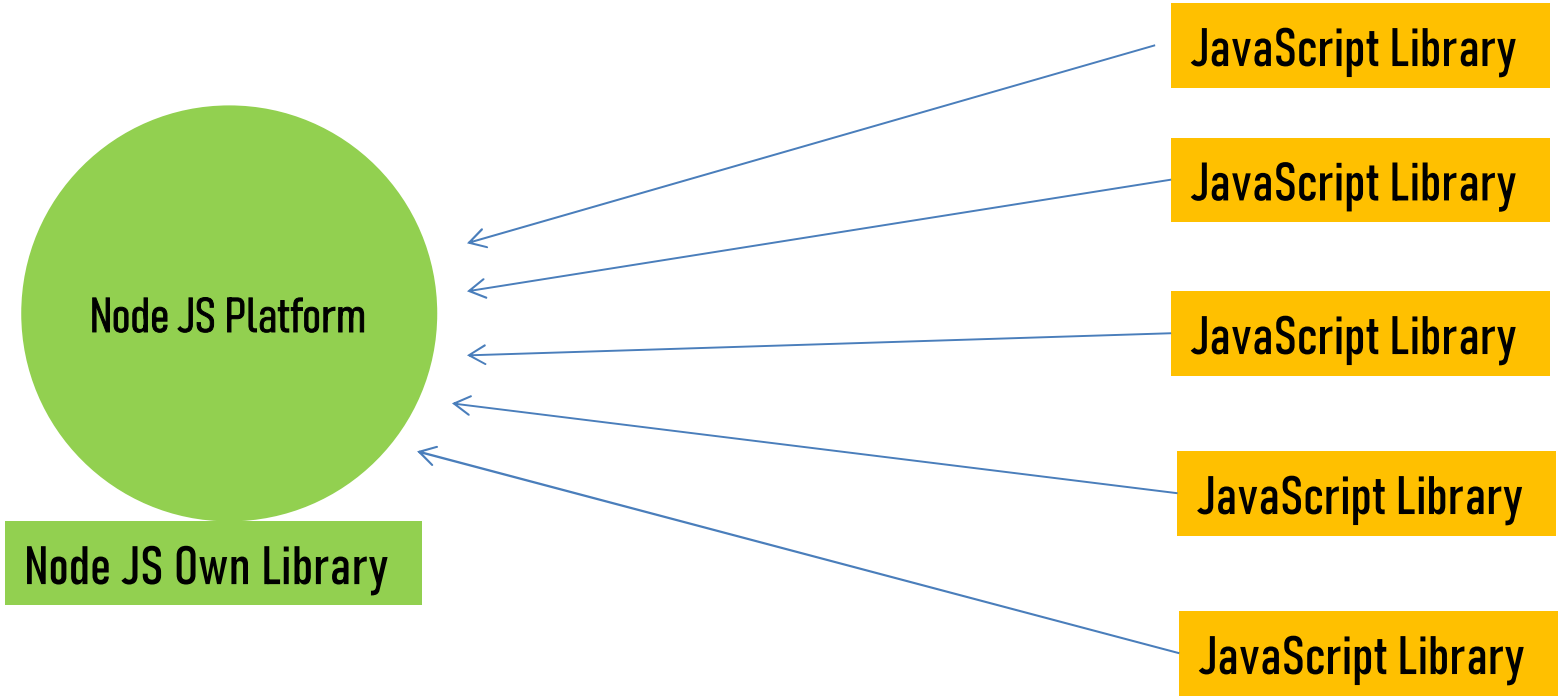
JavaScript From May-2009

Ryan Dahl Create An Awesome Platform May -2009
This is Node JS

Using Node JS Platform JavaScript Can Do:

- Querying the database
- Operations over databases
- Access/Write a file on server.
- Server Side Request , Response Handle
- Software Backend Operations.

