

PRÁCTICA 2: TIMER

Desarrollo Web en Entorno Cliente

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Instrucciones del ejercicio

📖 README



Práctica final de la 2ª evaluación: Timer

Crea un timer con la siguiente funcionalidad

Un botón de UP que añada minutos al timer (hasta 59)

Un botón de DOWN que reste minutos al timer (hasta 0)

Un botón de START que haga comience el timer (de forma decreciente)

Un botón RESET que coloque el contador al último valor introducido y lo pare.

El proyecto tiene que tener:

Estructura de git

en la carpeta del proyecto (Prefiero siempre iniciar Git ya en la ruta de mi proyecto)

`git init`

o creando la carpeta del proyecto

`git init nombreProyecto`

Estructura de proyecto node (npm)

en la carpeta del proyecto

`npm init`

o creando la carpeta del proyecto

`npm init nombreProyecto`

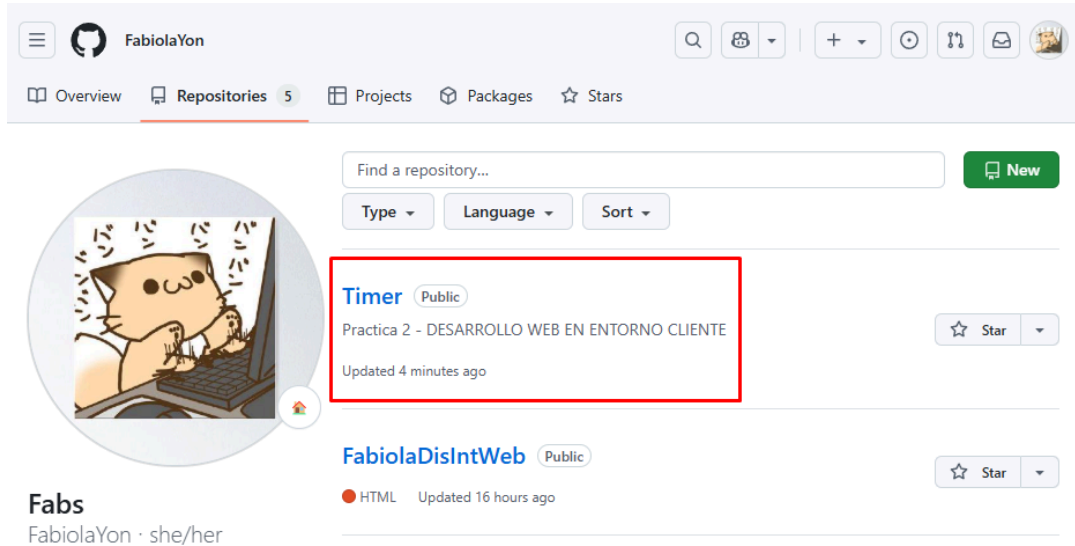
.gitignore (al menos la carpeta node_modules)

Debe ser modular

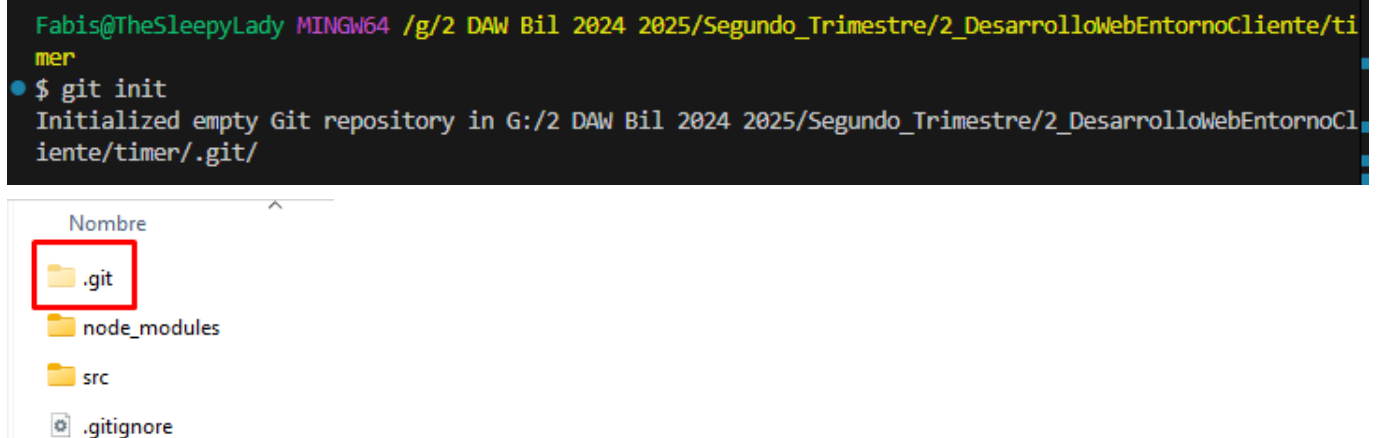
Iniciar Git y vincular con el repositorio

