

## Admin Panel

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# Chapter 1

## Admin Panel

The app to directly control the Sunfounder PiCar.

### 1.1 Install Packages:

```
pnpm i
```

### 1.2 Run:

```
pnpm run electron
```

### 1.3 Build EXE to export:

```
pnpm run preelectron-pack  
AND  
pnpm run electron-pack
```

### 1.4 Template from:

<https://github.com/soulehshaikh99/create-svelte-electron-app>



## Chapter 2

# Class Index

### 2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

<a href="#">Code</a>	7
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## Chapter 3

# File Index

### 3.1 File List

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## Chapter 4

# Class Documentation

### 4.1 Code Class Reference

#### Public Member Functions

- [constructor](#) ()
- [get](#) ()
- [generate](#) ()

#### 4.1.1 Member Function Documentation

##### 4.1.1.1 constructor()

```
Code::constructor ( ) [inline]
```

##### 4.1.1.2 generate()

```
Code::generate ( ) [inline]
```

##### 4.1.1.3 get()

```
Code::get ( ) [inline]
```

The documentation for this class was generated from the following file:

- [js/websocket.js](#)

## 4.2 WebSocketServer Class Reference

### Public Member Functions

- [constructor](#) ()
- [connect](#) (port)
- [isConnected](#) ()
- [close](#) ()
- [generateCode](#) ()
- [getCode](#) ()
- [getPort](#) ()
- [getRaspberryPiMap](#) ()
- [getSelectedRaspberryPi](#) ()
- [selectRaspberryPi](#) (uuid)
- [async startConnections](#) ()
- [sendBehaviourTree](#) (behaviour\_tree)
- [startBehaviourTree](#) ()
- [stopBehaviourTree](#) ()

### 4.2.1 Member Function Documentation

#### 4.2.1.1 close()

```
WebSocketServer::close ( ) [inline]
```

Call this function to close the WebSocket server.

#### 4.2.1.2 connect()

```
WebSocketServer::connect (
    port ) [inline]
```

Call this function to start the WebSocket server.

##### Parameters

<i>{number}</i>	port
-----------------	------

#### 4.2.1.3 constructor()

```
WebSocketServer::constructor ( ) [inline]
```

@type {WebSocket.Server | undefined}



@type {number | undefined}

@type {Code}

@type {Map<string, WebSocket>}

@type {RaspberryPi | undefined}

#### 4.2.1.4 generateCode()

```
WebSocketServer::generateCode ( ) [inline]
```

Returns

{number}

#### 4.2.1.5 getCode()

```
WebSocketServer::getCode ( ) [inline]
```

Returns

{number}

#### 4.2.1.6 getPort()

```
WebSocketServer::getPort ( ) [inline]
```

Returns

{number}

#### 4.2.1.7 getRaspberryPiMap()

```
WebSocketServer::getRaspberryPiMap ( ) [inline]
```

Returns

{Map<string, WebSocket>}

#### 4.2.1.8 getSelectedRaspberryPi()

```
WebSocketServer::getSelectedRaspberryPi ( ) [inline]
```

##### Returns

{RaspberryPi | undefined}

#### 4.2.1.9 isConnected()

```
WebSocketServer::isConnected ( ) [inline]
```

#### 4.2.1.10 selectRaspberryPi()

```
WebSocketServer::selectRaspberryPi (
    uuid ) [inline]
```

Select a Raspberry Pi to send / receive messages from.

##### Parameters

{string}	uuid
----------	------

##### Returns

#### 4.2.1.11 sendBehaviourTree()

```
WebSocketServer::sendBehaviourTree (
    behaviour_tree ) [inline]
```

##### Parameters

{string}	behaviour_tree
----------	----------------

#### 4.2.1.12 startBehaviourTree()

```
WebSocketServer::startBehaviourTree ( ) [inline]
```

#### 4.2.1.13 startConnections()

```
async WebSocketServer::startConnections ( ) [inline]
```

#### 4.2.1.14 stopBehaviourTree()

```
WebSocketServer::stopBehaviourTree ( ) [inline]
```

The documentation for this class was generated from the following file:

- [js/websocket.js](#)