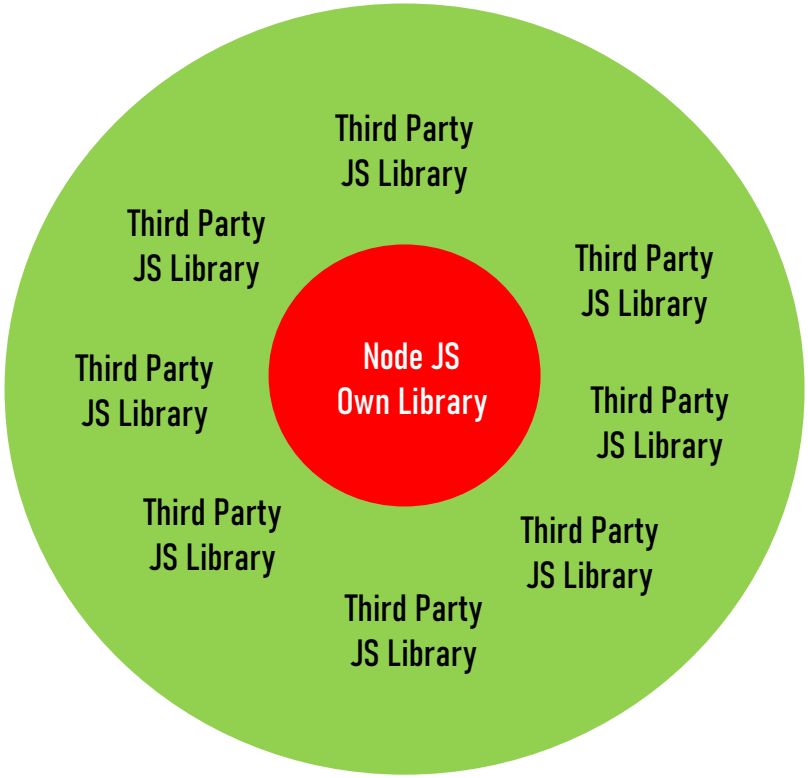
Node JS


JavaScript Library
JavaScript Library
JavaScript Library
JavaScript Library
JavaScript Library
Node JS Platform
Node JS Own Library

Node JS Application

Third Party Library Management

NPM (Node Package Manager)



Node JS Frequently Asked Questions

Is Node js a programming language ?
What previous knowledge required for Node JS ?

Node JS Tools

- Node Js Environment
- VS Code

Terminal

TOOLS

- Node.js
- VS Code
- Webstrome

TERMINAL

- Windows CMD
- Windows PowerShell
- VS Code Terminal Option
- Webstrom Terminal
- Node js Terminal

Node.js Module

What is module?

Node.js Module

Module in Node.js is a simple / complex functionality organized in single or multiple JavaScript files.

Node.js includes three types of modules:

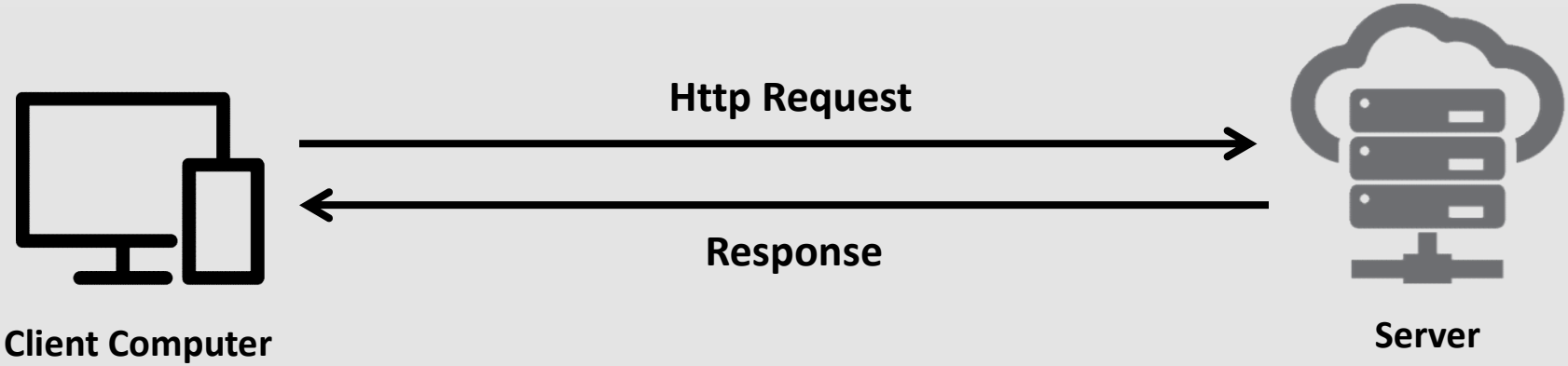
- Core Modules
- Local Modules
- Third Party Modules

Node.js Core Module

Core Module	Description
http	http module includes classes, methods and events to create Node.js http server.
url	url module includes methods for URL resolution and parsing.
querystring	querystring module includes methods to deal with query string.
path	path module includes methods to deal with file paths.
fs	fs module includes classes, methods, and events to work with file I/O.
util	util module includes utility functions useful for programmers.

