JOY-PI NOTE

3-in-1 solution: notebook, learning platform and experiment center

TABLE OF CONTENTS

1. GENERAL INFORMATION

Dear Customer,
thank you for choosing our product. In the following, we will show you what to consider during commissioning and use.

Should you encounter any unexpected problems during use, please feel free to contact us.

2. REQUIREMENTS

For the operation of the Joy-Pi Note we recommend the use of a Raspberry Pi 4 with 4GB RAM or more. This is the only way the proper operation, especially the use of Scratch applications, can be guaranteed.

The Joy-Pi Note can be operated either via the included 12 V power supply or alternatively via the 5 V USB port.

3. OVERVIEW
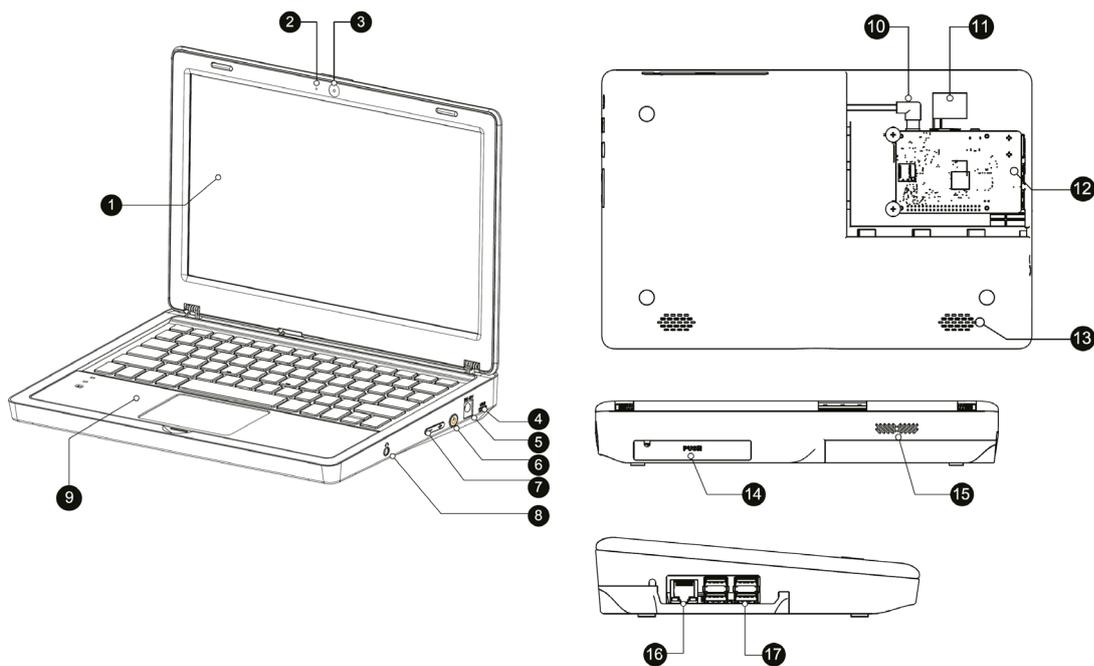
1. 11.6" IPS Full-HD Screen

2. Microphone

3. 2MP Camera

4. 5V USB Power supply connection

5. DC 12V Power supply connection

6. Power button

7. Volume & brightness control

8. 3.5mm Headphone jack

9. Detachable, wireless keyboard

10. Raspberry Pi power supply

11. HDMI

12. Raspberry Pi mounting tray

13. Speaker

14. Storage tray

15. Ventilation opening

16. Network connection (Raspberry Pi)

17. USB-Connection (Raspberry Pi)

Notice: When using the Joy-Pi Note, you may want to use the GPIO connections of the Raspberry Pi, independent of the sensors and modules connected via the Joy-Pi Note.