## Chapter 5

# File Documentation

### 5.1 js/behaviour\_tree.js File Reference

#### Functions

- function [isDev](#) ()
- function [sendBehaviourTree](#) (\_event, args)
- function [startBehaviourTree](#) (\_event, \_args)
- function [stopBehaviourTree](#) (\_event, \_args)
- function [getBehaviourTreeList](#) ()
- function [updateBehaviourTreeList](#) (behaviour\_tree\_list)
- function async [saveBehaviourTree](#) (\_event, args)
- function async [removeBehaviourTree](#) (\_event, args)
- function async [validateBehaviourTree](#) (\_event, args)
- ipcMain [handle](#) ('sendBehaviourTree', [sendBehaviourTree](#))

#### Variables

- [const](#) { [app](#), ipcMain } = require('electron')
- [const](#) [exec](#) = util.promisify(require('child\_process').exec)
- [const](#) [Os](#) = require('os')
- [const](#) [path](#) = require("path")
- [const](#) [fs](#) = require("fs")
- [const](#) [base\\_path](#) = app.getAppPath()
- [const](#) [resources\\_dir](#) = [isDev](#)() ? path.join([base\\_path](#), 'resources') : path.join([base\\_path](#), '..', '..', 'resources')

#### 5.1.1 Function Documentation

##### 5.1.1.1 [getBehaviourTreeList](#)()

```
function getBehaviourTreeList ( )
```

#### 5.1.1.2 handle()

```
ipcMain handle (
    'sendBehaviourTree' ,
    sendBehaviourTree )
```

#### 5.1.1.3 isDev()

```
function isDev ( )
```

#### 5.1.1.4 removeBehaviourTree()

```
function async removeBehaviourTree (
    _event,
    args )
```

#### 5.1.1.5 saveBehaviourTree()

```
function async saveBehaviourTree (
    _event,
    args )
```

#### 5.1.1.6 sendBehaviourTree()

```
function sendBehaviourTree (
    _event,
    args )
```

#### 5.1.1.7 startBehaviourTree()

```
function startBehaviourTree (
    _event,
    _args )
```

#### 5.1.1.8 stopBehaviourTree()

```
function stopBehaviourTree (
    _event,
    _args )
```

#### 5.1.1.9 updateBehaviourTreeList()

```
function updateBehaviourTreeList (
    behaviour_tree_list )
```

## Parameters

<code>{any[]}</code>	<code>behaviour_tree_list</code>
----------------------	----------------------------------

**5.1.1.10 validateBehaviourTree()**

```
function async validateBehaviourTree (
    _event,
    args )
```

@type {string}

**5.1.2 Variable Documentation****5.1.2.1 base\_path**

```
const base_path = app.getAppPath()
```

**5.1.2.2 const**

```
const { app, ipcMain } = require('electron')
```

**5.1.2.3 exec**

```
const exec = util.promisify(require('child_process').exec)
```

**5.1.2.4 fs**

```
const fs = require("fs")
```

#### 5.1.2.5 Os

```
const Os = require('os')
```

#### 5.1.2.6 path

```
const path = require("path")
```

#### 5.1.2.7 resources\_dir

```
const resources_dir = isDev() ? path.join(base_path, 'resources') : path.join(base_path,
'..', '..', 'resources')
```

## 5.2 js/device.js File Reference

### Functions

- function [getLocalIPList](#) ([\\_event](#), [\\_args](#))
- ipcMain [handle](#) ('[getLocalIPList](#)', [getLocalIPList](#))

### Variables

- [const](#) [os](#)
- module [exports](#)

### 5.2.1 Function Documentation

#### 5.2.1.1 getLocalIPList()

```
function getLocalIPList (  
    _event,  
    _args )
```

#### 5.2.1.2 handle()

```
ipcMain handle (  
    'getLocalIPList' ,  
    getLocalIPList )
```



## 5.2.2 Variable Documentation

### 5.2.2.1 exports

module exports

**Initial value:**

```
= {  
  getLocalIPList: getLocalIPList  
}
```

### 5.2.2.2 os

const os

**Initial value:**

```
= require('os')  
const { ipcMain } = require('electron')
```

## 5.3 js/main.js File Reference

### Functions

- function `isDev` ()
- function `createWindow` ()
- `app` on ('ready', `createWindow`)
- function `onClose` ()

