8Lab Solutions - Project "Soldino"

User manual

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1 Introduction

This document s the user manual of *Soldino*, a project by *8Lab Solutions* based on the Erhereum 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 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;
  - distribute Cubits;
  - reimburse businesses of their VAT credit;

1.2 Requiremets

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 plug-in in your browser. More information will follow.

2 MetaMask

2.1 What is MetaMask

MetaMask is a browser extensions that manages your Ethereum wallet and allows you to send and receive Ethers (Cubits or CCs in *Soldino*). This plug-in is necessary to perform all the basic int this platform such as login and transactions.

2.2 Installation

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

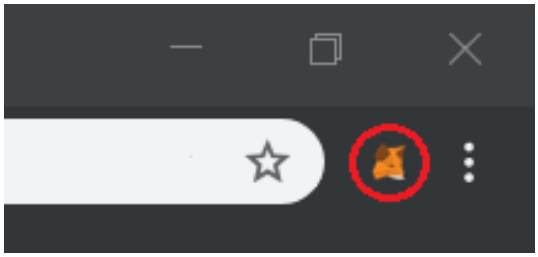


Figure 2.2.1: MetaMask's icon

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.

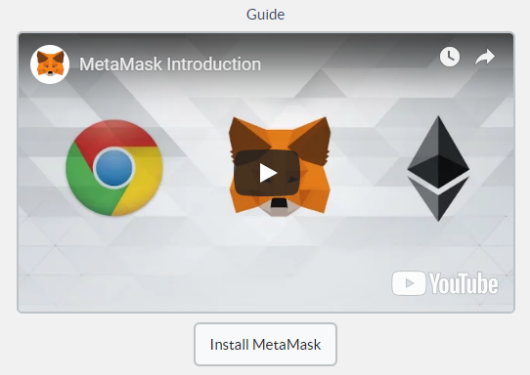


Figure 2.2.2: Introduction to MetaMask

After the installation process is complete you will see MetaMask'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 personal Ethereum wallet by following the instructions. You can either create a new account or import an existing

one from the 12 words seed phrase.

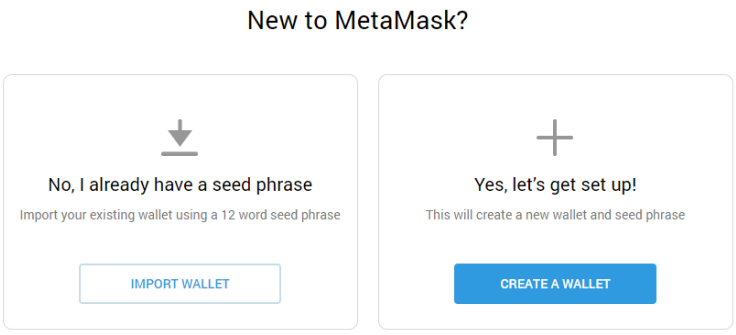


Figure 2.3.1: MetaMask setup

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

Note that MetaMask has to be installed in your browser as long a 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 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.

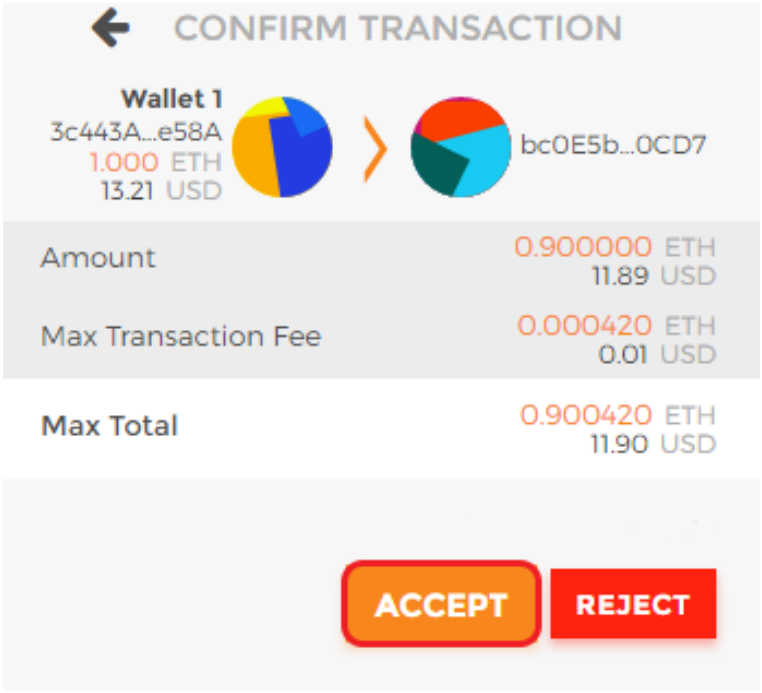


Figure 2.4.1: Example of a MetaMask transaction

Every change made on the Ethereum Network has a cost. This is called gas and is measured in GWEI, a billionth of a Ether. 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 transaction made in *Soldino* as it does not matter much.
Note that all prices shown are in Cubits (CC), *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 in set on "Citizen".

