* **Modules:**

M1.js:

let ob = {

area: function(r)

{

return (3.14\*r\*r);

},

circum: function(r)

{

return (2 \* 3.14 \* r);

}

}

module.exports = ob;

demo.js:

var s = require("./M1");

Calc.js:

exports.sum = function(a,b)

{

return (a+b);

}

exports.sub = function(a,b)

{

return (a-b);

}

exports.mul = function(a,b)

{

return (a\*b);

}

exports.div = function(a,b)

{

return (a/b);

}

demo1.js:

var ob = require('./Calc');

console.log("Calculator");

console.log("SUM="+ob.sum(5,10));

console.log("Difference="+ob.sub(5,10));

console.log("Product="+ob.mul(5,10));

console.log("Quotient="+ob.div(10,5));

* **File Streams:**

1. **Read.js:**

var fs = require('fs');

var stream = fs.createReadStream("data.txt");

var d = "";

stream.on('data', function(chunk){

d += chunk;

});

stream.on('end',function() {

console.log(d);

});

stream.on('error',function(err){

console.log(err);

})

**data.txt:**

file from server

sent through streams

1. **Write.js:**

var fs = require('fs');

var wstream = fs.createWriteStream("output.txt");

wstream.write("Hello CSIT");

wstream.write("Example on Writing content to files");

wstream.end();

wstream.on('finish',function()

{

console.log("Write operation is completed");

});

1. **Copying file contents:**

var fs = require('fs');

var rstream = fs.createReadStream("data.txt");

var wstream = fs.createWriteStream("output.txt");

rstream.pipe(wstream);

* **Events:**

1. var e = require('events');

var em = new e.EventEmitter();

var myfunction = function() //event handler or listener

{

console.log("Click Event is generated");

}

em.on('click',myfunction); //linking listener and event

em.emit('click'); //raising the event

1. var events = require('events');

var em = new events.EventEmitter();

em.on('myevent',fun1);

em.on('myevent',fun1);

em.on('myevent',fun2);

function fun1(msg)

{

console.log("Message from fun1:"+msg);

}

function fun2(msg)

{

console.log("Message from fun2:"+msg);

}

em.emit('myevent','Event is generated');

em.removeListener('myevent',fun1);

em.emit('myevent','Event is generated');

console.log(em.listenerCount('myevent'));

* **http:**

const http = require('http');

const server = http.createServer(function(req,res)

{

if(req.url === "/")

{

res.write("<h1>Welcome to my web site</h1>");

res.end();

}

if(req.url === "/page1")

{

res.write("<h1>This is page1 of my website</h1>");

res.end();

}

});

server.listen(5000);

console.log("Server is listening on port number 5000...");

* **os:**

var os = require('os');

console.log("Platform:"+os.platform());

console.log("Type of OS:"+os.type());

console.log("Hostname:"+os.hostname());

console.log("Release Version:"+os.release());

console.log("Architecture:"+os.arch());

console.log("Total memory in bytes:"+os.totalmem());

console.log("Free Memory in bytes:"+os.freemem());

var c = os.cpus();

console.log("Total Number of Cpus:"+c.length);

console.log(c);

* **REST API USING NODE:**

var http = require('http');

var fs = require('fs');

var url = require('url');

var stu = require('./Students.json');

var server = http.createServer(function(req,res)

{

function write(data)

{

fs.writeFile("Students.json", JSON.stringify(data),function(err)

{

console.log("Error");

});

}

if(req.url =="/") //endpoint 1

{

res.write("Welcome to my API");

res.end();

}

if(req.url =="/students" && req.method == "GET") //endpoint 2

{

fs.readFile("Students.json", function(err,data)

{

res.write(data);

res.end();

});

}

if(req.method=="POST" ) //endpoint 3

{

newStu = url.parse(req.url,true).query;

stu.push(newStu);

write(stu);

res.write("Student Record Added");

res.end();

}

if(req.method == "PUT") //endpoint 4

{

upStu = url.parse(req.url,true).query;

for(s in stu)

{

if(stu[s]['id'] == upStu['id'])

{

stu[s]['name'] = upStu['name'];

stu[s]['year'] = upStu['year'];

write(stu);

res.write("Student Record Updated");

}

}

res.end();

}

if(req.method == "DELETE") //endpoint 5

{

delStu= url.parse(req.url,true).query;

for(s in stu)

{

if(stu[s]['id'] == delStu['id'])

{

stu.splice(s,1);

write(stu);

res.write("Student Record Deleted");

}

}

res.end();

}

});

server.listen(4000, function()

{

console.log("Server started...");

});

**Students.json:**

[

{"id":101,"name":"abc","year":3},

{"id":102,"name":"xyz","year":2},

{"id":103,"name":"stu","year":4}

]