For this case, the connection between the modules and the Raspberry Pi can be disconnected via a switch.
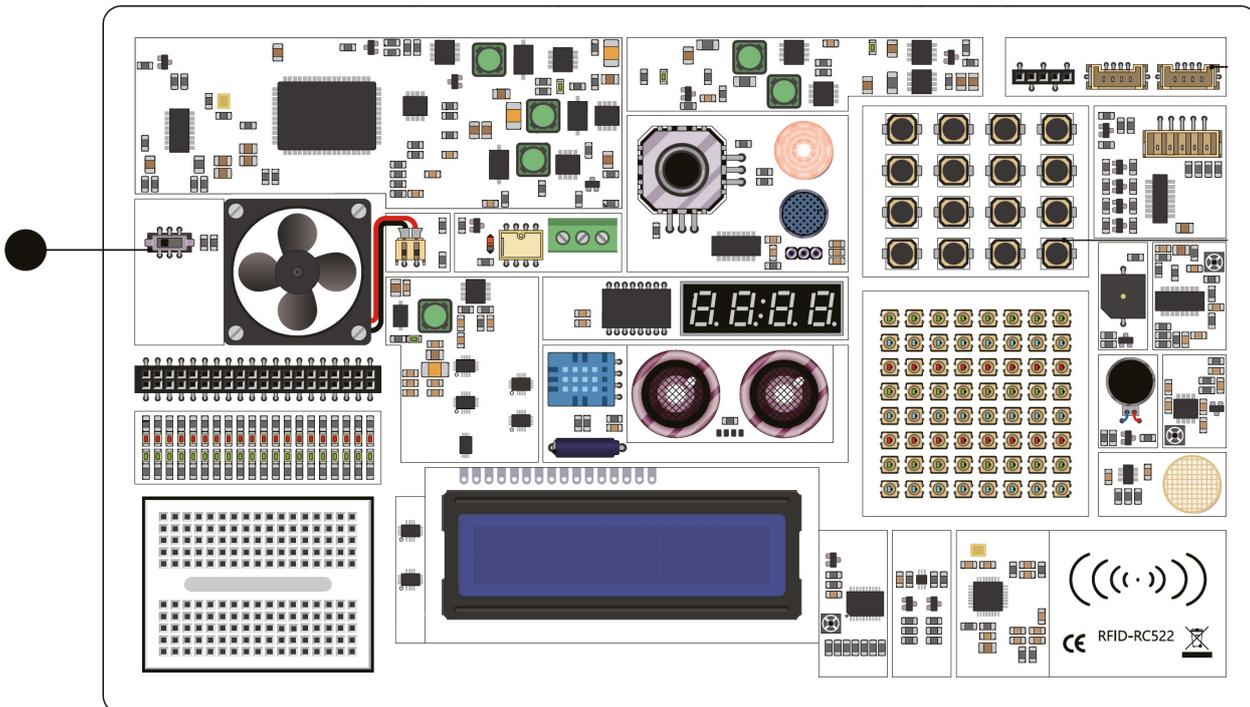
4. POWER SUPPLY

Your Joy-Pi Note can be powered either via the included 12 V power supply or alternatively via the 5 V USB port (e.g. with a powerbank).
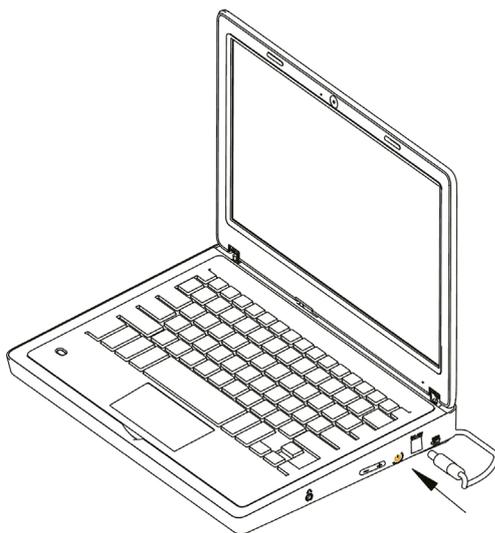
⚠️ **WARNING:** The 5V micro USB port is only suitable for operating the Joy-Pi Note with a powerbank. It is **not suitable** for charging a powerbank. **Do not** connect the 12V power plug and a powerbank at the same time **under any circumstances**!

