# Lab 16.1 - Test a Sync API

The labs-1 folder contains a **package.json** file and an **uppercase.js** file.

The **package.json** file contains the following:

```
{
  "name": "labs-1",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "UNLICENSED"
}
```

The **uppercase.js** file contains the following:

```
'use strict'

function uppercase (str) {
  if (typeof str !== 'string') throw Error('input must be a string')
  return str.toUpperCase()
}

module.exports = uppercase
```

Write tests for the `uppercase.js` file. Ensure that when `npm test` is executed with the labs-1 folder as the current working directory the `uppercase.js` file is fully tested.

Any additional dependencies, such as a test harness, may be additionally installed.

Also in the labs-1 folder is a `validate.js` file. The implementation can be checked with `node validate.js`. The implementation is successful if the final output of `node validate.js` is passed!

For completeness the following is the `validate.js` file contains the following, but it is not necessary to understand it for the purposes of this exercise:

```
'use strict'
const assert = require('assert').strict
const { spawnSync } = require('child_process')
const { writeFileSync } = require('fs')
const uppercase = require.resolve('./uppercase')
const uppercaseCode =
Buffer.from('27757365207374472696374270a66756e6374696f6e207570706572263
173652028737472229207b0a20206966202874797065206f662073747220213d3d2027737
472696e672729207468726f77204572726f722827696e707574206d757374206265206
120737472696e67290a202072657475726e207374722e746f5570706572436173652
8290a7d0a0a6d6f64756c652e6578706f727473203d2075757070657263617365',
'hex')

try {
  {
    writeFileSync(uppercase, uppercaseCode)

    const sp = spawnSync('npm', ['test'], {
      stdio: 'ignore'
    })

    assert.equal(sp.status, 0, 'tests should be successful (is
package.json test script configured?)')
  }

  {
    const badOutput = `'use strict'
    function uppercase (str) {
```

```
      if (typeof str !== 'string') throw Error('input must be a
string')
      return 'bad output'
    }

    module.exports = uppercase
    `

    writeFileSync(uppercase, badOutput)

    const sp = spawnSync('npm', ['test'], {
      stdio: 'ignore'
    })

    assert.equal(sp.status, 1, 'output should be tested')
  }

  {
    const badValidation = `'use strict'
    function uppercase (str) {
      return str.toUpperCase()
    }

    module.exports = uppercase
    `

    writeFileSync(uppercase, badValidation)

    const sp = spawnSync('npm', ['test'], {
      stdio: 'ignore'
    })

    assert.equal(sp.status, 1, 'error case should be tested')
  }
  console.log('passed!')
} finally {
  writeFileSync(uppercase, uppercaseCode)
}
```