### Variables

- `const` { `app`, `BrowserWindow` } = `require`('electron')
- `const` `path` = `require`('path')
- `const` `serve` = `require`('electron-serve')
- `const` `loadURL` = `serve`({ `directory`: 'public' })

### 5.3.1 Function Documentation

#### 5.3.1.1 `createWindow()`

```
function createWindow ( )
```

#### 5.3.1.2 isDev()

```
function isDev ( )
```

#### 5.3.1.3 on()

```
app on (
    'ready' ,
    createWindow )
```

#### 5.3.1.4 onClose()

```
function onClose ( )
```

### 5.3.2 Variable Documentation

#### 5.3.2.1 const

```
const { app, BrowserWindow } = require('electron')
```

#### 5.3.2.2 loadURL

```
const loadURL = serve({ directory: 'public' })
```

#### 5.3.2.3 path

```
const path = require('path')
```

#### 5.3.2.4 serve

```
const serve = require('electron-serve')
```

## 5.4 src/main.js File Reference

### Variables

- `import app pcss`
- `import App from App svelte`
- `const app`

### 5.4.1 Variable Documentation

#### 5.4.1.1 app

```
export default app
```

##### Initial value:

```
= new App({  
  target: document.body,  
  props: {  
    name: "world",  
  },  
})
```

#### 5.4.1.2 pcss

```
import app pcss
```

#### 5.4.1.3 svelte

```
import App from App svelte
```

## 5.5 js/preload.js File Reference

## 5.6 js/raspberry\_pi.js File Reference

### Functions

- function `unselectRaspberryPi` (\_event, \_args)
- function `selectRaspberryPi` (\_event, args)
- function `getRaspberryPiList` (\_event, \_args)
- function `getSelectedRaspberryPi` (\_event, \_args)
- ipcMain `handle` ('selectRaspberryPi', `selectRaspberryPi`)

## Variables

- `const { ipcMain } = require('electron')`

## 5.6.1 Function Documentation

### 5.6.1.1 getRaspberryPiList()

```
function getRaspberryPiList (
    _event,
    _args )
```

### 5.6.1.2 getSelectedRaspberryPi()

```
function getSelectedRaspberryPi (
    _event,
    _args )
```

### 5.6.1.3 handle()

```
ipcMain handle (
    'selectRaspberryPi' ,
    selectRaspberryPi )
```

### 5.6.1.4 selectRaspberryPi()

```
function selectRaspberryPi (
    _event,
    args )
```

### 5.6.1.5 unselectRaspberryPi()

```
function unselectRaspberryPi (
    _event,
    _args )
```

## 5.6.2 Variable Documentation

### 5.6.2.1 const

```
const { ipcMain } = require('electron')
```

## 5.7 js/store.js File Reference

## 5.8 js/websocket.js File Reference

### Classes

- class [Code](#)
- class [WebSocketServer](#)

### Functions

- function [getRandomInt](#) (min, max)

### Variables

- `const WebSocket` = require('ws')
- module `exports` = { websocket\_server: new [WebSocketServer](#)() }

## 5.8.1 Function Documentation

### 5.8.1.1 getRandomInt()

```
function getRandomInt (
    min,
    max )
```

#### Parameters

<code>{number}</code>	min
<code>{number}</code>	max

#### Returns

{number}

## 5.8.2 Variable Documentation

### 5.8.2.1 exports

```
module exports = { websocket_server: new WebSocketServer() }
```

### 5.8.2.2 WebSocket

```
const WebSocket = require('ws')
```

## 5.9 js/websocket\_events.js File Reference

### Functions

- function async [startWebSocketServer](#) (\_event, args)
- function [closeWebSocketServer](#) (\_event, \_args)
- function [getWebSocketServer](#) (\_event, \_args)
- ipcMain [handle](#) ('startWebSocketServer', startWebSocketServer)

### Variables

- [const](#) { ipcMain } = require('electron')
- [const](#) [tcpPortUsed](#) = require('tcp-port-used')

