



8Lab Solutions - Project "Soldino"

User manual

Version	1.0.0
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Description

User manual made by *8Labs Solutions* for the project *Soldino*.

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Changelog

Version	Date	Name	Role	Description
1.0.0	2019-03-30	PLACEHOLDER	Project Manager	Approval
0.2.0	2019-03-27	PLACEHOLDER	Verifier	Verification
0.1.2	2019-03-25	PLACEHOLDER	RUOLO	Written §5.3, §5.4 and §6
0.1.2	2019-03-25	PLACEHOLDER	RUOLO	Written §4.4 and §4.5
0.1.1	2019-03-24	PLACEHOLDER	RUOLO	Written §3.3 and §4.3
0.1.0	2019-03-22	PLACEHOLDER	Verifier	Verification
0.0.4	2019-03-21	PLACEHOLDER	RUOLO	Written §3.2, §4.2 and §5.2
0.0.3	2019-03-21	PLACEHOLDER	RUOLO	Written §3.1, §4.1 and §5.1
0.0.2	2019-03-20	PLACEHOLDER	RUOLO	Written §1 and §2
0.0.1	2019-03-20	Federico Biciato	RUOLO	Created document's structure.

Contents

1	Introduction	5
1.1	What is <i>Soldino</i>	5
1.2	Glossary	5
1.3	Requirements	5
2	MetaMask	6
2.1	What is MetaMask	6
2.2	Installation	6
2.3	Configuration	6
2.4	Transactions	7
3	Citizens	9
3.1	Registration	9
3.1.1	Citizen already registered	10
3.2	Login	10
3.2.1	Account is disabled	11
3.3	Logout	11
3.4	Buying	11
3.4.1	Searching	11
3.4.2	Cart	11
3.4.3	Checkout	12
3.4.4	Past orders	13
4	Businesses	15
4.1	Registration	15
4.1.1	Business is already registered	16
4.2	Login	16
4.2.1	Account is disabled	17
4.3	Logout	17
4.4	Buying	17
4.4.1	Searching	17
4.4.2	Cart	17
4.4.3	Checkout	18
4.4.4	Past orders	19
4.5	Selling	20
4.5.1	Selling a new product	21
4.5.2	Modifying a product	21
4.5.3	Removing a product	22
4.6	VAT management	22
4.6.1	Paying VAT	25
4.6.1.1	Instant payment	25
4.6.1.2	Deferred payment	25
4.6.2	Checking past trimesters' VAT	25

5	Government	26
5.1	Registration	26
5.2	Login	26
5.3	Logout	26
5.4	Cubit	26
5.4.1	Minting	26
5.4.2	Distributing	26
5.5	Managing users	26
5.5.1	Activating users	26
5.5.2	Deactivating users	27
5.6	Reimbursing businesses	27
6	Issues	28
A	Glossary	29
C	. . . . .	29
D	. . . . .	29
E	. . . . .	29
M	. . . . .	29
E	. . . . .	29
V	. . . . .	30

List of Figures

2.2.1	MetaMask's icon	6
2.2.2	Introduction to MetaMask	6
2.3.1	MetaMask setup	7
2.4.1	Example of a MetaMask transaction	8
3.1.1	Select "Citizen" from the slider	9
3.1.2	Citizen signup form	9
3.1.3	Connecting MetaMask to <i>Soldino</i>	10
3.1.4	Registration completed message	10
3.3.1	Logging out	11
3.4.1	Adding a product to your cart	11
3.4.2	Icon to access your cart	12
3.4.3	Example of a cart's content	12
3.4.4	Example of a checkout page	13
3.4.5	Example of past orders	14
4.1.1	Select "Business" from the slider	15
4.1.2	Business signup form	15
4.1.3	Connecting MetaMask to <i>Soldino</i>	16
4.1.4	Registration completed message	16
4.3.1	Logging out	17
4.4.1	Adding a product to your cart	17
4.4.2	Icon to access your cart	18
4.4.3	Example of a cart's content	18
4.4.4	Example of a checkout page	19
4.4.5	Example of past orders	20
4.5.1	Products Manager page	20
4.5.2	Adding a new product	21
4.5.3	Editing the informations of a product	22
4.6.1	Example of past invoices	23
4.6.2	Example of a negative VAT status	23
4.6.3	Example of a positive VAT status	23
4.6.4	Example of an invoice	24
4.6.5	Paying off a negative Vat status	25
4.6.6	Past trimesters	25
5.3.1	Logging out	26

1 Introduction

This document is the user manual of *Soldino*, a project by *8Lab Solutions* based on the Ethereum infrastructure.

1.1 What is *Soldino*

Soldino is a platform that allows users to buy goods and services, allows business to manage the VATs related to those products and allows the Government to mint and distribute Cubits_G and reimburse businesses of their VAT credit. More precisely:

- citizens can:
 - buy goods and services;
- business can:
 - sell goods and services;
 - buy goods and services;
 - manage VAT;
- Government can:
 - mint Cubits_G;
 - distribute Cubits_G;
 - activate disabled users;
 - deactivate active users;
 - reimburse businesses of their VAT credit;

1.2 Glossary

At the end of this document you can find appendix A where you can find the definitions of words that may be ambiguous or new to the users of *Soldino* have a subscript *G* (e.g. example_G).

1.3 Requirements

To be able to use *Soldino* you need to have the desktop version one of the following browsers:

- Google Chrome version 71 or newer;
- Mozilla Firefox version 64 or newer.

You also have to install the MetaMask_G plug-in in your browser. More information will follow.

2 MetaMask

2.1 What is MetaMask

MetaMask_G is a browser extension that manages your Ethereum_G digital wallet_G and allows you to send and receive Ethers_G (Cubits_G or CCs in *Soldino*). This plug-in is necessary to perform all the basic in this platform such as login and transactions.