REQUEST RESPONSE MODEL

Http/Https Protocol এ কি ঘটনা ঘটে

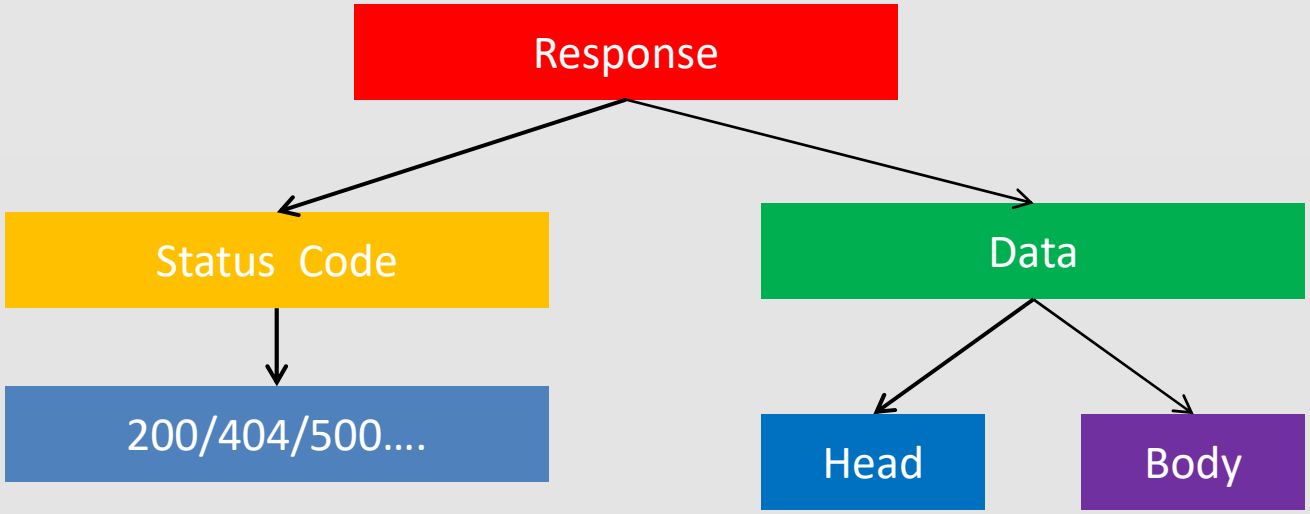


Http/Https Protocol এ কি ঘটনা ঘটে

HTTP REQUEST METHODS

- GET()
- DELETE()
- POST()
- PUT ()
- OPTIONS()
- HEAD()

Http/Https Protocol এ কি ঘটনা ঘটে



Http Client

যাহা সার্ভারে HTTP Request পাঠায় এবং Response Receive করে, তাহাকেই HTTP Client বলে

Example Of HTTP Client

- Axios
- Fetch
- Jquery Ajax
- cURL
- Volly
- Retrofit
- RestSharp

HTTP Client For Testing

- Postman
- Fiddler

Package.json

Application এর নথি

- Holds various metadata relevant to the project
- handle the project's dependencies
- Used identify the project
- Used to hold application information

Node.js URL Module

Built-in URL Module

- The URL module splits up a web address into readable parts.

http://rabbil.com/blog.html?year=2020&month=july;

Node.js fs module

- Node.js includes **fs module** to access physical file system.
- The fs module is responsible for all the **asynchronous or synchronous** file I/O operations.

- Synchronous: Loading…. Loading… you wait for it to finish….After finish you can move.
- Asynchronous: No Loading… No Loading … no need to wait…. you can move.

Node.js fs module essentials operation Asynchronous

Method	Description
fs.readFile(fileName [,options], callback)	Reads existing file.
fs.writeFile(filename, data[, options], callback)	Writes to the file. If file exists then overwrite the content otherwise creates new file.
fs.rename(oldPath, newPath, callback)	Renames an existing file.
fs.exists(path, callback)	Determines whether the specified file exists or not.
fs.unlink(path, callback);	File delete
fs.appendFile(file, data[, options], callback)	Appends new content to the existing file.
fs.open(path, flags[, mode], callback)	Opens file for reading or writing.
fs.mkdir(path[, mode], callback)	Creates a new directory.
fs.rmdir(path, callback)	Renames an existing directory.
fs.readdir(path, callback)	Reads the content of the specified directory.