GitHub: <https://github.com/FabiolaYon?tab=repositories>

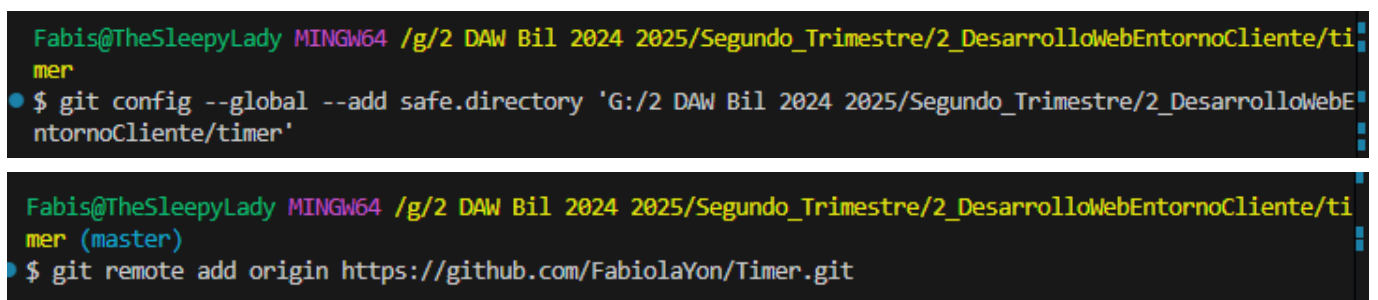
Branch: master



Inicializo Git en la ruta de mi proyecto



Vinculo mi ruta del proyecto con mi repositorio en GitHub



Inicializar npm

```
Fabis@TheSleepyLady MINGW64 /g/2 DAW Bil 2024 2025/Segundo_Trimestre/2_DesarrolloWebEntornoCliente/ti
mer
● $ npm init -y
Wrote to G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer\package.json:

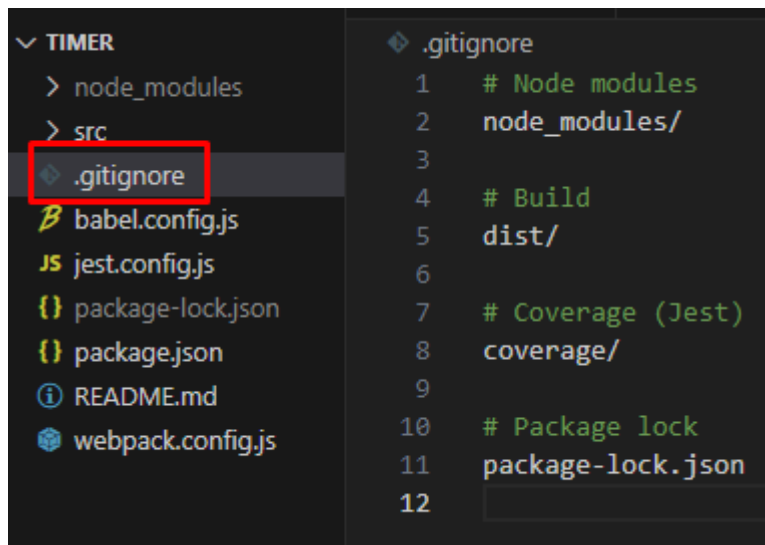
{
  "name": "timer",
  "version": "1.0.0",
  "main": "main.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "",
  "license": "ISC",
  "license": "ISC",
  "license": "ISC",
  "license": "ISC",
  "keywords": [],
  "description": ""
}
```

Este generará:

package.json

```
{ } package.json X babel.config.js JS jest.config.js
{ } package.json > { } devDependencies
1  {
2    "name": "timer",
3    "version": "1.0.0",
4    "main": "main.js",
5    "scripts": {
6      "start": "webpack serve --open",
7      "build": "webpack",
8      "test": "jest"
9    },
10   "author": "",
11   "license": "ISC",
12   "keywords": [],
13   "description": "",
14   "devDependencies": {
15     "@babel/core": "^7.26.9",
16     "@babel/preset-env": "^7.26.9",
17     "babel-jest": "^29.7.0",
18     "css-loader": "^7.1.2",
19     "jest": "^29.7.0",
20     "mini-css-extract-plugin": "^2.9.2",
21     "sass": "^1.85.0",
22     "sass-loader": "^16.0.5",
23     "webpack": "^5.98.0",
24     "webpack-cli": "^6.0.1",
25     "webpack-dev-server": "^5.2.0"
26   }
27 }
```

Configuración de .gitignore



The screenshot shows a code editor with a dark theme. On the left, a file explorer sidebar is open, showing a directory structure under 'TIMER'. The files listed are 'node_modules', 'src', '.gitignore' (highlighted with a red rectangle), 'babel.config.js', 'jest.config.js', 'package-lock.json', 'package.json', 'README.md', and 'webpack.config.js'. The main editor area displays the content of the '.gitignore' file, which is numbered 1 through 12. The content of the file is as follows:

```
1 # Node modules
2 node_modules/
3
4 # Build
5 dist/
6
7 # Coverage (Jest)
8 coverage/
9
10 # Package lock
11 package-lock.json
12
```