2.2 Installation

After entering *Soldino*'s homepage check if you have MetaMask_G , installed. You can check this by looking for its icon on the top right of your browser

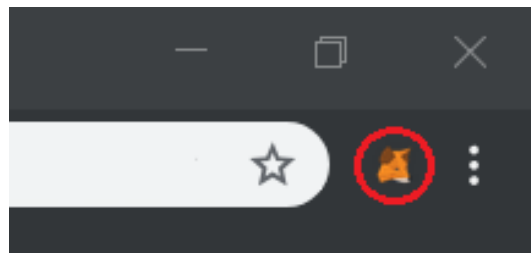


Figure 2.2.1: MetaMask's icon

If you have it proceed with the configuration of your account. Otherwise, watch the video introduction, click the link under the video and follow the instructions to download it.

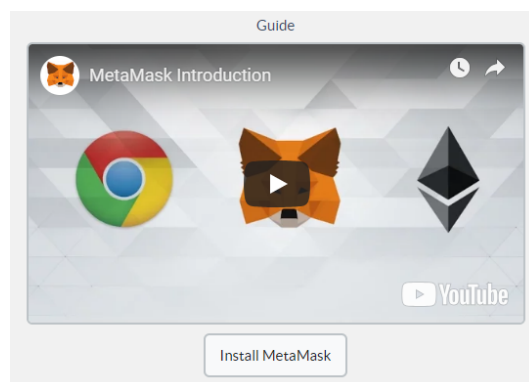


Figure 2.2.2: Introduction to MetaMask

After the installation process is complete you will see MetaMask_G's icon on the top right of your browser. A new window will then open where you will have to configure your account. The download page can also be found at <https://metamask.io/>.

2.3 Configuration

Click on MetaMask's icon on the top right of your browser, and set up your Ethereum_G digital wallet_G by following the instructions. You can either create a new account or import an existing

one from the 12 words seed phrase.

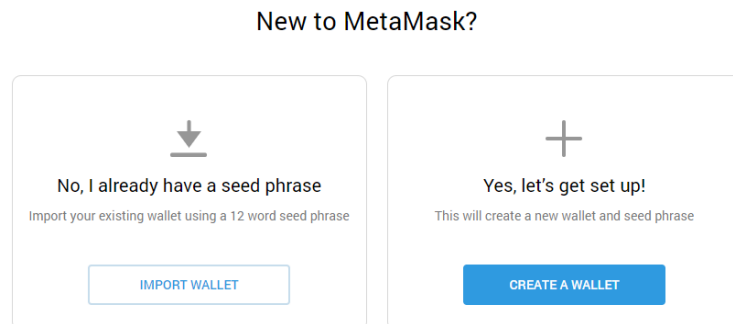


Figure 2.3.1: MetaMask setup

After setting up your account you will be able to join and use *Soldino*.

Note that MetaMask_G has to be installed in your browser as long as you want to use the platform: removing it from your browser will render you unable to use *Soldino*.

2.4 Transactions

Every time you make a transaction MetaMask_G will open a pop-up window that shows you its total cost. From this window you will be able to accept it or decline it.

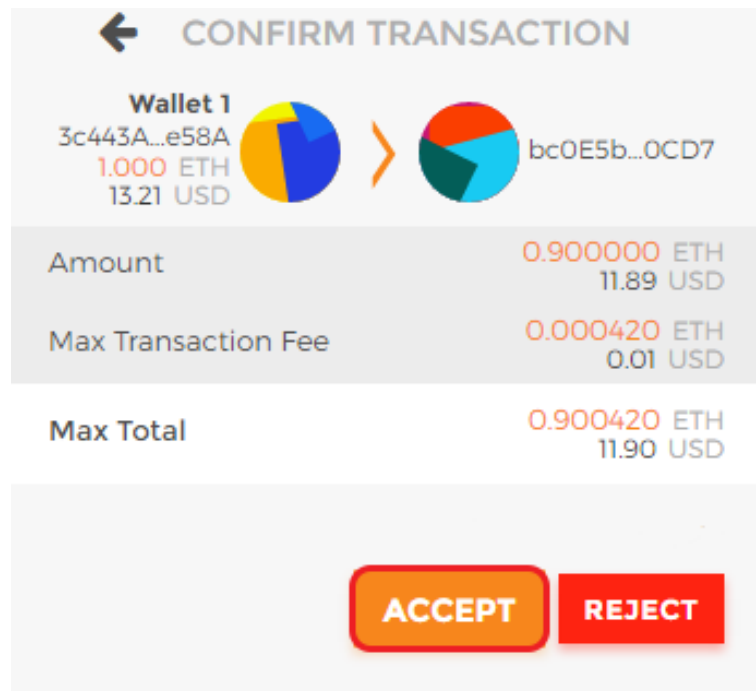


Figure 2.4.1: Example of a MetaMask transaction

Every change made on the Ethereum_G Network has a cost. This is called gas and is measured in GWEI, a billionth of an Ether_G. When you make a transaction you can choose whether it should have a high or low priority, higher priority will consume more gas than a lower one but will be mined quicker. We do not recommend changing the priority for transactions made in *Soldino* as it does not matter much.

Note that all prices shown in the platform are in Cubits_G (CC_G), *Soldino*'s own special token. Also, note that 1 Cubit = 1 Euro.