5. MOUNTING THE RASPBERRY PI

1. Insert the included SD card into the SD card slot of your Raspberry Pi.
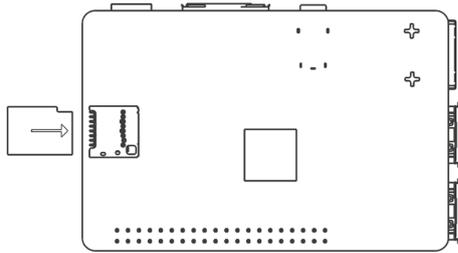
2. Open the Raspberry Pi mounting compartment on the back of your Joy-Pi Note by sliding the cover to the right.
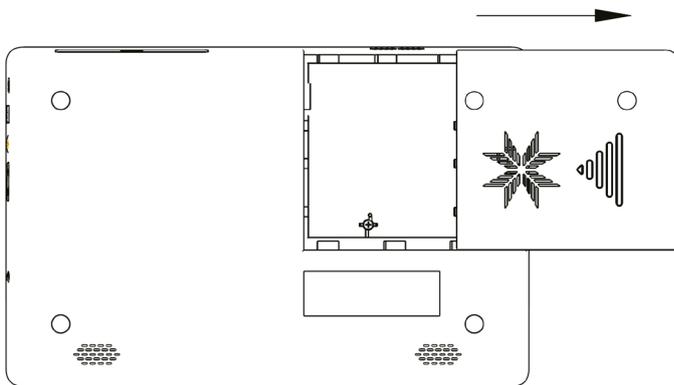
3. Insert the Raspberry Pi into the mounting tray. Then insert the screws to secure your Raspberry Pi.
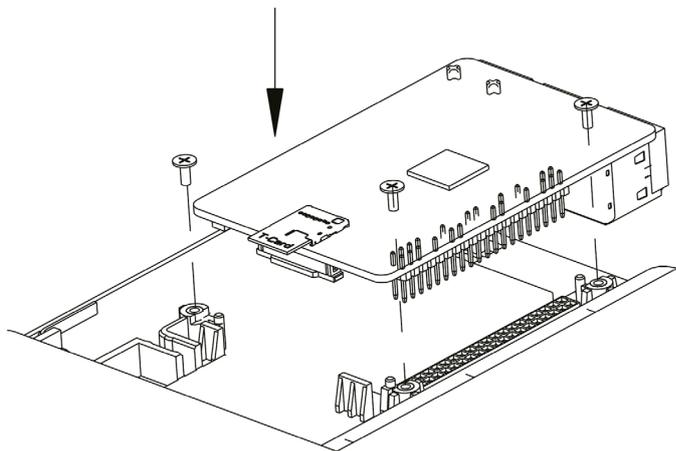
4. Connect the micro-HDMI adapter board to the HDMI port of your Raspberry Pi.
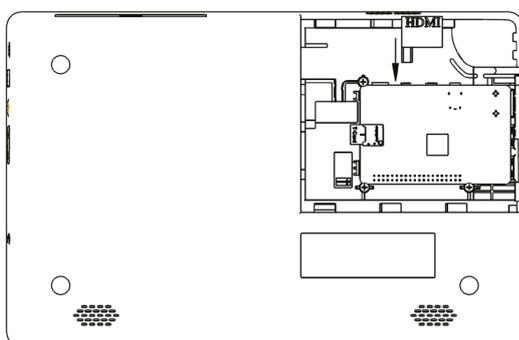
5. Connect the USB-C power cable to your Raspberry Pi. Insert the other end into the two-pin connector of your Joy-Pi Note.
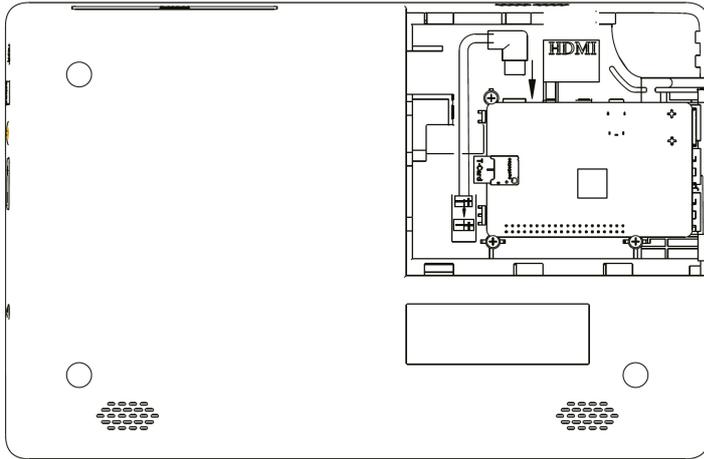
6. Then take the USB camera cable and connect it to one of the USB ports of your Raspberry Pi.
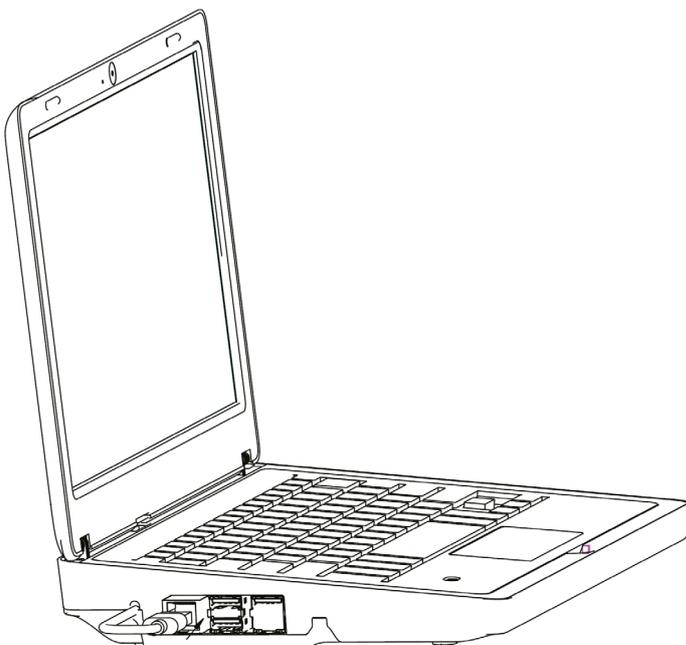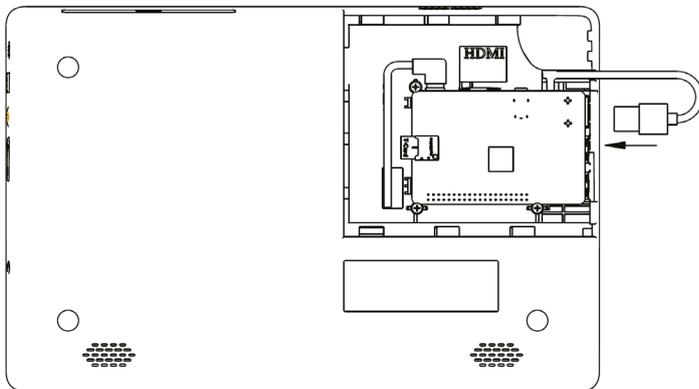
7. Close the cover.
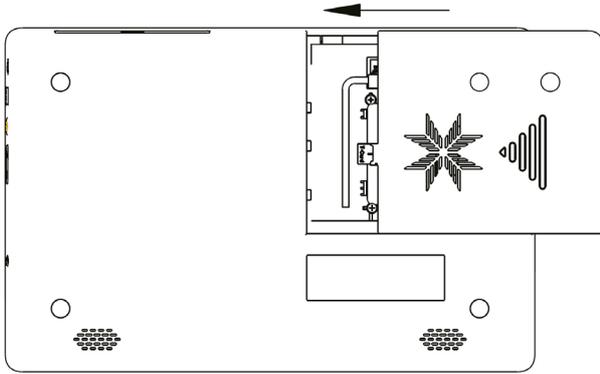
8. Take the included 12V power supply and connect it to the power connector of your Raspberry Pi.
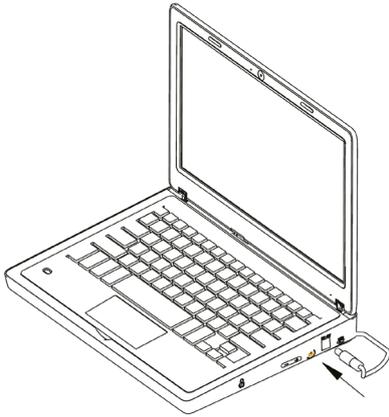
9. Remove the receiver from the storage compartment of the wireless mouse.
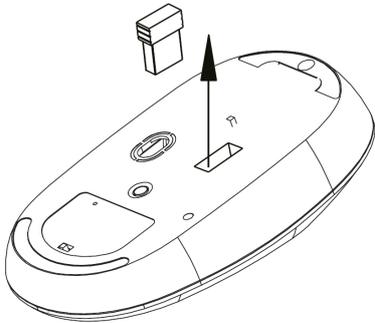
10. Then insert the receiver into one of the USB ports of your Raspberry Pi.
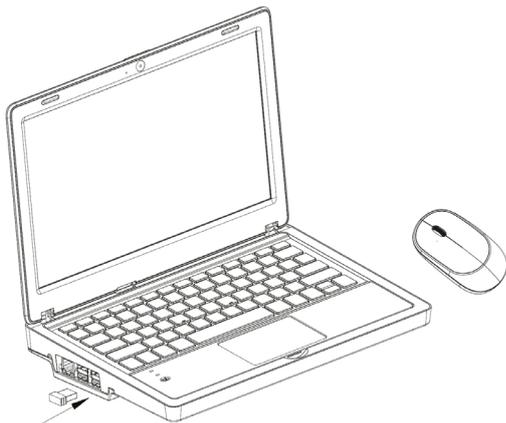
11. Now set the switch of the wireless mouse and battery to ON.

