Day 2 Revisit

Node JS

Command Line Option (CL options)

Globals (Variables, Functions)

OS

Timer

Errors

DNS

Net

**Agenda**

Crypto

TLS/SSL

Process (Child Process)

Buffers

Streams

Debugger

Crypto – This module is used for Cryptography based applications

1. Cipher
2. Decipher
3. Sign
4. Verify
5. HMAC

HASH – HASH is a Fixed lenth string of bits i.e can be generated based on certain block of source data.

Crypto module is used in block-chain based applications.

Block chain – Set of data embedded into blocks. (Data is encrypted using some encryption algorithms and then embedded into block)

HMAC – Hash based Message Authentication Code.

It’s a process of applying a hash algorithm to both data and secret key. Final output will be a single final hash.

HASH means secured way of storing and transferring the data.

TLS/SSL

TLS – Transport Layer Security

SSL – Secure Socket Layer

TLS with SSL is used for secured communications over web.

Public Key Cryptography – Both client and server has two-keys (public & private key)

Public key is shared with every one, but private key is secured.

**Debugger**

Nodejs has a simple TCP (Transmission Control Protocol) & built-in Debugging client.

Usage syntax

“node inspect [script.js | -e “script” | <host>:<port>]”

**Process**

Using this module we can able to get information about running processes. Process id, platform, version, uptime, release, usage info. Also used to kill the process, set uid, set groups and unmask.

Process is a global object.

Cwd() – prints current working directory

Hrtime() – prints high resolution time [seconds, nanoseconds]

memoryUsage() – return an object with memory usage information

process.kill(pid[,signal]) - used to kill a process with the given pid

uptime() – returns the process uptime in seconds

Child Process

This Module provides ability to spawn child process in a similar manner to popen(3)

3 ways of creating child process

1. Child\_process.exec() method
2. Child\_process.spawn() method
3. Child\_process.fork() method

Call back functions are generally used in async code.

Arrow functions are also called as anonymous or single line function.

Anonymous means name less function.

Functional Programming == Using arrow functions (Doing multiple operations at the same time or parallel)

Child\_process.exec(command[,options], callback)

Options – cwd, env, encoding(string- default ‘utf8’), shell, timeout, maxBuffer, killSignal, uid, gid

Buffers

This module helps to create and store the data in raw format using V8 heap.

Buffer class is a global object.

Different ways of creating Buffers

1. Creating uninitiated buffer [var buf= new Buffer(10);]
2. Creating a buffer from Array [var buf = new Buffer([10,14,21, 32,20]);
3. Creating buffer from String [ var buf= new Buffer(“Simplicity is the best”, “utf-8”);