3 Citizens

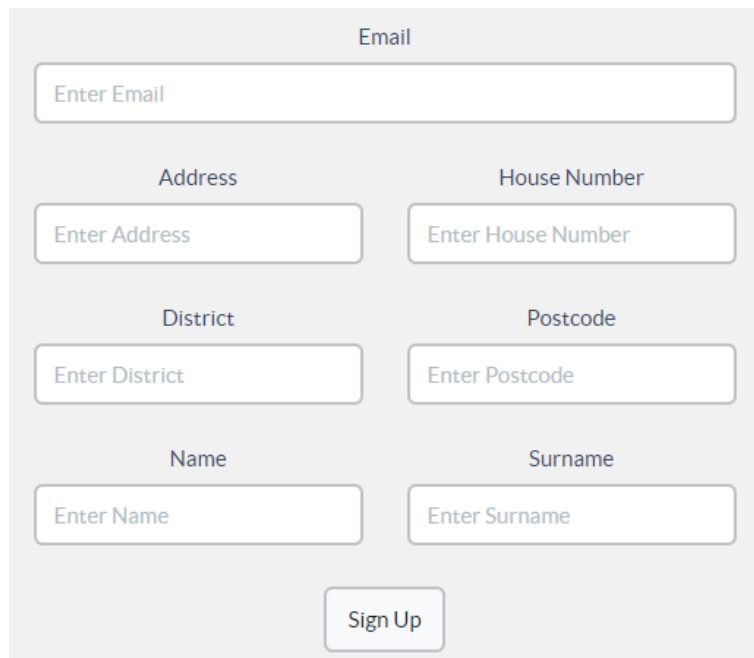
3.1 Registration

If you want to create a personal account for *Soldino* visit the homepage and make sure that the slider is set on "Citizen".



Figure 3.1.1: Select "Citizen" from the slider

Then, insert your data in the form.



The form is titled 'Email' at the top. It contains the following fields:

- Email: A single-line text input field with the placeholder 'Enter Email'.
- Address: A single-line text input field with the placeholder 'Enter Address'.
- House Number: A single-line text input field with the placeholder 'Enter House Number'.
- District: A single-line text input field with the placeholder 'Enter District'.
- Postcode: A single-line text input field with the placeholder 'Enter Postcode'.
- Name: A single-line text input field with the placeholder 'Enter Name'.
- Surname: A single-line text input field with the placeholder 'Enter Surname'.

At the bottom of the form is a 'Sign Up' button.

Figure 3.1.2: Citizen signup form

After you have completed all the fields with your informations press the "Sign up" button. If an entry is not valid (i.e. the email address does not contain a valid domain) the system will let you know and you have to correct that field to continue. If all informations are correct a pop-up window will open asking you to allow *Soldino* to access your information.

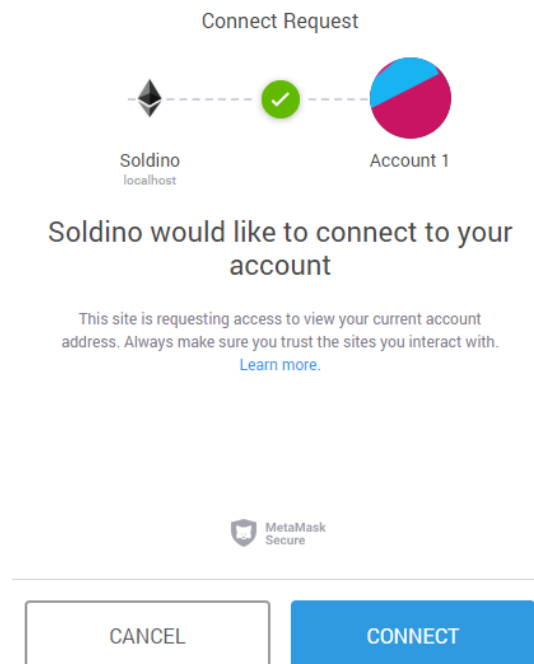


Figure 3.1.3: Connecting MetaMask to *Soldino*

Press "Connect" and you will be redirected to a page congratulating you for your registration on the platform.

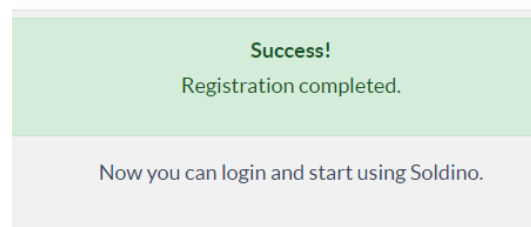


Figure 3.1.4: Registration completed message

3.1.1 Citizen already registered

If your univocal key is already registered in the platform you will see an error page telling you that you cannot create a new account.

3.2 Login

If you already have a personal account press the "login" button on the top right of the homepage, you will automatically log in your account (there is no need for a username or password, all is done via MetaMask).

To be able to log in you have to be logged in your MetaMask_G account.

3.2.1 Account is disabled

If your account was disabled by the Government you will see an error message and, if provided, the reason why that happened.

3.3 Logout

To log out of *Soldino* you just have to log out of your MetaMask_G. To do this you have to press MetaMask's icon on the top right of the browser, press your account's icon and then press "Log out" on the top right.

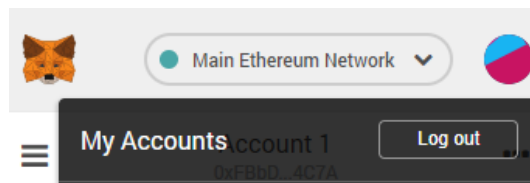


Figure 3.3.1: Logging out

3.4 Buying

3.4.1 Searching

You can search for products by name using the search bar that can be found right at the top of the page. After you start typing you will see all results that match your search. If no matching products are found you will a message showing you that.

3.4.2 Cart

You can add products in your cart, after selecting the quantity you need, by pressing the "Add to cart" button under it.

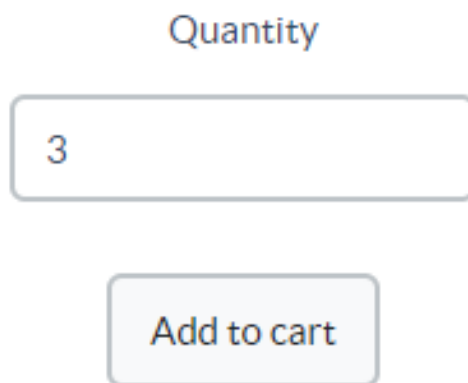


Figure 3.4.1: Adding a product to your cart

The number on the cart shows you how many different products are in it. You can access your cart by pressing the shopping cart icon on the bar at the top of the page.



Figure 3.4.2: Icon to access your cart

Here you will find every item you have previously selected with their quantity and above them you will see the total for your order. If you need to modify the quantity press the "+" or "-" buttons.