Tip: If the keyboard's power LED starts blinking, the battery level is low. Simply connect a microUSB cable to the keyboard to recharge the battery.
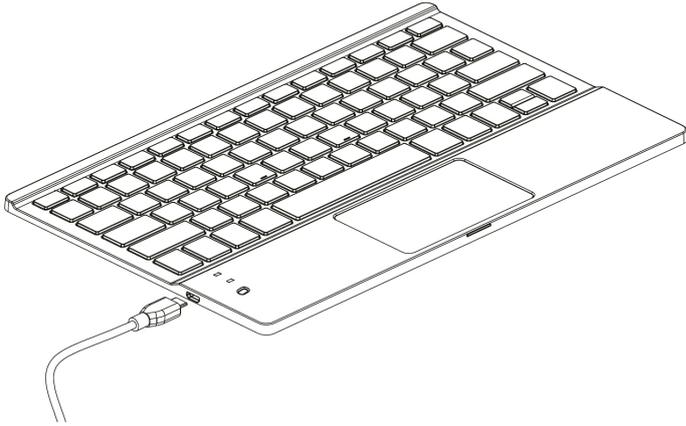
12. Your Joy-Pi Note has a storage compartment on the back. You can open the compartment by pressing it lightly. Use it for a powerbank or to store your electronic components.

After starting your Joy-Pi Note, the learning center opens automatically.

NOTICE: The microSD card that comes with your Joy-Pi Note already has our learning software preinstalled in German. If you need or prefer the software in English, it must first be installed on the microSD card. More information about the software installation can be found in Chapter 6 - Reinstalling the learning software.

After starting the learning center, you have the choice between the following programs:

Hauptmenü der Lernsoftware

LEARNING
Learn the basics of Python and Scratch programming. With the help of a progress-based system, all the functions of the Joy-Pi Note will be explained to you step by step.

PROJECTS
For a quick start and an overview of the functions of your Joy-Pi Note, a total of 18 projects are available here.

PYTHON
Starts the Python development environment.

ARDUINO
Starts the Arduino development environment.

MICRO:BIT
Starts the Micro:Bit development environment.

SCRATCH
Starts the Scratch development environment.