Configuración de Webpack

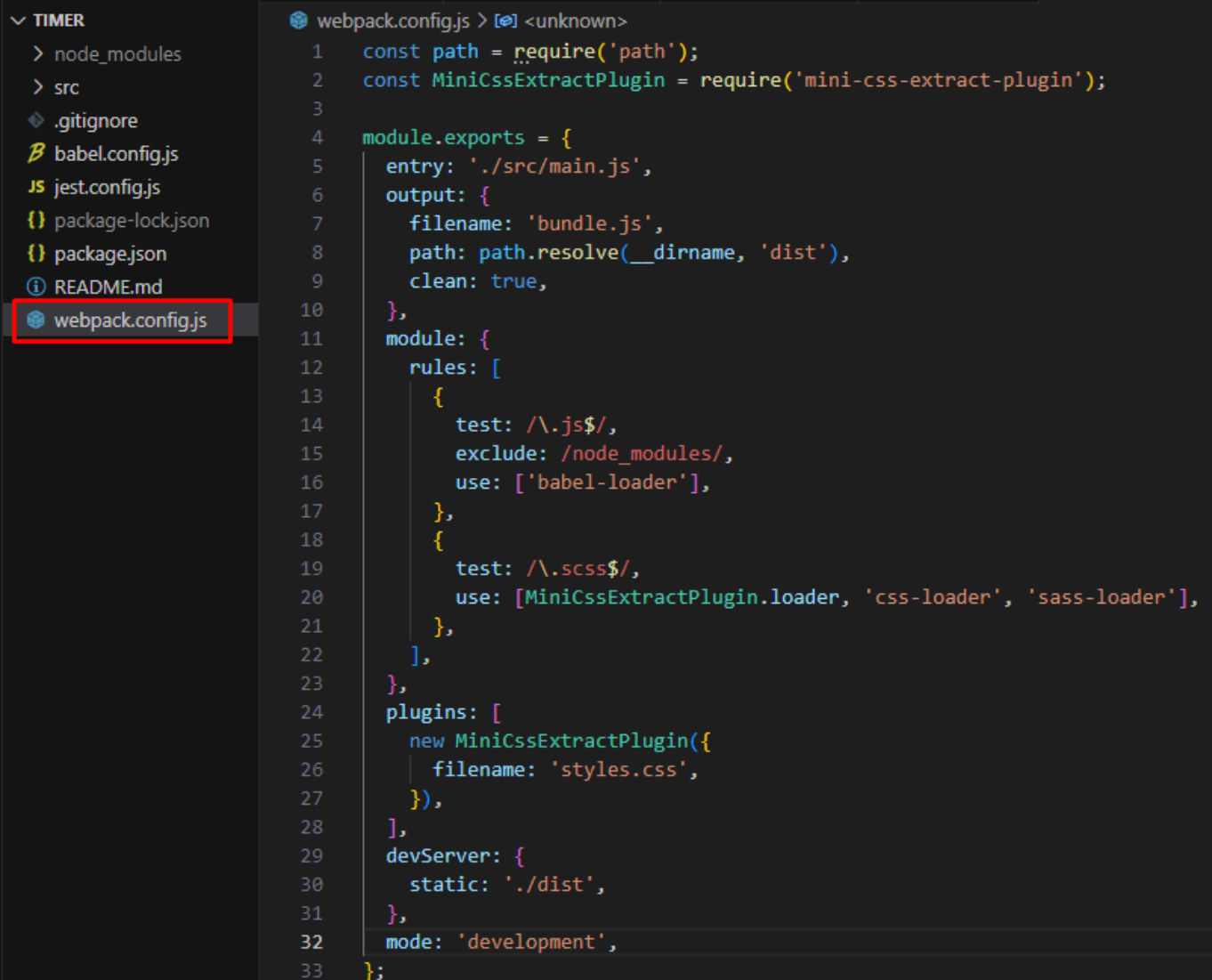
`npm install --save-dev webpack webpack-cli webpack-dev-server`

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev webpack webpack-cli webpack-dev-server
added 297 packages, and audited 298 packages in 5m

53 packages are looking for funding
  run 'npm fund' for details

found 0 vulnerabilities
```

Creamos el siguiente archivo con la configuración:



```
webpack.config.js > [?] <unknown>
1  const path = require('path');
2  const MiniCssExtractPlugin = require('mini-css-extract-plugin');
3
4  module.exports = {
5    entry: './src/main.js',
6    output: {
7      filename: 'bundle.js',
8      path: path.resolve(__dirname, 'dist'),
9      clean: true,
10   },
11   module: {
12     rules: [
13       {
14         test: /\.js$/,
15         exclude: /node_modules/,
16         use: ['babel-loader'],
17       },
18       {
19         test: /\.scss$/,
20         use: [MiniCssExtractPlugin.loader, 'css-loader', 'sass-loader'],
21       },
22     ],
23   },
24   plugins: [
25     new MiniCssExtractPlugin({
26       filename: 'styles.css',
27     }),
28   ],
29   devServer: {
30     static: './dist',
31   },
32   mode: 'development',
33 };
```

Instalación de dependencias adicionales para CSS y SASS

`npm install --save-dev mini-css-extract-plugin css-loader sass-loader sass`

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev mini-css-extract-plugin css-loader sass-loader sass
added 23 packages, and audited 321 packages in 18s

62 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

Modificación package.json para incluir scripts de Webpack

> src	2	"name": "timer",
◆ .gitignore	3	"version": "1.0.0",
🔗 babel.config.js	4	"main": "main.js",
JS jest.config.js	5	▶ Debug
{ } package-lock.json	6	"scripts": {
{ } package.json	7	→ "start": "webpack serve --open",
📄 README.md	8	→ "build": "webpack",
🌀 webpack.config.js	9	"test": "jest"
	10	},
		"author": "",

Configurar Jest y Babel

`npm install --save-dev jest @babel/core @babel/preset-env babel-jest`

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev jest @babel/core
@babel/preset-env babel-jest
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and tested way to coales
ce async requests by a key value, which is much more comprehensive and powerful.
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported

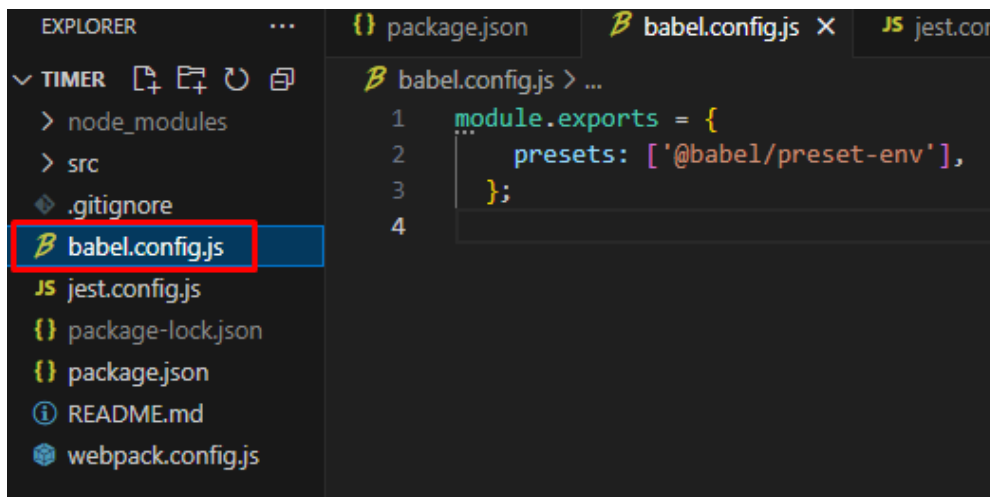
added 317 packages, and audited 638 packages in 2m

84 packages are looking for funding
  run 'npm fund' for details

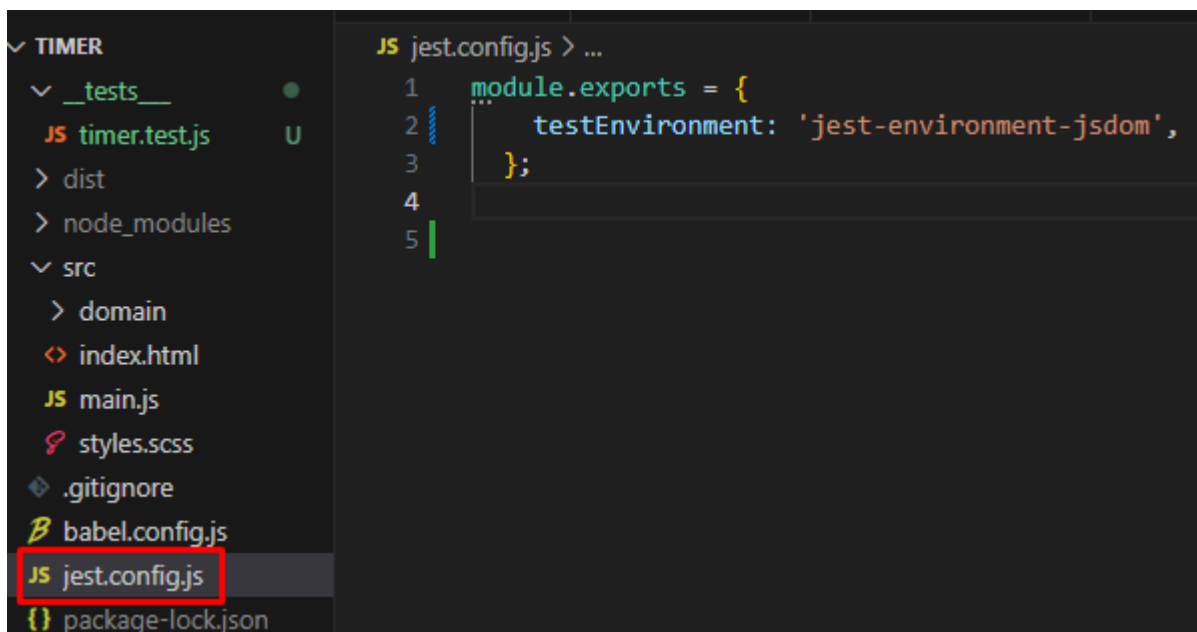
found 0 vulnerabilities
```