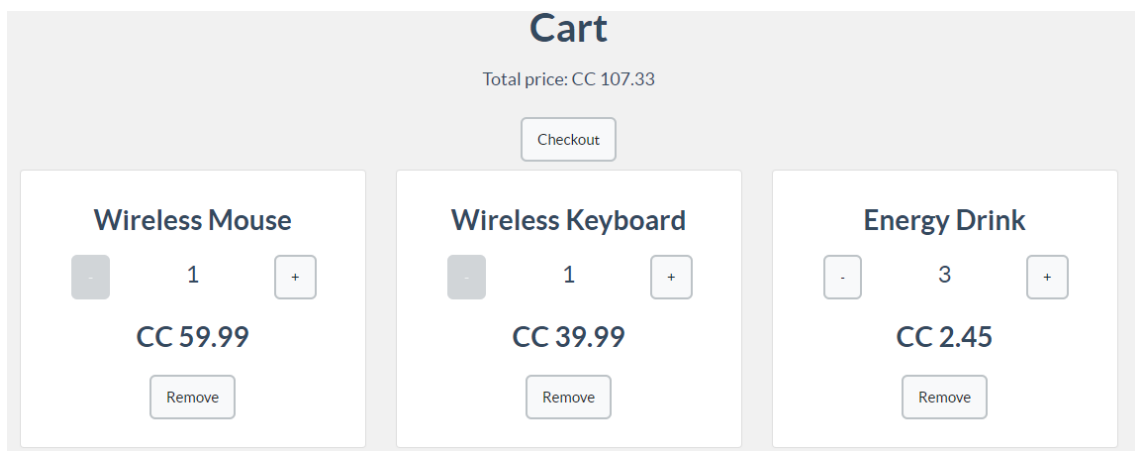
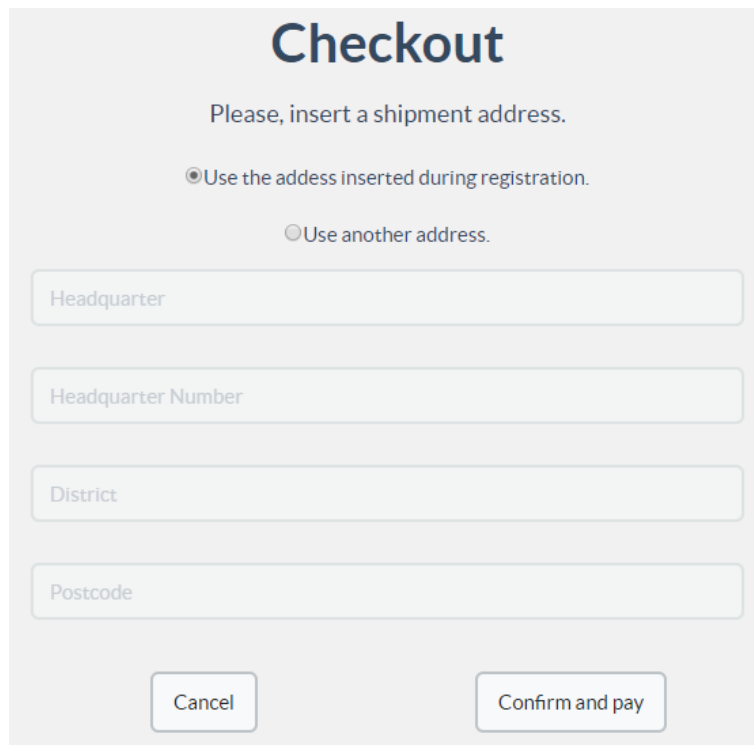


Figure 3.4.3: Example of a cart's content

When you want to proceed with the order press the "Checkout" button, you will be redirected to the checkout page.

3.4.3 Checkout

In the checkout page you will be able to choose where your products will be delivered to by using the radio buttons: you can either select the address you gave during registration or enter a new one.



Checkout

Please, insert a shipment address.

☒ Use the address inserted during registration.

☐ Use another address.

Headquarter

Headquarter Number

District

Postcode

Cancel Confirm and pay

Figure 3.4.4: Example of a checkout page

Press the "Confirm and pay" button to proceed. In a new pop up window MetaMask_G will ask you to confirm the transaction. The price shown here will be a little higher because it includes the gas fee.

Otherwise, press "Cancel" to return to your cart.

3.4.4 Past orders

You can visit the page containing all past orders by pressing the "Orders" button in the bar at the top of the page.

Here you will find a chronological list of every purchase that you made with *Soldino*. Each order tells when it was made, who was the seller, what were the items bought, where it was shipped to and how much you paid.

Order # 9	2019/03/29	Via S. Donato 33, Bologna, 40127
Seller	VAT Number	
Biagetti Arredamenti	01384571004	
Products	Quantity	Unit price
Blue Chair	3	CC 9.99
Red Chair	3	CC 9.99
VAT Price: CC 4.3956	Net Price: CC 15.5844	Total Price: CC 59.94

Order # 8	2019/04/01	Via Alberto Cavalletto 10, Padova, 35122
Seller	VAT Number	
Vanuzzo Interni & Design	91388421067	
Products	Quantity	Unit price
White Table	1	CC 9.99
VAT Price: CC 2.1978	Net Price: CC 7.7922	Total Price: CC 9.99