6.1. PROJECTS

The projects offer you an ideal start to get a first overview of your Joy-Pi Note and the sensors and modules installed on it. You need neither experience nor programming knowledge. The individual projects can be easily started, executed and discovered without any effort.
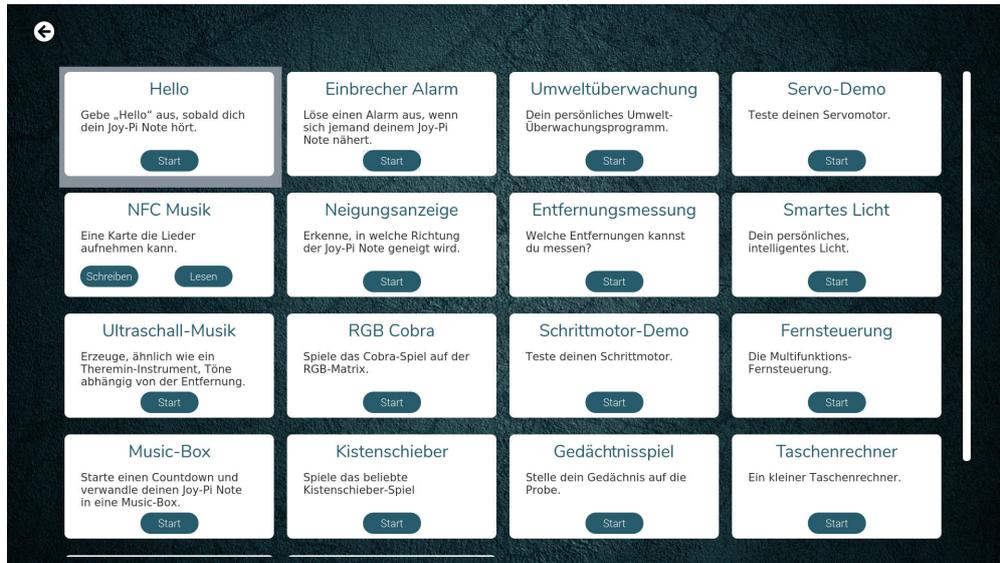
Project overview

Simply start a project of your choice by pressing the **Start** button. The project will open automatically.

Notice: The "NFC Music" project consists of two parts that open separately. First start the first part with the "Write" button and then the second part with the "Read" button.
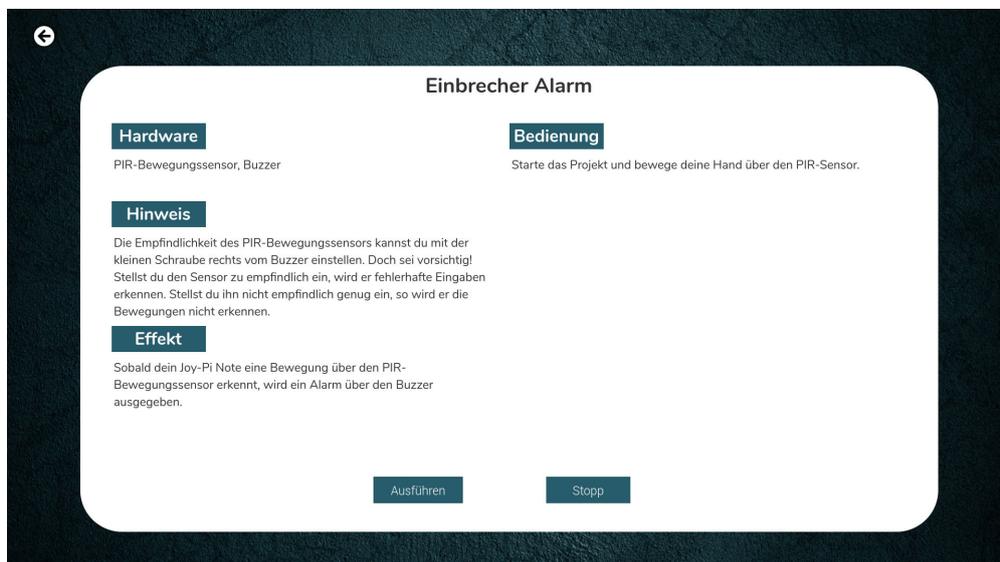
Single project

After starting a project, the summary is displayed. Here you will learn which sensors and modules are used by the project, what there is to consider, what the project triggers and how you can operate it.

Simply start the project with the "Run" button. You can stop the project by using the arrow in the upper left corner to return to the project overview, or by pressing the "Stop" button.

6.2 LEARNING

After you have opened the learning area, you will first be taken to a login section. User accounts are used to register your personal learning progress with the Joy-Pi Note. This way, individual progress can be recorded and continuously improved, even for multiple users.
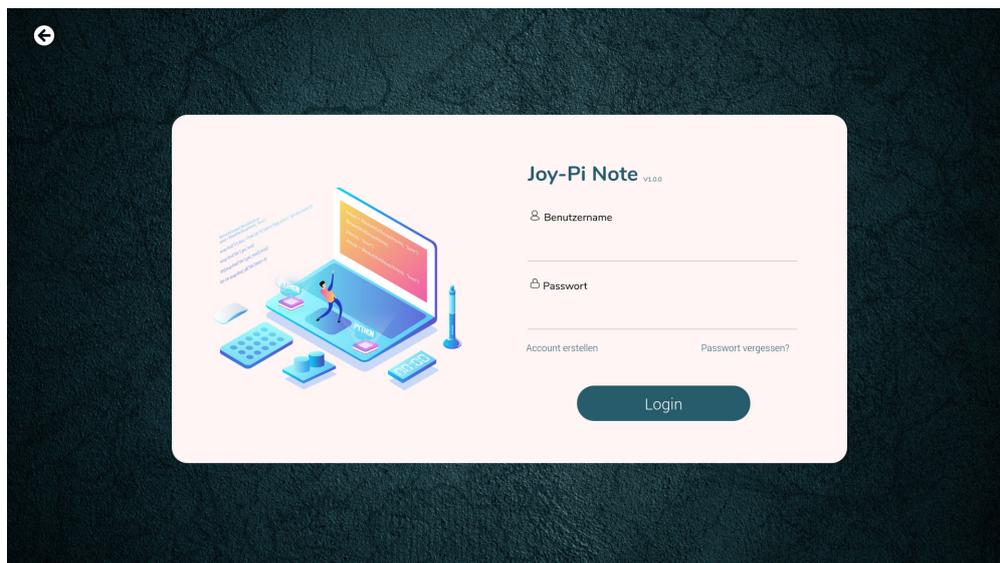
User login

To enter the learning area, first log in with your user data. If you have not yet created your own user, you can do so by clicking the "**Create account**" button. Just follow the wizard and complete your registration. All you have to do is enter a login name and a password with at least six digits.