### 5.9.1 Function Documentation

#### 5.9.1.1 closeWebSocketServer()

```
function closeWebSocketServer (  
    _event,  
    _args )
```

### 5.9.1.2 getWebSocketServer()

```
function getWebSocketServer (
  _event,
  _args )
```

### 5.9.1.3 handle()

```
ipcMain handle (
  'startWebSocketServer' ,
  startWebSocketServer )
```

### 5.9.1.4 startWebSocketServer()

```
function async startWebSocketServer (
  _event,
  args )
```

## 5.9.2 Variable Documentation

### 5.9.2.1 const

```
const { ipcMain } = require('electron')
```

### 5.9.2.2 tcpPortUsed

```
const tcpPortUsed = require('tcp-port-used')
```

## 5.10 public/index.html File Reference

## 5.11 README.md File Reference

## 5.12 rollup.config.js File Reference

### Functions

- function `serve` ()

## Variables

- `import` svelte from rollup plugin `svelte`
- `import` commonjs from rollup plugin `commonjs`
- `import` resolve from rollup plugin node `resolve`
- `import` livereload from rollup plugin `livereload`
- `import` { terser } from 'rollup-plugin-terser'
- `import` css from rollup plugin css `only`
- `import` postcss from rollup plugin postcss `import` tailwindcss from `tailwindcss`
- `import` nodePolyfills from rollup plugin node `polyfills`
- `const` `tailwindConfig` = require('./tailwind.config.cjs')
- `const` `production` = !process.env.ROLLUP\_WATCH
- `export` `default`

## 5.12.1 Function Documentation

### 5.12.1.1 `serve()`

```
function serve ( )
```

## 5.12.2 Variable Documentation

### 5.12.2.1 `commonjs`

```
import commonjs from rollup plugin commonjs
```

### 5.12.2.2 `default`

```
export default
```

### 5.12.2.3 `import`

```
import { terser } from 'rollup-plugin-terser'
```



#### 5.12.2.4 livereload

```
import livereload from rollup plugin livereload
```

#### 5.12.2.5 only

```
import css from rollup plugin css only
```

#### 5.12.2.6 polyfills

```
import nodePolyfills from rollup plugin node polyfills
```

#### 5.12.2.7 production

```
const production = !process.env.ROLLUP_WATCH
```

#### 5.12.2.8 resolve

```
import resolve from rollup plugin node resolve
```

#### 5.12.2.9 svelte

```
import NotFound from routes NotFound svelte
```

#### 5.12.2.10 tailwindConfig

```
const tailwindConfig = require('./tailwind.config.cjs')
```

#### 5.12.2.11 tailwindcss

```
import postcss from rollup plugin postcss import tailwindcss from tailwindcss
```

## 5.13 src/App.svelte File Reference

## 5.14 src/lib/BehaviourTreeHandler.svelte File Reference

## 5.15 src/lib/CodeBox\_Constants.js File Reference

### Variables

- `import { hoverTooltip } from "@codemirror/view"`
- `export const range_0_180`
- `export const range_0_360`
- `export const range_0_100`
- `export const condition_operator_types`
- `const node_information_list`
- `export const node_hover`

### 5.15.1 Variable Documentation

#### 5.15.1.1 condition\_operator\_types

```
export const condition_operator_types
```

#### 5.15.1.2 import

```
import { hoverTooltip } from "@codemirror/view"
```

#### 5.15.1.3 node\_hover

```
export const node_hover
```

#### Initial value:

```
= hoverTooltip((view, pos, side) => {
  const { from, to, text } = view.state.doc.lineAt(pos);
  let start = pos,
      end = pos;
  while (start > from && /\w|:/.test(text[start - from - 1])) start--;
  while (end < to && /\w|:/.test(text[end - from])) end++;
  if ((start == pos && side < 0) || (end == pos && side > 0)) return null;
  const highlighted_node = text.slice(start - from, end - from);
  const node_information = node_information_list.get(highlighted_node);
  if (!node_information) return null;
  return {
    pos: start,
    end,
    above: true,
    create(_) {
      const dom = document.createElement("div");
      dom.textContent = node_information;
      return { dom };
    },
  };
});
```