Figure 3.4.5: Example of past orders

4 Businesses

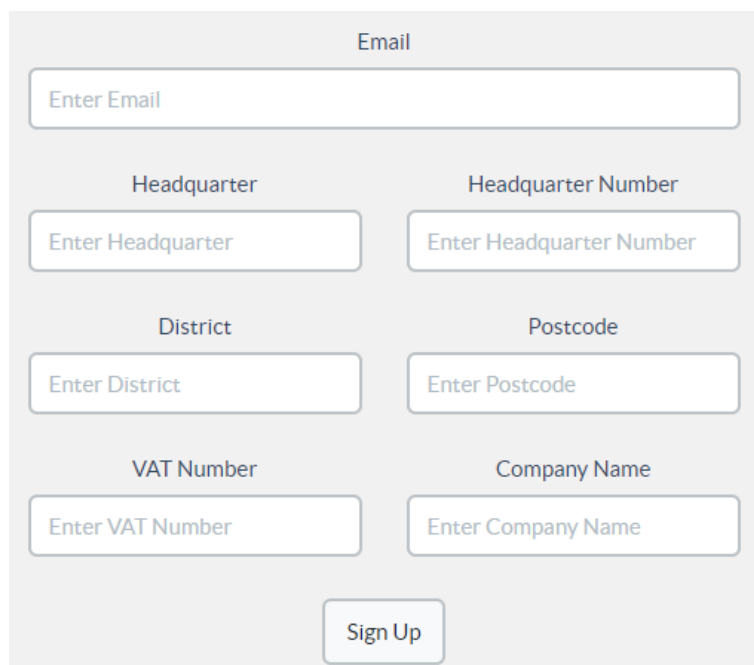
4.1 Registration

If you want to create a business account for *Soldino* visit the homepage and make sure that the slider is set on "Business".



Figure 4.1.1: Select "Business" from the slider

Then, insert your business' data in the form.



The form is titled "Business signup form" and contains the following fields and buttons:

- Email:** A single-line text input field with the placeholder "Enter Email".
- Headquarter:** A single-line text input field with the placeholder "Enter Headquarter".
- Headquarter Number:** A single-line text input field with the placeholder "Enter Headquarter Number".
- District:** A single-line text input field with the placeholder "Enter District".
- Postcode:** A single-line text input field with the placeholder "Enter Postcode".
- VAT Number:** A single-line text input field with the placeholder "Enter VAT Number".
- Company Name:** A single-line text input field with the placeholder "Enter Company Name".
- Sign Up:** A button located at the bottom center of the form.

Figure 4.1.2: Business signup form

After you have completed all the fields with your informations press the "Sign up" button. If an entry is not valid (i.e. the email address does not contain a valid domain) the system will let you know and you have to correct that field to continue. If all informations are correct a pop-up window will open asking you to allow *Soldino* to access your information.

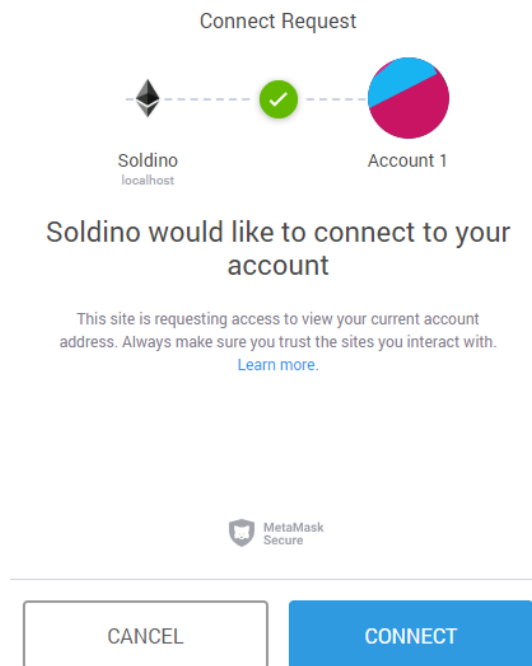


Figure 4.1.3: Connecting MetaMask to *Soldino*

Press "Connect" and you will be redirected to a page congratulating you for your registration on the platform. for your registration on the platform.

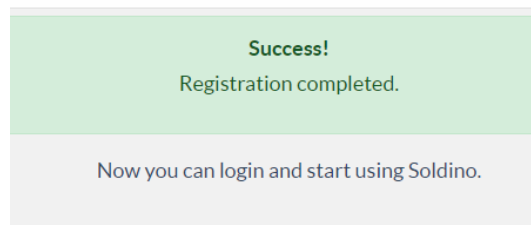


Figure 4.1.4: Registration completed message

4.1.1 Business is already registered

If your univocal key is already registered in the platform you will see an error page telling you that you cannot create a new account.

4.2 Login

If you already have a business account press the "login" button on the top right of the homepage, you will automatically log in your account (there is no need for a username or password, all is done via MetaMask).

To be able to log in you have to be logged in your MetaMask_G account.

4.2.1 Account is disabled

If your account was disabled by the Government you will see an error message and, if provided, the reason why that happened.

4.3 Logout

To log out of *Soldino* you just have to log out of your MetaMask_G. To do this you have to press MetaMask's icon on the top right of the browser, press your account's icon and then press "Log out" on the top right.

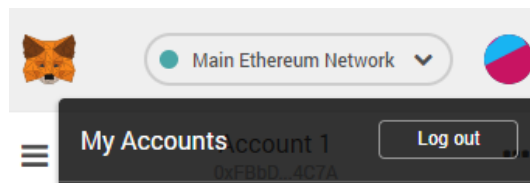


Figure 4.3.1: Logging out

4.4 Buying

4.4.1 Searching

You can search for products by name using the search bar that can be found right at the top of the page. After you start typing you will see all results that match your search. If no matching products are found you will a message showing you that.

4.4.2 Cart

You can add products in your cart, after selecting the quantity you need, by pressing the "Add to cart" button under it.

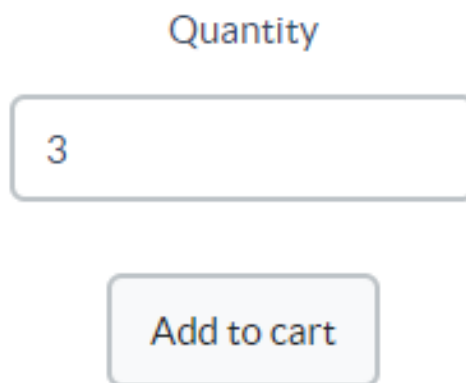


Figure 4.4.1: Adding a product to your cart

The number on the cart shows you how many different products are in it. You can access your cart by pressing the shopping cart icon on the bar at the top of the page.