After you have logged in, you can choose between two programming languages: *Python* and *Scratch*.

Programming language selection

Python is a programming language that is comparatively easy to learn. In a total of 30 lessons, you will not only learn the basics of the language, but also how to directly control the sensors of your Joy-Pi Note.

Scratch is, in contrast to Python, a block-oriented programming language, which is primarily aimed at children and young people. With the help of graphical blocks, applications can be created that teach the basics and logic of programming. In a total of 16 lessons, you will not only learn this playfully, but also the simplified control of the sensors of your Joy-Pi Note.

6.2.1 PYTHON

As soon as you start the Python section, the lesson overview opens. Here you will find, in the left area, all 30 Python lessons including your learning progress, as well as, in the right area, the board of your Joy-Pi Note. As soon as you move the mouse over the individual components of the board, additional short information about the corresponding part is displayed.
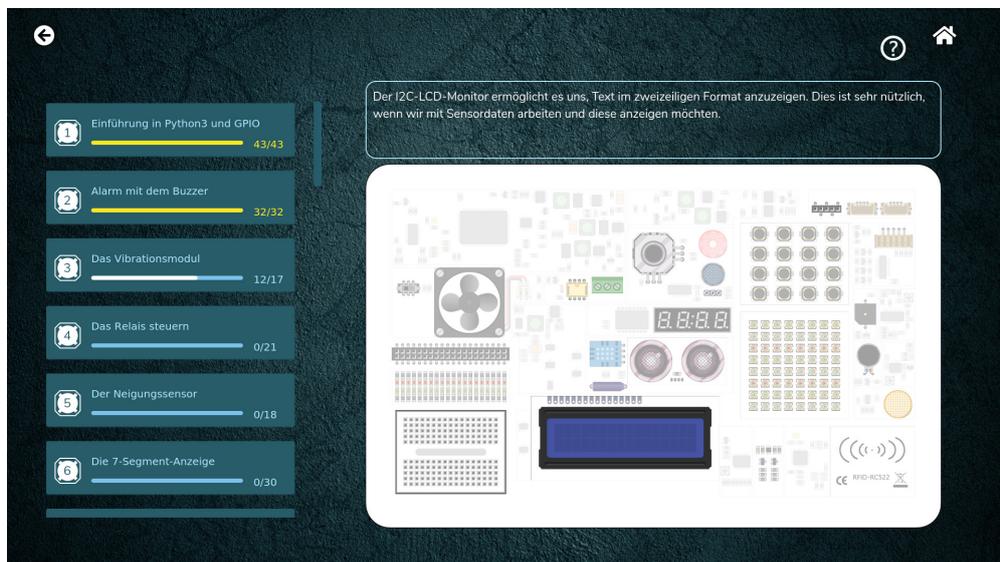
Python Lesson Overview

Start your first Python lesson simply by clicking on the corresponding lesson on the left.
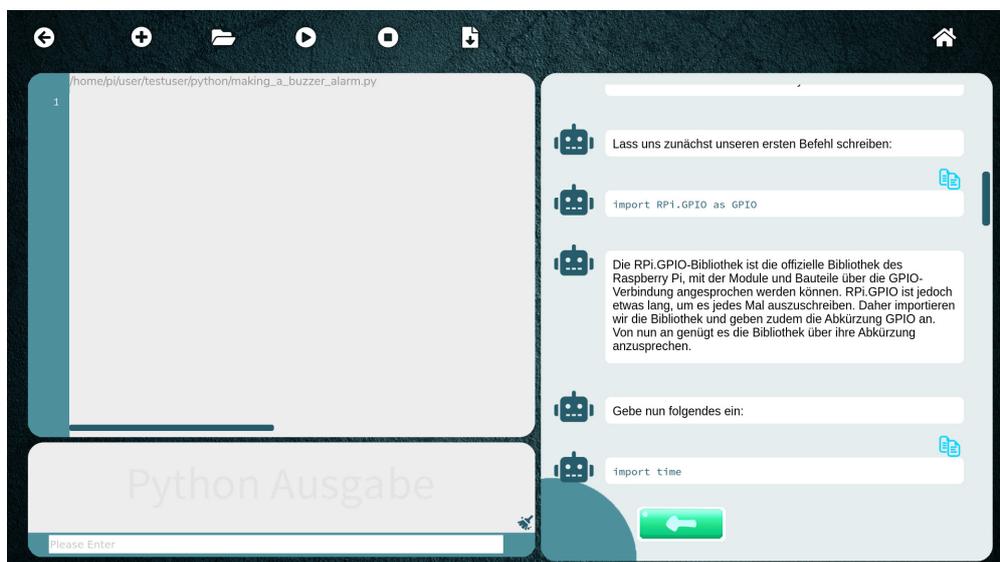
Python single lesson

Again, the window is divided into two areas. In the left section you will find everything you need for Python execution. Just enter your Python code into the large input field. With the control elements in the upper area you can save, execute and stop your code. All output of your Python program is shown in the small "Python output" field. Inputs can be made with the text field below.

