

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:

Code	7
WebSocketServer	8

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

rollup.config.js	23
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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 README.md File Reference

5.11 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`

5.11.1 Function Documentation

5.11.1.1 `serve()`

```
function serve ( )
```

5.11.2 Variable Documentation

5.11.2.1 `commonjs`

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

5.11.2.2 `default`

```
export default
```

5.11.2.3 `import`

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


5.11.2.4 livereload

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

5.11.2.5 only

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

5.11.2.6 polyfills

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

5.11.2.7 production

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

5.11.2.8 resolve

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

5.11.2.9 svelte

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

5.11.2.10 tailwindConfig

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

5.11.2.11 tailwindcss

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

5.12 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`

5.12.1 Variable Documentation

5.12.1.1 condition_operator_types

```
export const condition_operator_types
```

5.12.1.2 import

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

5.12.1.3 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 };
    },
  };
});
```

5.12.1.4 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>}
```

5.12.1.5 range_0_100

```
export const range_0_100
```

5.12.1.6 range_0_180

```
export const range_0_180
```

5.12.1.7 range_0_360

```
export const range_0_360
```

5.13 src/routes.js File Reference

Variables

- `import` Home from routes Home `svelte`
- `export default`

5.13.1 Variable Documentation

5.13.1.1 default

```
export default
```

Initial value:

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

5.13.1.2 svelte

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

5.14 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([])

5.14.1 Function Documentation

5.14.1.1 main()

```
main ( )
```

5.14.2 Variable Documentation

5.14.2.1 behaviour_tree_list

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

5.14.2.2 behaviour_tree_save_modal_code

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

5.14.2.3 behaviour_tree_xml_code

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

5.14.2.4 import

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

5.14.2.5 show_behaviour_tree_save_modal

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

5.15 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)`

5.15.1 Variable Documentation

5.15.1.1 import

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

5.15.1.2 lidar_toggle

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

5.15.1.3 main_pane_size_0_store

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

5.15.1.4 main_pane_size_1_store

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

5.15.1.5 side_pane_size_0_store

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

5.15.1.6 side_pane_size_1_store

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

5.16 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("")`

5.16.1 Function Documentation

5.16.1.1 main()

```
function async main ( )
```

5.16.1.2 onConnection()

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

5.16.1.3 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;});} )
```

5.16.2 Variable Documentation

5.16.2.1 import

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

5.16.2.2 raspberry_pi_uuid_list

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

5.16.2.3 selected_raspberry_pi_uuid

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

5.17 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("")

5.17.1 Function Documentation

5.17.1.1 main()

```
function async main ( )
```

5.17.1.2 onMessage()

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

5.17.2 Variable Documentation

5.17.2.1 camera_stream

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

5.17.2.2 import

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

5.17.2.3 lidar_stream

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

5.17.2.4 websocket_server_code

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

5.17.2.5 websocket_server_connection_state

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

5.17.2.6 websocket_server_port

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


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