Figure 4.4.2: Icon to access your cart

Here you will find every item you have previously selected with their quantity and above them you will see the total for your order. If you need to modify the quantity press the "+" or "-" buttons.

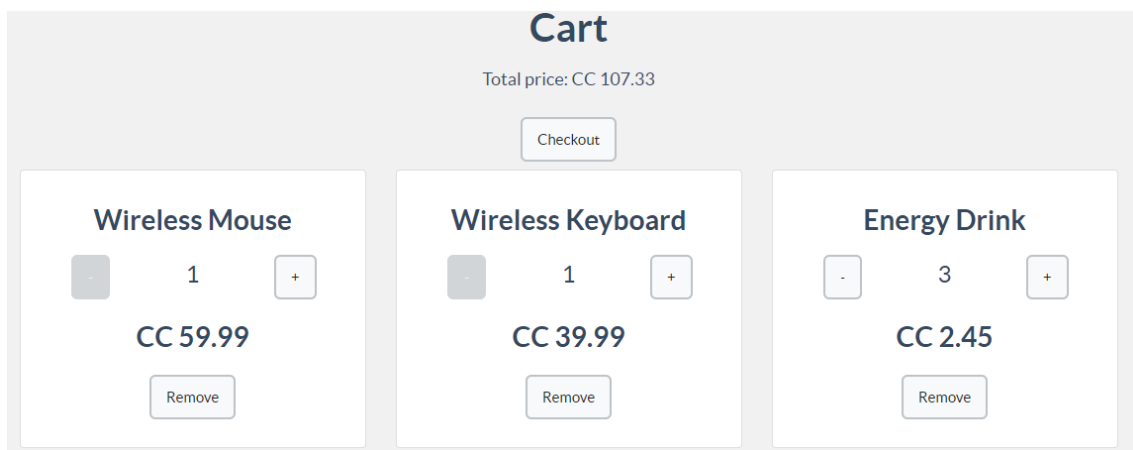
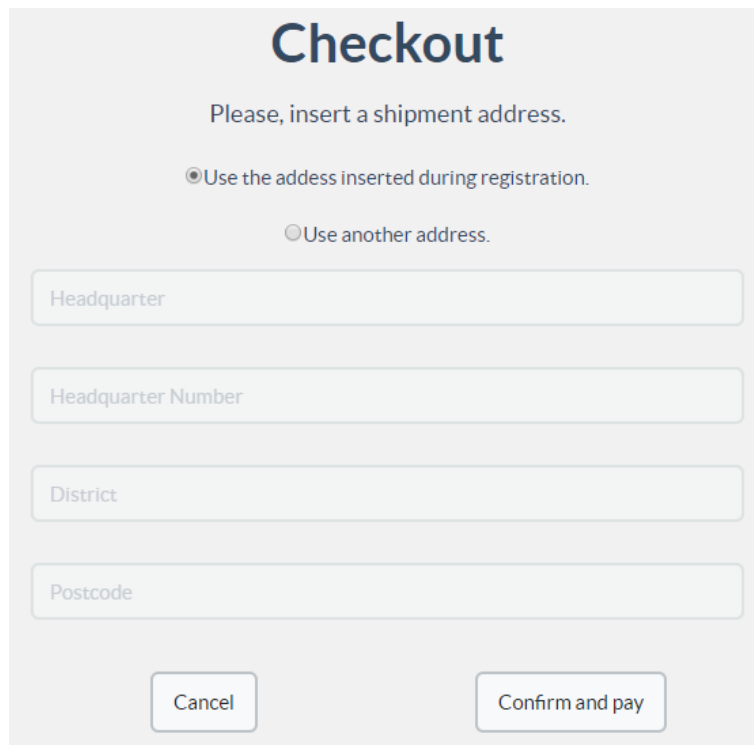


Figure 4.4.3: Example of a cart's content

When you want to proceed with the order press the "Checkout" button, you will be redirected to the checkout page.

4.4.3 Checkout

In the checkout page you will be able to choose where your products will be delivered to by using the radio buttons: you can either select the address you gave during registration or enter a new one.



Checkout

Please, insert a shipment address.

☒ Use the address inserted during registration.

☐ Use another address.

Headquarter

Headquarter Number

District

Postcode

Cancel

Confirm and pay

Figure 4.4.4: Example of a checkout page

Press the "Confirm and pay" button to proceed. In a new pop up window MetaMask_G will ask you to confirm the transaction. The price shown here will be a little higher because it includes the gas fee.

Otherwise, press "Cancel" to return to your cart.

4.4.4 Past orders

You can visit the page containing all past orders by pressing the "Orders" button in the bar at the top of the page.

Here you will find a chronological list of every purchase that you made with *Soldino*. Each order tells when it was made, who was the seller, what were the items bought, where it was shipped to and how much you paid.

Order # 9	2019/03/29	Via S. Donato 33, Bologna, 40127
Seller	VAT Number	
Biagetti Arredamenti	01384571004	
Products	Quantity	Unit price
Blue Chair	3	CC 9.99
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VAT Price: CC 4.3956	Net Price: CC 15.5844	Total Price: CC 59.94

Order # 8	2019/04/01	Via Alberto Cavalletto 10, Padova, 35122
Seller	VAT Number	
Vanuzzo Interni & Design	91388421067	
Products	Quantity	Unit price
White Table	1	CC 9.99
VAT Price: CC 2.1978	Net Price: CC 7.7922	Total Price: CC 9.99

Figure 4.4.5: Example of past orders

4.5 Selling

If you want to manage the products you are selling on *Soldino* you have to press the "Products Manager" on the bar at the top of the page. Here you will find every product you are currently selling.

