

Module 5 Description

Tested on both the systems below-

Macbook Pro (13 inch, 2017, Two Thunderbolt 3 ports)

Operating system: mac Catalina (10.15.7)

Processor: 2.3 GHz Dual-Core Intel Core i5

Memory 8GB 2133 MHz LPDDR3

Graphics Intel Iris Plus Graphics 540 1536 MB

Safari Version 14.0

Terminal 2.1.0

Operating system: Windows 10 home (20H2) – created on this system

OS build:19042.662

Experience: Windows feature experience pack 120.2212.551.0

HP ENVY X360 convertible 15-DS1XXX

Processor AMD Rizen 5 4500U with Radeon graphics 2.38GHz

Memory 16GB

Browser version: Microsoft edge (87.0.664.57)

Tested using windows CMD terminal

TypeScript – 4.1.2

Node.js version (v14.15.1)

Typescript

```
"devDependencies": {
  "@types/express": "^4.17.9",
  "@types/node": "^14.14.10"
},
"dependencies": {
  "body-parser": "^1.19.0",
  "express": "^4.17.1"
}
```

Expected Behaviour:

This project serves mainpage.html and other static resources using advanced typescript feature of **modules**. We have placed our class definitions and resources inside **resource.ts** file. We import multiple resources from this **resources module**. Further, we also switch to using the **Express module** to serve the webpage.

Debugging with typescript:

We can use debugging with typescript by compiling like :

tsc --sourceMap m5server.ts

Inside m5server.ts, we add the line

```
// #sourceMappingURL= m5server.js.map
```

This allows the browser to correlate the typescript code with Javascript code and help debug the application for e.g. by using breakpoints.

Webpack

```
"devDependencies": {
  "@babel/core": "^7.7.2",
  "@babel/preset-env": "^7.7.1",
  "babel-loader": "^8.0.6",
  "babel-plugin-syntax-dynamic-import": "^6.18.0",
  "html-webpack-plugin": "^3.2.0",
  "ts-loader": "^6.2.1",
  "typescript": "^3.7.2",
  "webpack": "^4.41.2",
  "webpack-cli": "^3.3.10",
  "webpack-dev-server": "^3.9.0"
}
```

We implement a simple typescript file that imports two modules, module1 and module2 and then displays a combined message based on both the modules. By using webpack, all these files are compiled together in the right order and placed inside the dist/ directory. Webpack also runs a template index.html file that calls this main.js file automatically.

We compile the project with **npm run build**.

We run the project with **npm start**.

Expected behaviour is that the webpage index.html displays the message "Hi I am module 1Hi I am module 2".