Creamos y configuramos los siguientes archivos:

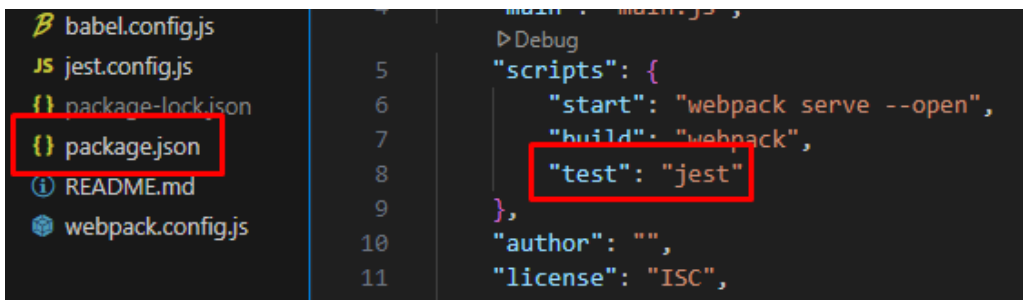
babel.config.js



jest.config.js



Añadimos "jest" al package.json:

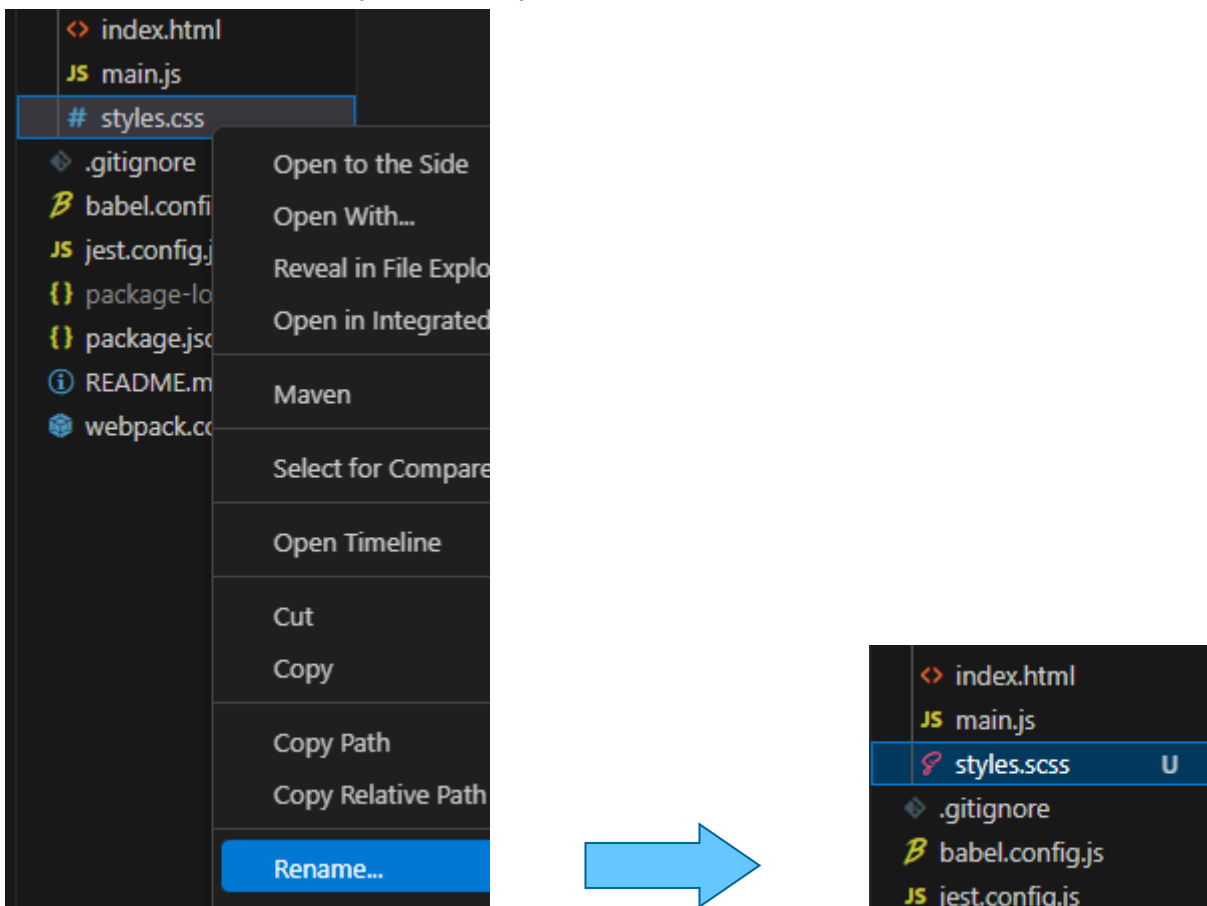


```
babel.config.js
jest.config.js
package-lock.json
package.json
README.md
webpack.config.js
```

```
main: main.js,
  > Debug
  "scripts": {
    "start": "webpack serve --open",
    "build": "webpack",
    "test": "jest"
  },
  "author": "",
  "license": "ISC",
```