ProductsManager

Add a product

VGA to HDMI converter

Pocket size adapter

CC 7.7922

CC 2.1978 ~ 22%

Edit

Remove

Thunderbolt to HDMI converter

For iMac and MacBook

CC 7.7922

CC 2.1978 ~ 22%

Edit

Remove

USB type C to USB 3 cable

1 meter long cable

CC 7.7922

CC 2.1978 ~ 22%

Edit

Remove

Ethernet cable

15 meters long ethernet cable

CC 7.7922

CC 2.1978 ~ 22%

Edit

Remove

Figure 4.5.1: Products Manager page

4.5.1 Selling a new product

If you want to sell a new product you have to press "Add a product", you will be redirected to a page where you will have to insert all the informations regarding your new product.

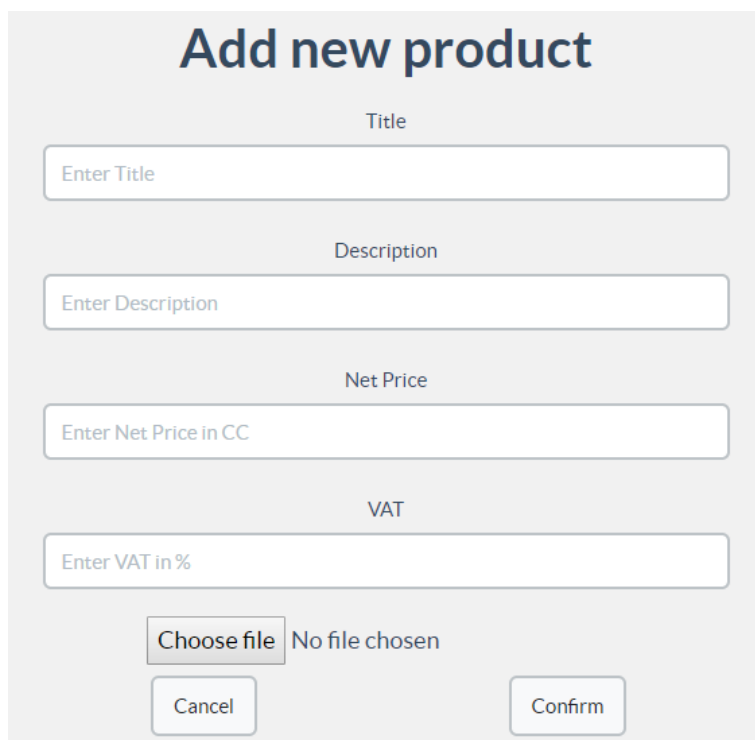
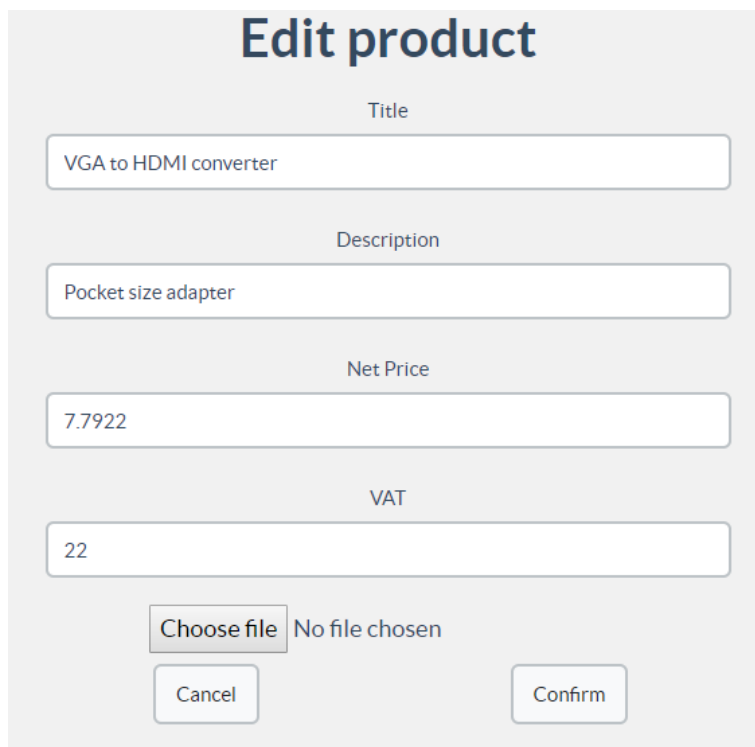
The screenshot shows a web form titled "Add new product" in a large, bold, dark blue font. Below the title, there are four input fields, each with a label above it: "Title" (with placeholder "Enter Title"), "Description" (with placeholder "Enter Description"), "Net Price" (with placeholder "Enter Net Price in CC"), and "VAT" (with placeholder "Enter VAT in %"). At the bottom of the form, there is a file upload section with a "Choose file" button, the text "No file chosen", a "Cancel" button, and a "Confirm" button.

Figure 4.5.2: Adding a new product

After you entered every information and you have selected a photo press "Confirm" and it will be added to the products users can buy.
Press "Cancel" if you do not wish to continue.

4.5.2 Modifying a product

If you want to change the informations of a product you are already selling press the "Edit" button under them, you will be redirected to a page where you will be able to change all the product's information.



Edit product

Title

VGA to HDMI converter

Description

Pocket size adapter

Net Price

7.7922

VAT

22

Choose file No file chosen

Cancel Confirm

Figure 4.5.3: Editing the informations of a product

After you are done with the changes press "Confirm" to save them.
If you do not wish to apply the changes press "Cancel".

4.5.3 Removing a product

If you want to remove a product you are selling from the platform press the "Remove" button under it.

Note that removing a product will not delete orders made prior to the removal.

4.6 VAT management

If you are a business *Soldino* will manage VAT for the products you buy and sell on the platform automatically. You can access the page containing all invoices by pressing the "Transaction Manager" button on the bar at the top of the page.

VAT status for the selected quarter: -321.23 CC					Instant Payment	Deferred Payment
Number	Type	Date	Total Price	Total VAT	Download PDF	
Invoice #12345	Purchase	2018/05/01	CC 10	CC 2.2	More details	
Invoice #67890	Purchase	2018/05/01	CC 10	CC 2.2	More details	

Figure 4.6.1: Example of past invoices

Here you will also see the status of the trimester.