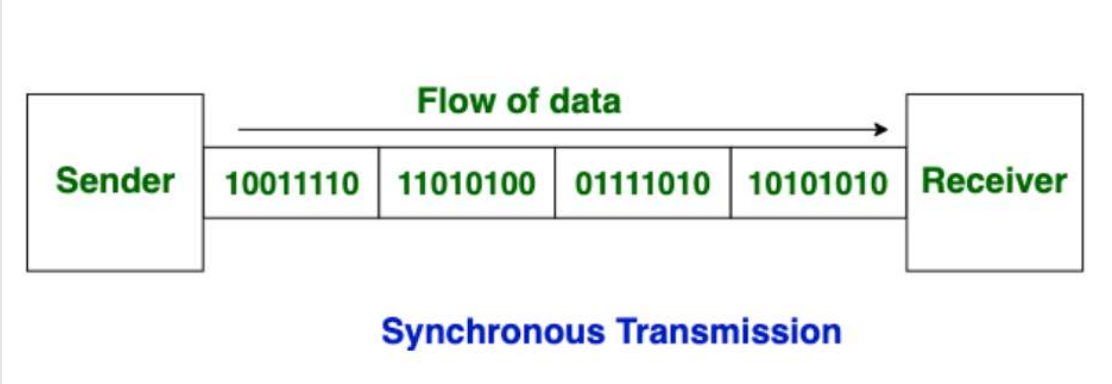
Node.js fs module essentials operation Synchronous

Method	Description
fs.readFileSync(fileName [,options])	Reads existing file.
fs.writeFileSync (filename, data[, options])	Writes to the file. If file exists then overwrite the content otherwise creates new file.
fs.renameSync(oldPath, newPath)	Renames an existing file.
fs.existsSync (path)	Determines whether the specified file exists or not.
fs.unlinkSync (path);	File delete
fs.appendFileSync (file, data[, options])	Appends new content to the existing file.
fs.openSync (path, flags[, mode])	Opens file for reading or writing.
fs.mkdirSync (path[, mode])	Creates a new directory.
fs.rmdirSync (path)	Renames an existing directory.
fs.readdirSync (path)	Reads the content of the specified directory.

Synchronous Asynchronous

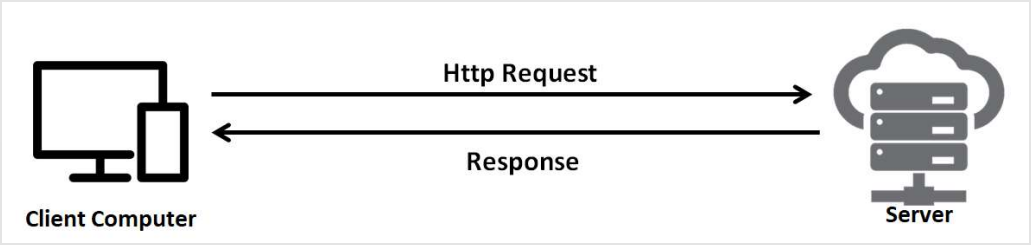
- Understanding Synchronous Asynchronous Theory
- Real Example For Clear Concept