In the right area, the corresponding lesson is shown step by step. With the arrows in the lower part of the screen, you can work your way through. Don't worry! Your progress is saved, so you can take a break at any time.

6.2.2 SCRATCH

After you have started the Scratch area, the Scratch development environment opens automatically, as well as the corresponding lesson overview.
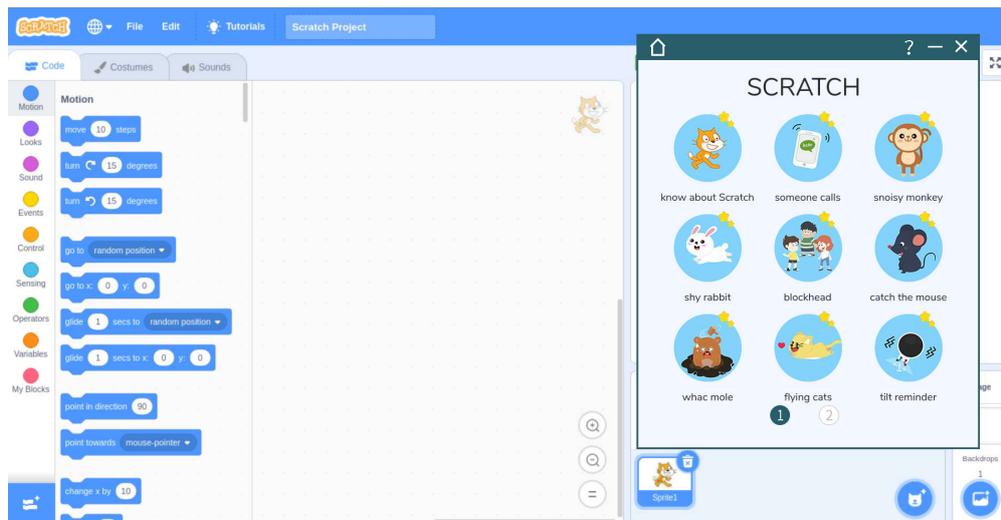
Scratch Lesson Overview

Just start here with the first lesson by clicking on the lesson image. After you have completed one lesson, the next one will be unlocked automatically. Here, too, each lesson is explained step by step and brought closer to you in the individual lessons. You can use the arrows at the bottom to make your progress, just like with the Python lessons.
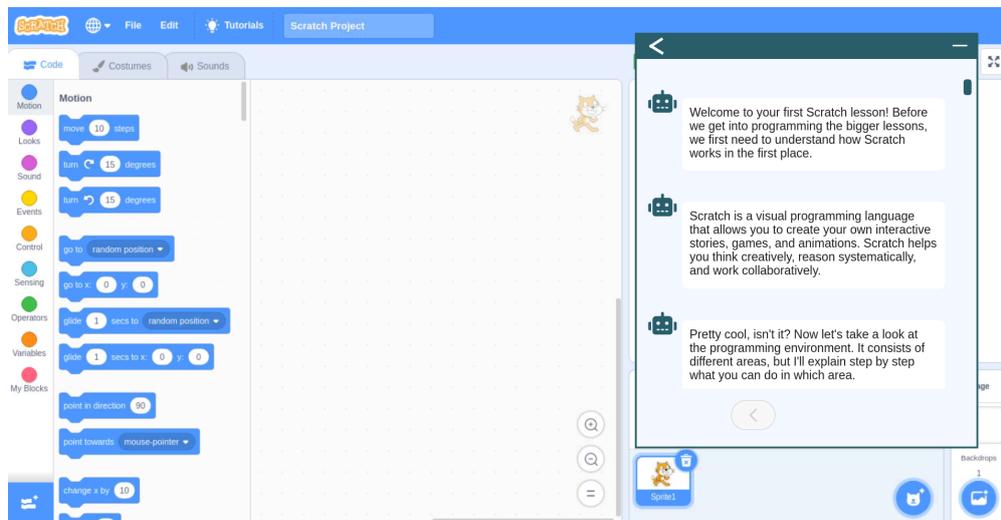
Scratch single lesson

To return to the menu of your Joy-Pi Note, simply return to the lesson overview by clicking on the arrow in the upper left corner. From there, you can access the menu with the house icon.
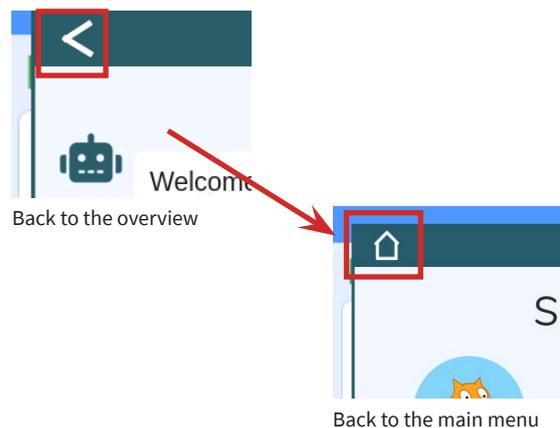
Back to the overview

Back to the main menu

7. REINSTALLATION OF THE LEARNING SOFTWARE

If you want to reinstall the learning software, for example because you want to use a new microSD card or change the language, then this is of course no problem. The latest version of the Joy-Pi Note software can always be found on the **Joy-Pi website**.