A red value means that you will have to pay that amount to the Government.

VAT status for the selected quarter: -321.23 CC

Figure 4.6.2: Example of a negative VAT status

While a green one means that you will soon be reimbursed for that amount.

VAT status for the selected quarter: +173.87 CC

Figure 4.6.3: Example of a positive VAT status

You can see more information about an invoice by pressing the "More details" button. This will open a pop-up window containing all the details.

Invoice #9845

×

Date:	2019/05/01
Order date:	2019/05/01
Order number:	4164
Products:	
Product:	Cookies
Total Price:	CC 10
Net Price:	CC 7.8
VAT %:	22
Description:	Fresh made chocolate chip cookies
Quantity:	CC 2
Total VAT: CC	2.2
Total Price: CC	10
Seller:	Tony S.P.A. 01384571004
Buyer:	Enrico Verdi
Shipment:	Via Antonio Grassi 13, Padova, 12345

Figure 4.6.4: Example of an invoice

You can also download a file containing all the trimesters' invoices by pressing the "Download PDF" button.

4.6.1 Paying VAT

If you are in debt with the government next to how much you have to pay you will see two buttons.

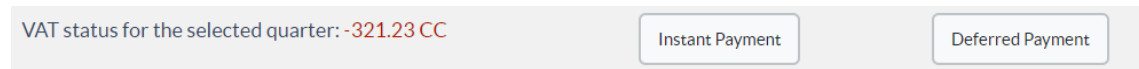


Figure 4.6.5: Paying off a negative Vat status

4.6.1.1 Instant payment

If you choose to instantly pay off what you owe press "Instant payment". MetaMask_G then will open a new window asking you allow the transaction, accept to continue.

4.6.1.2 Deferred payment

Otherwise, you can choose deferred payment_G by pressing "Deferred payment"

4.6.2 Checking past trimesters' VAT

You can see invoices of past trimesters by using the drop-down menu at the top of the page.

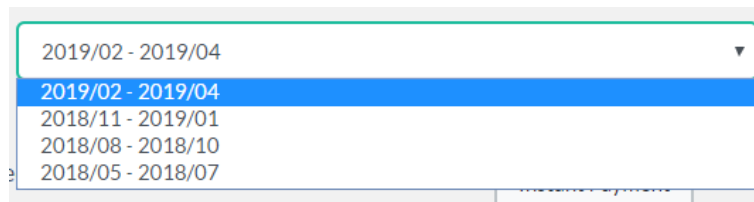


Figure 4.6.6: Past trimesters

From this page you will also be able to see invoices' specific details or download them as PDF as explained before.

5 Government

5.1 Registration

The government cannot register a new account like citizens and businesses because only one account is allowed. This account is provided by the developer of *Soldino*.

5.2 Login

If you want to log on the Government account press the "login" button on the top right of the homepage, you will automatically log in your account (there is no need for a username or password, all is done via MetaMask).

To be able to log in make sure you are logged in the correct MetaMask_G account.

5.3 Logout

To log out of *Soldino* you just have to log out of your MetaMask_G. To do this you have to press MetaMask's icon on the top right of the browser, press your account's icon and then press "Log out" on the top right.

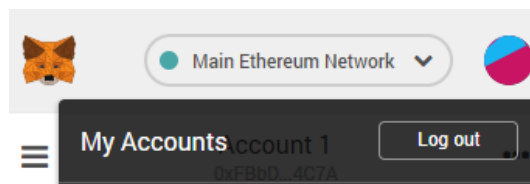


Figure 5.3.1: Logging out

5.4 Cubit

5.4.1 Minting

The Government can mint Cubits_G, a special token for *Soldino* that has the value of 1 Euro. This can be done by visiting

5.4.2 Distributing

The Government can distribute Cubits_G previously minted amongst the users of the platform. This can be done by visiting

5.5 Managing users

The Government can activate disabled accounts or deactivate active accounts. This can be done by visiting the page containing all users registered on the platform.

5.5.1 Activating users

After you have found the account you want to enable press the button "Enable". After being enabled an account will again be able to make purchases on *Soldino*.

5.5.2 Deactivating users

After you have found the account you want to disable press the "Disable" button. After pressing it a window will open where you can write a message explaining why the account was disabled that will be shown when that user will try an log in. Disabling an account means that it will not be able to make purchases on *Soldino* until it is enabled.

5.6 Reimbursing businesses

The Government can reimburse business of their VAT credit. This can be done by visiting

6 Issues

We, members of *8Lab solutions*, did our best to build *Soldino* bug-free and did extensive tests to squish all of them, but we cannot be sure that they are all gone.

If you encounter a bug we would appreciate if reported it to us at our email address (8labsolution@gmail.com) or in the dedicated page at the project's repository (<https://github.com/8LabSolutions/Soldino/issues>).

When reporting an issue please include:

- what type of user encountered it (citizen, business or Government);
- a detailed sequence of steps that must be done to reproduce the error;
- if the error included Metamask_G and what type of error it shows;
- your browser's console log output.

A Glossary

C

Cubit

It is the custom Ethereum currency of *Soldino*, it has the value of 1€. All prices shown are in Cubits. The Government can mint and distribute Cubits to the platform's users.

CC

Short version of Cubit, see Cubit above.

D

Deferred payment

Businesses can choose not to pay their due taxes immediately and pay at a later time.

Digital wallet

Digital wallets are where virtual currency is stored.

E

Ether

Ether is the currency of Ethereum.

Ethereum

Ethereum is an open software platform based on blockchain technology that enables developers to build and deploy decentralized applications.

M

MetaMask

It is a Plug-in available for Chrome, Firefox, Opera and Brave that allows you to interact with the Ethereum network without hosting a node and create multiple digital wallets_G. It is required to use in *Soldino*.

P

Product

Products include goods and services.

V

VAT

VAT or value-added tax is a type of tax that is assessed incrementally, based on the increase in value of a product or service. The VAT percentage is chosen by the product's seller.