Synchronous Theory

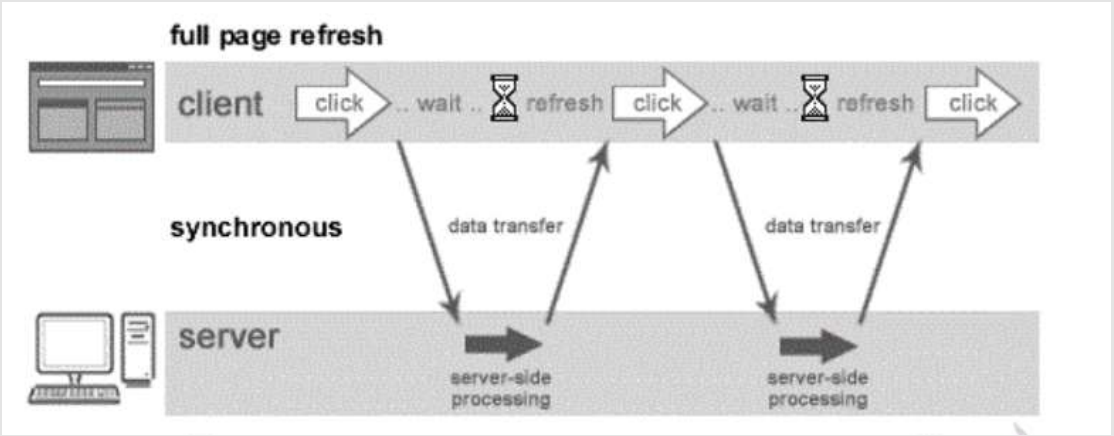


- Data is sent in form of blocks or frames.
- This transmission is the full duplex type.
- There is no gap present between data
- Synchronous transmission is fast.
- More efficient and more reliable for large amount of data.

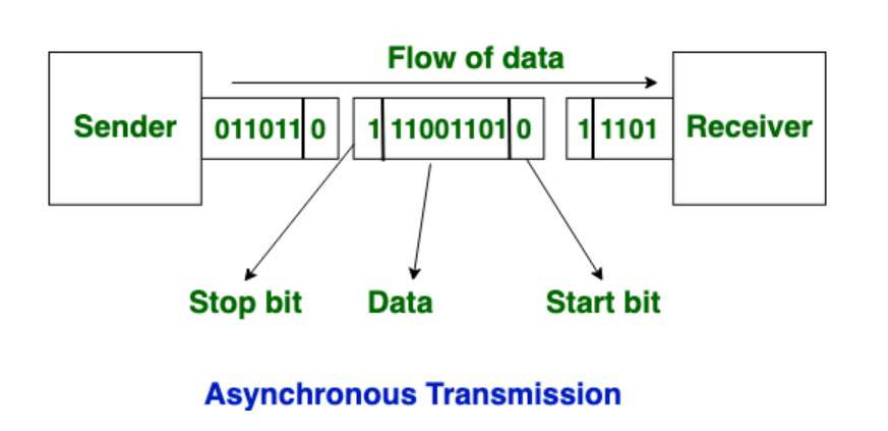
Synchronous Theory



- Loading Loading…..
- You wait for it to finish
- After finish you can move.

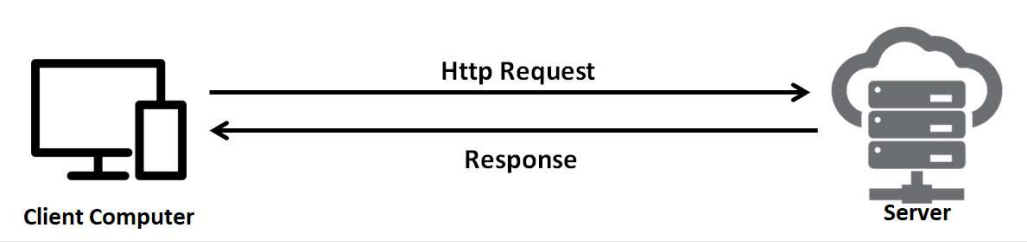


Asynchronous Theory

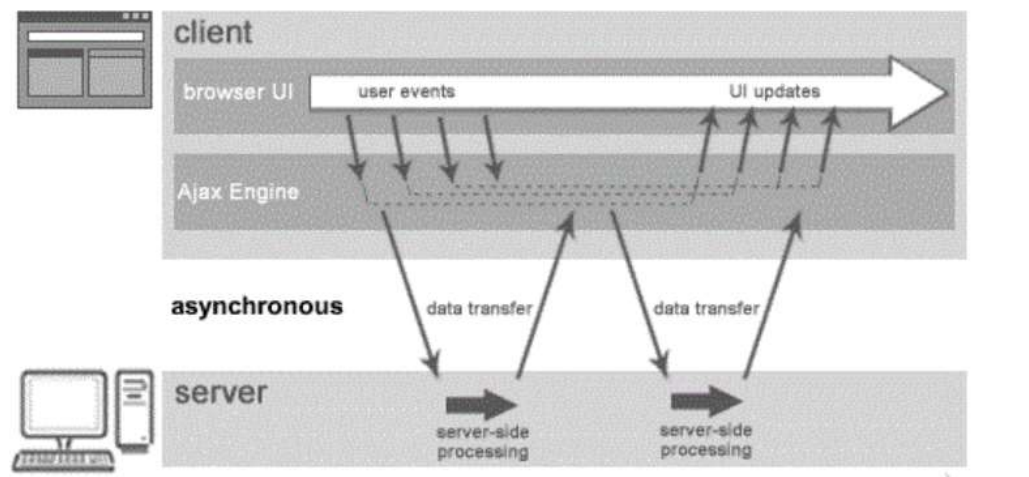


- This transmission is the half duplex type transmission
- Start bits and stop bits are added with data.
- Data is sent in form of byte or character.
- Asynchronous transmission is slow.
- There is present gap between data.