#### 5.15.1.4 node\_information\_list

```
const node_information_list
```

##### Initial value:

```
= new Map([
  ["Root", "Start of every node tree"],
  ["Selector", "Runs children until one succeeds"],
  ["Sequence", "Runs children until one fails"],
  ["Random", "Runs a random child"],
  ["UseRoot", "Goes to the given root node id"],
  ["Invert", "Inverts the result of the child"],
  ["Repeat", "Repeats the child given the amount of times"],
  ["Fail", "Always fails"],
  ["Succeed", "Always succeeds"],
  ["Blackboard:ChangeInteger", "Changes the integer value of the blackboard"],
  ["Blackboard:IntegerCondition", "Checks the integer value of the blackboard"],
  ["Action:PauseExecution", "Pauses the execution for the given amount of time"],
  ["Action:Print", "Prints the given message"],
  ["Action:Drive", "Set the speed and direction of the car"],
  ["Action:Turn", "Turns the car by the given angle"],
  ["Action:SetAngle", "Turns the car by the given angle"],
  ["Action:SetSpeed", "Moves the car by the given speed"],
  ["Action:SetWheelDirection", "Sets the direction of the car"],
  ["Condition:SucceedOnAverageNearbyScan", "Checks the average distance between two angles and succeeds if
    the average is below the specified cm"],
  ["Condition:SucceedOnAnyNearbyScan", "Checks the distance of all nearby points and succeeds if any is
    below the specified cm"],
  ["Condition:SucceedOnAverageColour", "Checks the average colour of the camera and succeeds if the colour
    is within the tolerance"],
])
```

```
@type {Map<string, string>}
```

#### 5.15.1.5 range\_0\_100

```
export const range_0_100
```

#### 5.15.1.6 range\_0\_180

```
export const range_0_180
```

#### 5.15.1.7 range\_0\_360

```
export const range_0_360
```

## 5.16 [src/lib/home/CodeBox.svelte](#) File Reference

## 5.17 [src/lib/validate/CodeBox.svelte](#) File Reference

## 5.18 [src/lib/home/CodeMessagingBar.svelte](#) File Reference

## 5.19 [src/lib/home/Stream.svelte](#) File Reference

## 5.20 [src/lib/IPList.svelte](#) File Reference

## 5.21 [src/lib/NavigationBar.svelte](#) File Reference

## 5.22 [src/lib/RaspberryPiConnectBanner.svelte](#) File Reference

## 5.23 [src/lib/RaspberryPiSelector.svelte](#) File Reference

## 5.24 [src/lib/SaveBehaviourTreeModal.svelte](#) File Reference

## 5.25 [src/lib/validate/CodeButton.svelte](#) File Reference

## 5.26 [src/lib/WebsocketServerConfig.svelte](#) File Reference

## 5.27 [src/routes.js](#) File Reference

### Variables

- [import](#) Home from routes Home [svelte](#)
- [export](#) [default](#)

### 5.27.1 Variable Documentation

#### 5.27.1.1 [default](#)

```
export default
```

#### Initial value:

```
{  
  '/*': Home,  
  '/websocket': Websocket,  
  '/validate': Validate,  
  '*/': NotFound  
}
```

### 5.27.1.2 svelte

```
import NotFound from routes NotFound svelte
```

## 5.28 src/routes/Home.svelte File Reference

## 5.29 src/routes/NotFound.svelte File Reference

## 5.30 src/routes/Validate.svelte File Reference

## 5.31 src/routes/Websocket.svelte File Reference

## 5.32 src/store/behaviour\_tree\_store.js File Reference

### Functions

- function async `main` ()

### Variables

- `import { writable } from 'svelte/store'`
- `export const behaviour_tree_xml_code = writable('')`
- `export const show_behaviour_tree_save_modal = writable(false)`
- `export const behaviour_tree_save_modal_code = writable('')`
- `export let behaviour_tree_list = writable([])`

### 5.32.1 Function Documentation

#### 5.32.1.1 main()

```
main ( )
```

### 5.32.2 Variable Documentation

#### 5.32.2.1 behaviour\_tree\_list

```
export let behaviour_tree_list = writable([])
```

#### 5.32.2.2 behaviour\_tree\_save\_modal\_code

```
export const behaviour_tree_save_modal_code = writable("")
```

#### 5.32.2.3 behaviour\_tree\_xml\_code

```
export const behaviour_tree_xml_code = writable("")
```

#### 5.32.2.4 import

```
import { writable } from 'svelte/store'
```

#### 5.32.2.5 show\_behaviour\_tree\_save\_modal

```
export const show_behaviour_tree_save_modal = writable(false)
```

### 5.33 src/store/home\_store.js File Reference

#### Variables

- `import { writable } from 'svelte/store'`
- `export const main_pane_size_0_store = writable(80)`
- `export const main_pane_size_1_store = writable(20)`
- `export const side_pane_size_0_store = writable(83)`
- `export const side_pane_size_1_store = writable(17)`
- `export const lidar_toggle = writable(true)`