Simply download the software in your desired language and unpack the ZIP archive. You can then write the IMG file contained therein to your microSD card with a program such as **BalenaEtcher**:
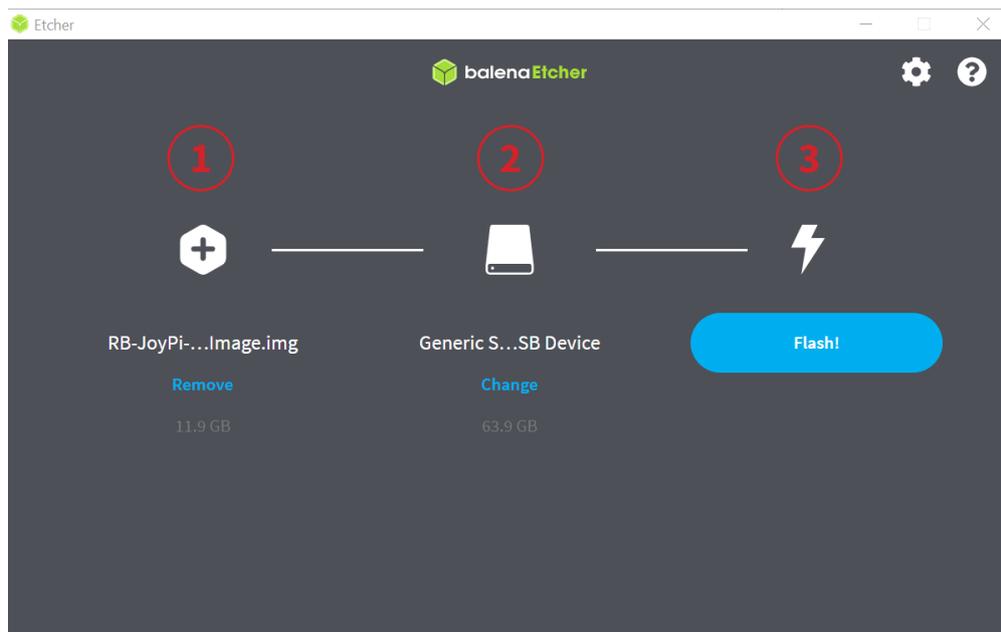
BalenaEtcher-Software

First select the IMG file and the microSD card to be written. After that, you can start the write process with **Flash!** Once the process is complete, you can insert the microSD card into the Raspberry Pi of your Joy-Pi Note and get started.

8. CONTROL OF SENSORS & MODULES

In addition to the projects and learning lessons, you can of course also realize your own projects with your Joy-Pi Note. To make your work and overview easier, we have created an overview for you below, in which you can see how to control the individual modules of your Joy-Pi Note.

MODULE	CONNECTION
DHT11 sensor	GPIO4
RGB-Matrix	GPIO12
Touch sensor	GPIO17
Buzzer	GPIO18
Servo motor	GPIO19
Infrared	GPIO20
Relay	GPIO21
Tilt sensor	GPIO22
PIR sensor	GPIO23
Sound sensor	GPIO24
Vibration motor	GPIO27
Stepper motor	Step 1 - GPIO5 Step 2 - GPIO6 Step 3 - GPIO13 Step 4 - GPIO25
Ultrasonic sensor	Trigger - GPIO16 Echo - GPIO26
Light sensor	0x5C
16x2 LCD display	0x21
7-segment display	0x70
RFID Module	CE0
Joystick	CE1

9. INFORMATION & TAKE-BACK OBLIGATIONS

Our information and take-back obligations under the Electrical and Electronic Equipment Act (ElektroG)

Symbol on electrical and electronic equipment:
This crossed-out trash can means that electrical and electronic equipment does not belong in the household trash. You must hand in the old equipment at a collection point. Before handing in, you must separate used batteries and accumulators that are not enclosed in the old device from the old device.

Return options:
As an end user, when you purchase a new appliance, you can return your old appliance (which performs essentially the same function as the new one purchased from us) for disposal free of charge. Small appliances with no external dimensions larger than 25 cm can be returned in normal household quantities, regardless of the purchase of a new appliance.

Possibility return to our company location during opening hours:
SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

Possibility return in your area:
We will send you a parcel stamp with which you can return the device to us free of charge. To do this, please contact us by e-mail at Service@joy-it.net or by phone.

Packaging information:
Please pack your old device securely for transport. If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

10. SUPPORT

We are also there for you after the purchase. If any questions remain or problems arise, we are also available to assist you via email, phone and ticket support system.

E-Mail: service@joy-it.net
Ticket-System: http://support.joy-it.net
Phone: +49 (0)2845 98469 – 66 (10 - 17 Uhr)

For more information visit our website:
www.joy-it.net