Asynchronous Theory



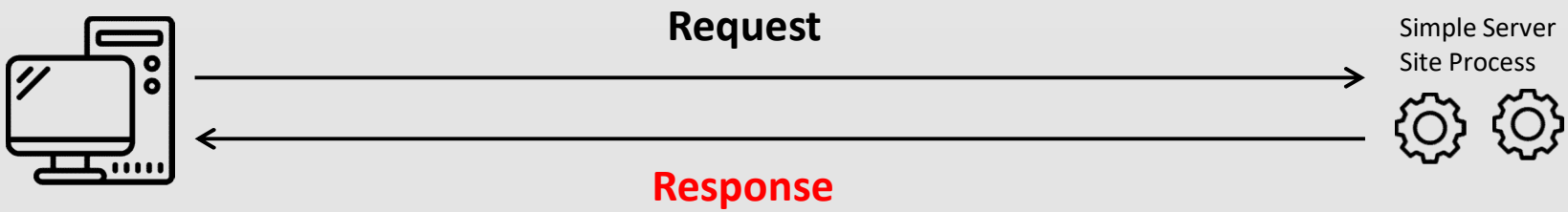
- No Loading… No Loading …
- No need to wait….
- You can move.



Synchronous Asynchronous

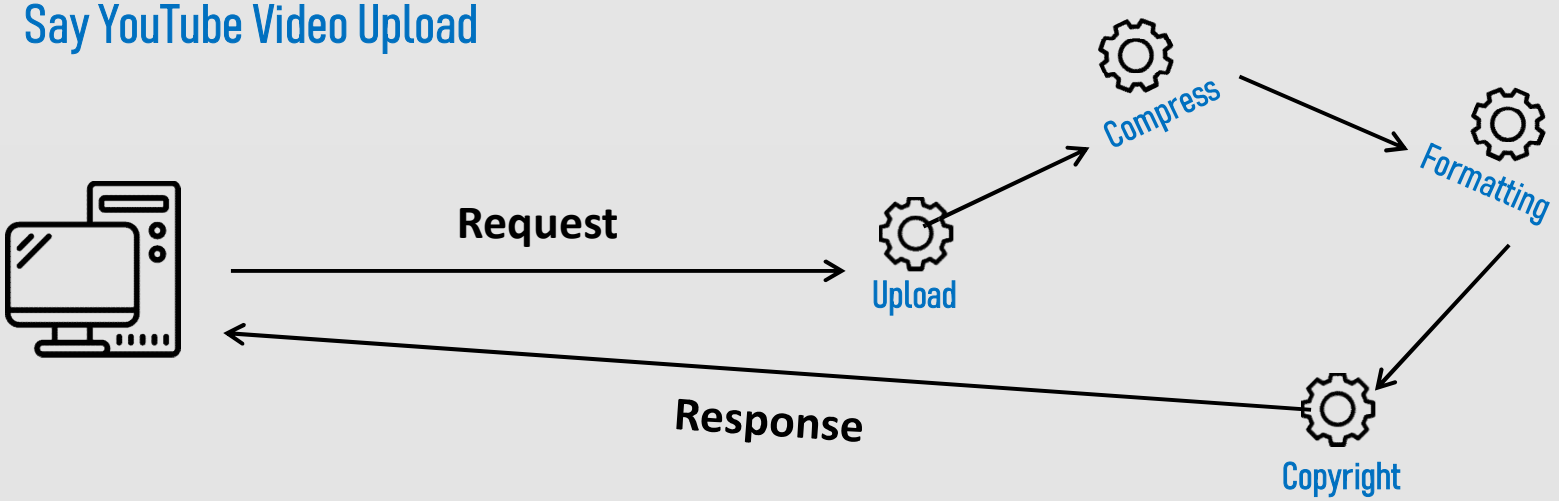
কখন কোনটি

Synchronous is Suitable



Asynchronous is Suitable

Say YouTube Video Upload



Node js website

Node JS

MY FIRST NODE JS WEBSITE

Create & Deploy In Real Server