Configuración de Sass

Renombramos el archivo styles.css a styles.scss:



Instalar Babel

npm list babel-loader

Verificamos si está instalado o no. En mi caso no lo está:

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm list babel-loader
timer@1.0.0 G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer
`-- (empty)
```

Este paquetes el que conecta Babel con Webpack. Instalo:

npm install --save-dev babel-loader

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev babel-loader
added 10 packages, and audited 648 packages in 3s

91 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

Verifico la instalación de dependencias de Babel:

npm install --save-dev @babel/core @babel/preset-env babel-jest

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev @babel/core @babel/preset-env babel-jest
up to date, audited 648 packages in 2s

91 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

Instalar jest-environment-jsdom

npm install --save-dev jest-environment-jsdom

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm install --save-dev jest-environment-jsdom
npm warn deprecated abab@2.0.6: Use your platform's native atob() and btoa() methods instead
npm warn deprecated domexception@4.0.0: Use your platform's native DOMException instead

added 53 packages, and audited 701 packages in 32s

95 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

Ajustar el código para Webpack

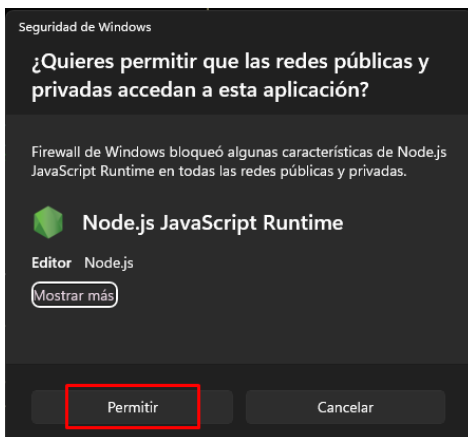
npm run build

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm run build

> timer@1.0.0 build
> webpack

asset bundle.js 12.2 KiB [emitted] (name: main)
runtime modules 670 bytes 3 modules
cacheable modules 6.57 KiB
  ./src/main.js 3.01 KiB [built] [code generated]
  ./src/domain/constants.js 232 bytes [built] [code generated]
  ./src/domain/timer-entity.js 3.33 KiB [built] [code generated]
webpack 5.98.0 compiled successfully in 1468 ms
```