#### 5.33.1 Variable Documentation

### 5.33.1.1 import

```
import { writable } from 'svelte/store'
```

### 5.33.1.2 lidar\_toggle

```
export const lidar_toggle = writable(true)
```

### 5.33.1.3 main\_pane\_size\_0\_store

```
export const main_pane_size_0_store = writable(80)
```

### 5.33.1.4 main\_pane\_size\_1\_store

```
export const main_pane_size_1_store = writable(20)
```

### 5.33.1.5 side\_pane\_size\_0\_store

```
export const side_pane_size_0_store = writable(83)
```

### 5.33.1.6 side\_pane\_size\_1\_store

```
export const side_pane_size_1_store = writable(17)
```

## 5.34 src/store/raspberry\_pi\_store.js File Reference

### Functions

- function async [main](#) ()
- window api [onConnection](#) ((value)=> { value=JSON.parse(value);console.log(value);raspberrypi\_uuid↔list.update((list)=> { list.push(value.uuid);return list;});})
- window api [onDisconnection](#) ((value)=> { value=JSON.parse(value);console.log(value);raspberrypi\_uuid↔\_list.update((list)=> { list=list.filter((uuid)=> uuid !==value.uuid);return list;});})

## Variables

- `import { writable } from 'svelte/store'`
- `export const raspberry_pi_uuid_list = writable([])`
- `export const selected_raspberry_pi_uuid = writable("")`

### 5.34.1 Function Documentation

#### 5.34.1.1 main()

```
function async main ( )
```

#### 5.34.1.2 onConnection()

```
window api onConnection (
    (value) ,
    { value=JSON.parse(value);console.log(value);raspberry_pi_uuid_list.update((list)=>
{ list.push(value.uuid);return list;});} )
```

#### 5.34.1.3 onDisconnection()

```
window api onDisconnection (
    (value) ,
    { value=JSON.parse(value);console.log(value);raspberry_pi_uuid_list.update((list)=>
{ list=list.filter((uuid)=> uuid !==value.uuid);return list;});} )
```

### 5.34.2 Variable Documentation

#### 5.34.2.1 import

```
import { writable } from 'svelte/store'
```

#### 5.34.2.2 raspberry\_pi\_uuid\_list

```
export const raspberry_pi_uuid_list = writable([])
```



### 5.34.2.3 selected\_raspberry\_pi\_uuid

```
export const selected_raspberry_pi_uuid = writable("")
```

## 5.35 src/store/websocket\_store.js File Reference

### Functions

- function async [main](#) ()
- window api [onMessage](#) ((value)=> { value=JSON.parse(value);lidar\_stream.set(value.lidar);camera\_↵stream.set(value.frame\_buffer);})

### Variables

- [import](#) { writable } from 'svelte/store'
- export const [websocket\\_server\\_connection\\_state](#) = writable(false)
- export const [websocket\\_server\\_port](#) = writable(3000)
- export const [websocket\\_server\\_code](#) = writable(-1)
- export const [lidar\\_stream](#) = writable([])
- export const [camera\\_stream](#) = writable("")

### 5.35.1 Function Documentation

#### 5.35.1.1 main()

```
function async main ( )
```

#### 5.35.1.2 onMessage()

```
window api onMessage (
    (value) ,
    { value=JSON.parse(value);lidar_stream.set(value.lidar);camera_stream.set(value.↵
frame_buffer);} )
```

### 5.35.2 Variable Documentation

#### 5.35.2.1 camera\_stream

```
export const camera_stream = writable("")
```

#### 5.35.2.2 import

```
import { writable } from 'svelte/store'
```

#### 5.35.2.3 lidar\_stream

```
export const lidar_stream = writable([])
```

#### 5.35.2.4 websocket\_server\_code

```
export const websocket_server_code = writable(-1)
```

#### 5.35.2.5 websocket\_server\_connection\_state

```
export const websocket_server_connection_state = writable(false)
```

#### 5.35.2.6 websocket\_server\_port

```
export const websocket_server_port = writable(3000)
```

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