npm start



```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm start

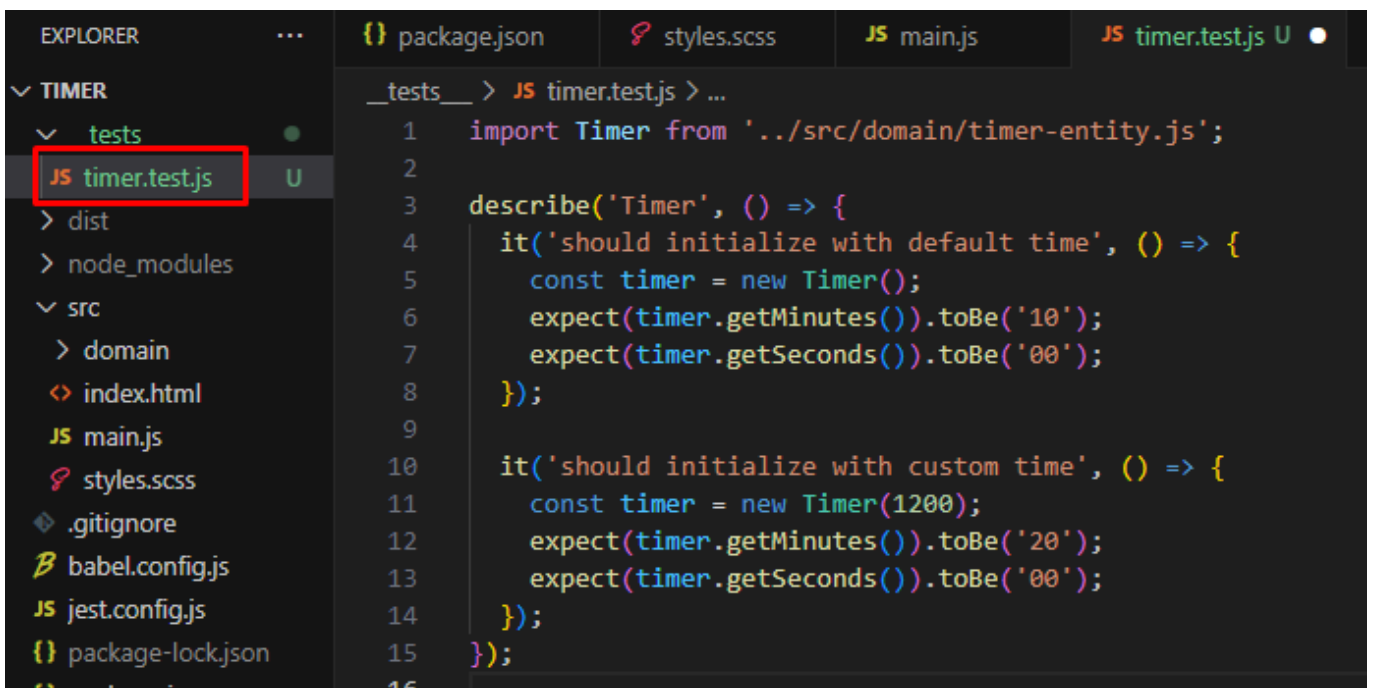
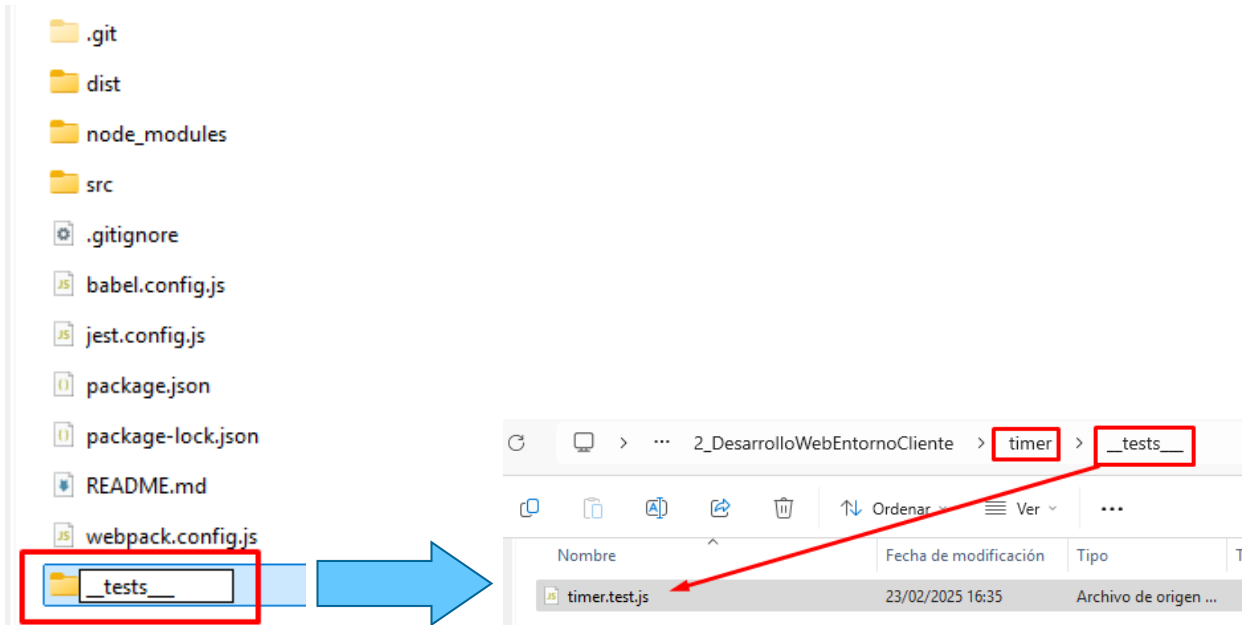
> timer@1.0.0 start
> webpack serve --open

<i> [webpack-dev-server] Project is running at:
<i> [webpack-dev-server] Loopback: http://localhost:8080/, http://[::1]:8080/
<i> [webpack-dev-server] On Your Network (IPv4): http://192.168.58.1:8080/
<i> [webpack-dev-server] Content not from webpack is served from './dist' directory
<i> [webpack-dev-middleware] wait until bundle finished: /
asset bundle.js 179 KiB [emitted] (name: main)
runtime modules 30.6 KiB 14 modules
cacheable modules 112 KiB
  modules by path ./node_modules/ 106 KiB
    modules by path ./node_modules/webpack-dev-server/client/ 81.9 KiB 8 modules
    modules by path ./node_modules/webpack/hot/*.js 5.17 KiB
      ./node_modules/webpack/hot/dev-server.js 1.94 KiB [built] [code generated]
      ./node_modules/webpack/hot/log.js 1.73 KiB [built] [code generated]
      + 2 modules
    ./node_modules/events/events.js 14.5 KiB [built] [code generated]
    ./node_modules/ansi-html-community/index.js 4.16 KiB [built] [code generated]
  modules by path ./src/ 6.57 KiB
    ./src/main.js 3.01 KiB [built] [code generated]
    ./src/domain/constants.js 232 bytes [built] [code generated]
    ./src/domain/timer-entity.js 3.33 KiB [built] [code generated]
webpack 5.98.0 compiled successfully in 1289 ms
```

Añadir Pruebas Unitarias con Jest

Creación de un test básico para Timer

Creamos una carpeta llamada “__tests__” y en ella un archivo **timer.test.js** :



y ejecutamos las pruebas:

npm test

```
PS G:\2 DAW Bil 2024 2025\Segundo_Trimestre\2_DesarrolloWebEntornoCliente\timer> npm test

> timer@1.0.0 test
> jest

console.log
  New Timer: 600

    at new log (src/domain/timer-entity.js:14:17)

console.log
  New Timer: 1200

    at new log (src/domain/timer-entity.js:14:17)

(node:9040) [DEP0040] DeprecationWarning: The 'punycode' module is deprecated. Please use a userland alternative instead
.
(Use 'node --trace-deprecation ...' to show where the warning was created)
PASS __tests__/timer.test.js
  Timer
    ✓ should initialize with default time (30 ms)
    ✓ should initialize with custom time (2 ms)

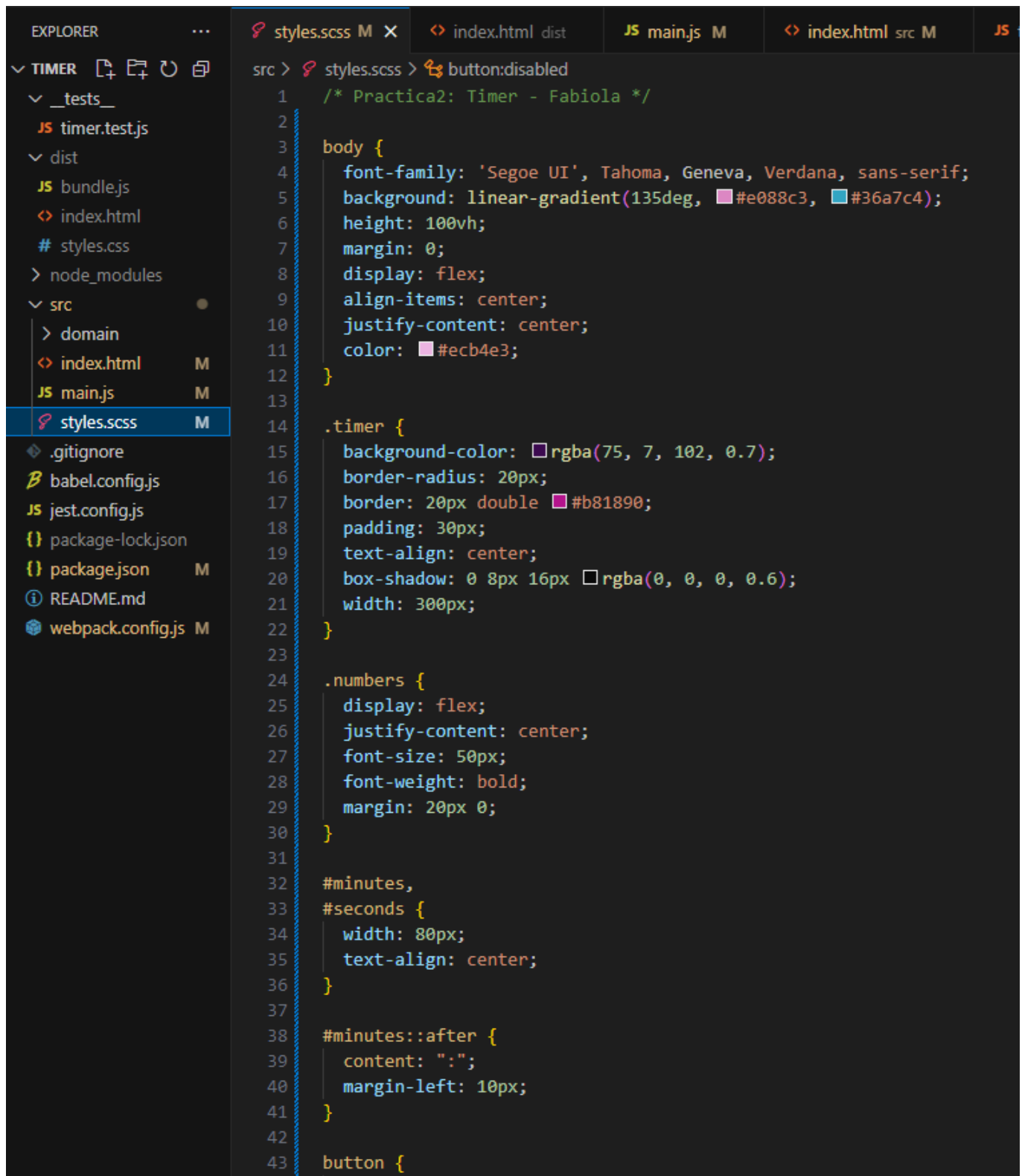
Test Suites: 1 passed, 1 total
Tests: 2 passed, 2 total
Snapshots: 0 total
Time: 2.422 s
Ran all test suites.
```

Funcionalidad del Timer

He realizado cambios para cumplir los requisitos de la funcionalidad de la practica:

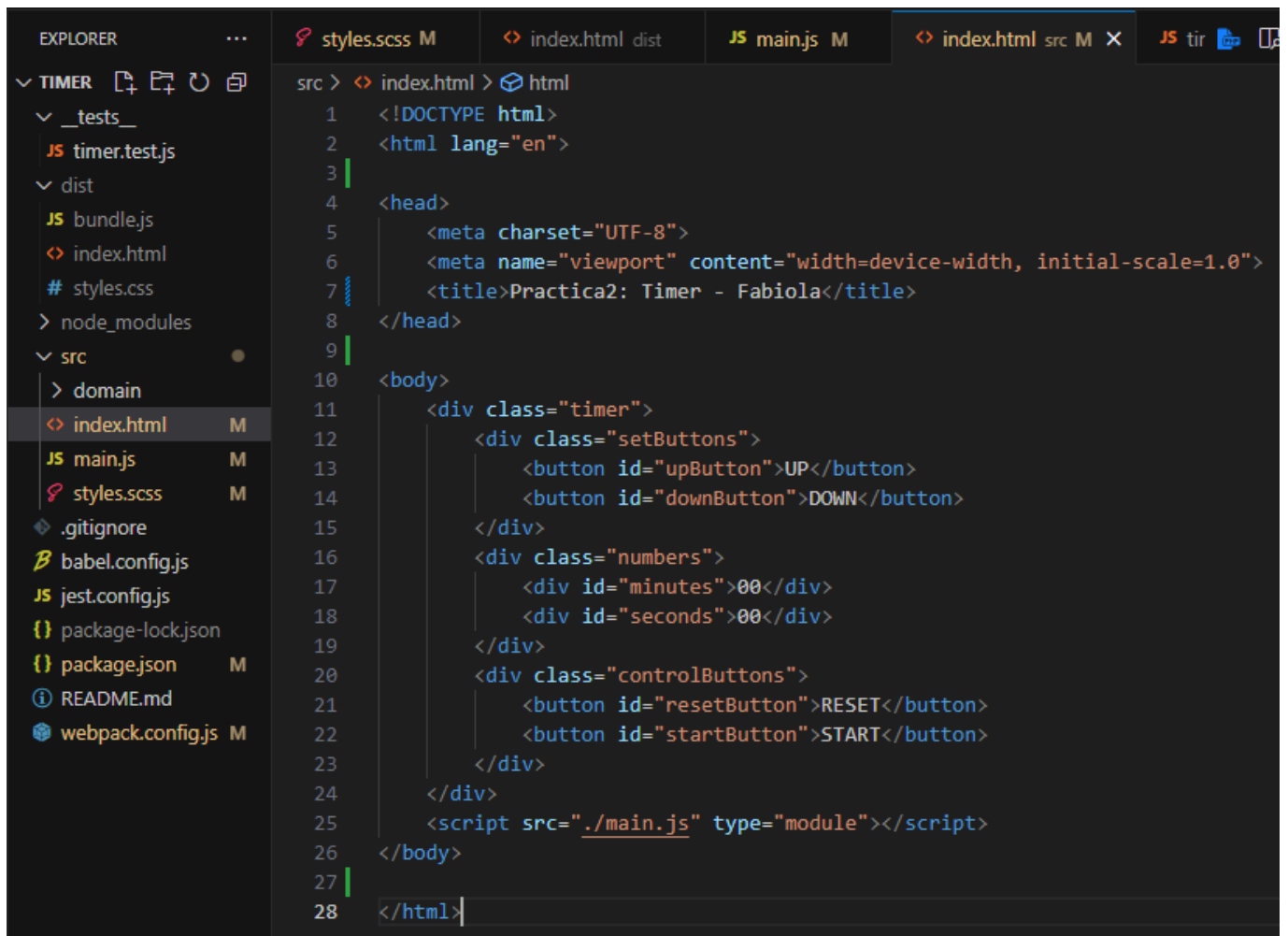
- El botón RESET pone el contador en 0, pero según la practica debería restablecer el tiempo al último valor introducido y detener el cronómetro si está corriendo.
- En Timer (timer-entity.js) no se está utilizando para gestionar el tiempo y tic() es independiente sin usar Timer.
- setTimeout se ejecuta y no se puede detener salvo cuando llega a 0 y se debe detener cuando se hace click en RESET.
- Se ha modificado main.js.

styleless.scss



```
src > styles.scss > button:disabled
1  /* Practica2: Timer - Fabiola */
2
3  body {
4    font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
5    background: linear-gradient(135deg, #e088c3, #36a7c4);
6    height: 100vh;
7    margin: 0;
8    display: flex;
9    align-items: center;
10   justify-content: center;
11   color: #ecb4e3;
12 }
13
14 .timer {
15   background-color: rgba(75, 7, 102, 0.7);
16   border-radius: 20px;
17   border: 20px double #b81890;
18   padding: 30px;
19   text-align: center;
20   box-shadow: 0 8px 16px rgba(0, 0, 0, 0.6);
21   width: 300px;
22 }
23
24 .numbers {
25   display: flex;
26   justify-content: center;
27   font-size: 50px;
28   font-weight: bold;
29   margin: 20px 0;
30 }
31
32 #minutes,
33 #seconds {
34   width: 80px;
35   text-align: center;
36 }
37
38 #minutes::after {
39   content: ":";
40   margin-left: 10px;
41 }
42
43 button {
```


index.html



```
src > <> index.html > html
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="UTF-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>Practica2: Timer - Fabiola</title>
8  </head>
9
10 <body>
11     <div class="timer">
12         <div class="setButtons">
13             <button id="upButton">UP</button>
14             <button id="downButton">DOWN</button>
15         </div>
16         <div class="numbers">
17             <div id="minutes">00</div>
18             <div id="seconds">00</div>
19         </div>
20         <div class="controlButtons">
21             <button id="resetButton">RESET</button>
22             <button id="startButton">START</button>
23         </div>
24     </div>
25     <script src="./main.js" type="module"></script>
26 </body>
27
28 </html>
```

main.js

```
/** Practica2: Timer - Fabiola */
import { TIME_FORMAT } from "../domain/constants.js";
import Timer from "../domain/timer-entity.js";
import './styles.scss';

const MAX_MINUTES = 59;
const MIN_MINUTES = 0;

let minutes = 0;
let seconds = 0;
let timerInterval = null;
let initialTime = 0;

let myTimer = new Timer(0);

const upButton = document.getElementById("upButton");
const downButton = document.getElementById("downButton");
const resetButton = document.getElementById("resetButton");
const startButton = document.getElementById("startButton");

const minutesText = document.getElementById("minutes");
const secondsText = document.getElementById("seconds");

const updateDisplay = () => {
  minutesText.innerHTML = myTimer.getMinutes();
  secondsText.innerHTML = myTimer.getSeconds();
};

const addMinute = () => {
  if (minutes < MAX_MINUTES) {
    minutes++;
    myTimer.remainingTime = minutes * 60 + seconds;
    updateDisplay();
  }
};

const subMinute = () => {
  if (minutes > MIN_MINUTES) {
    minutes--;
    myTimer.remainingTime = minutes * 60 + seconds;
    updateDisplay();
  }
};
```

```
const resetTime = () => {
  clearInterval(timerInterval);
  myTimer.remainingTime = initialTime;
  updateDisplay();
};

const startTimer = () => {
  if (myTimer.remainingTime <= 0) return;
  initialTime = myTimer.remainingTime;
  clearInterval(timerInterval);
  timerInterval = setInterval(() => {
    myTimer.remainingTime--;
    updateDisplay();

    if (myTimer.remainingTime <= 0) {
      clearInterval(timerInterval);
      alert("TIME!!!");
    }
  }, 1000);
};

upButton.addEventListener("click", addMinute);
downButton.addEventListener("click", subMinute);
resetButton.addEventListener("click", resetTime);
startButton.addEventListener("click", startTimer);

// Inicializar la pantalla
updateDisplay();
```

http://localhost:8081