Figure 3.1.1: Select "Citizen" from the slider

Then, insert your data in the 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 the informations are correct a pop up window will open asking you to allow *Soldino* to access your information.

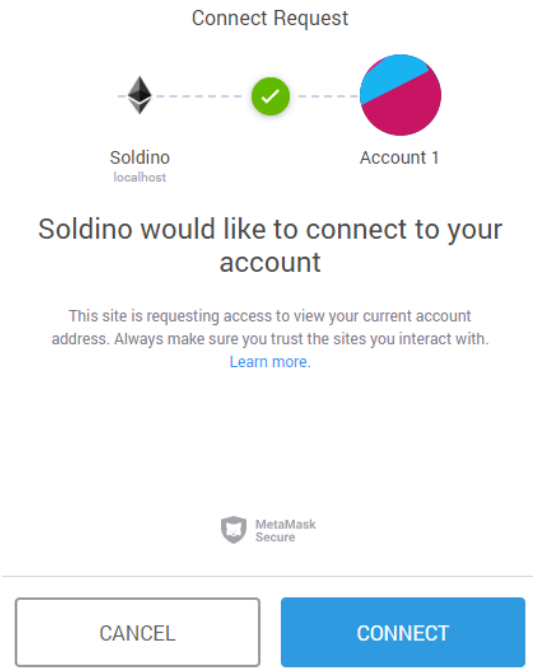


Figure 3.1.2: Connecting MetaMask to *Soldino*

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

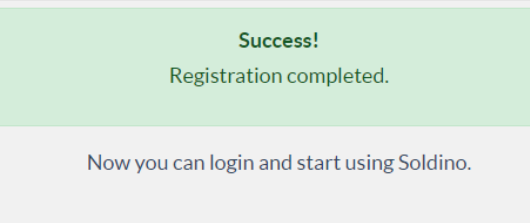


Figure 3.1.3: Registration completed message

3.1.1 Citizen already registered

If your address is already registered in our 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 account.

3.3 Logout

To log out of *Soldino* you just have to log out of your MetaMask. 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.

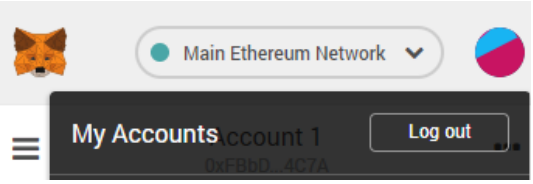


Figure 3.3.1: Registration completed message

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 tour 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. The number on the cart shows you how many different products are in it.

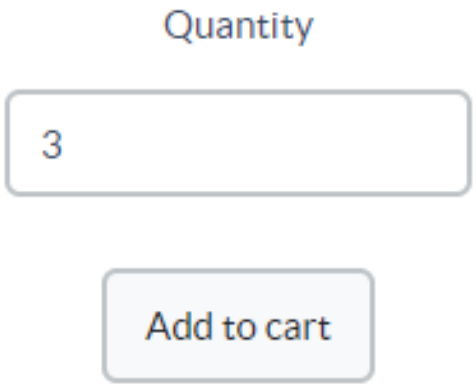


Figure 3.4.1: Adding a product to your cart

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.

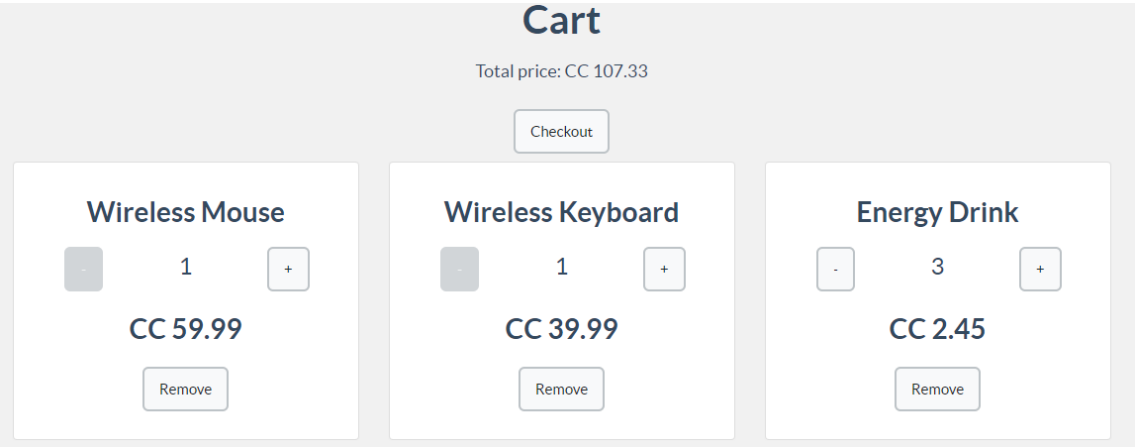


Figure 3.4.3: Example of content of the cart

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.

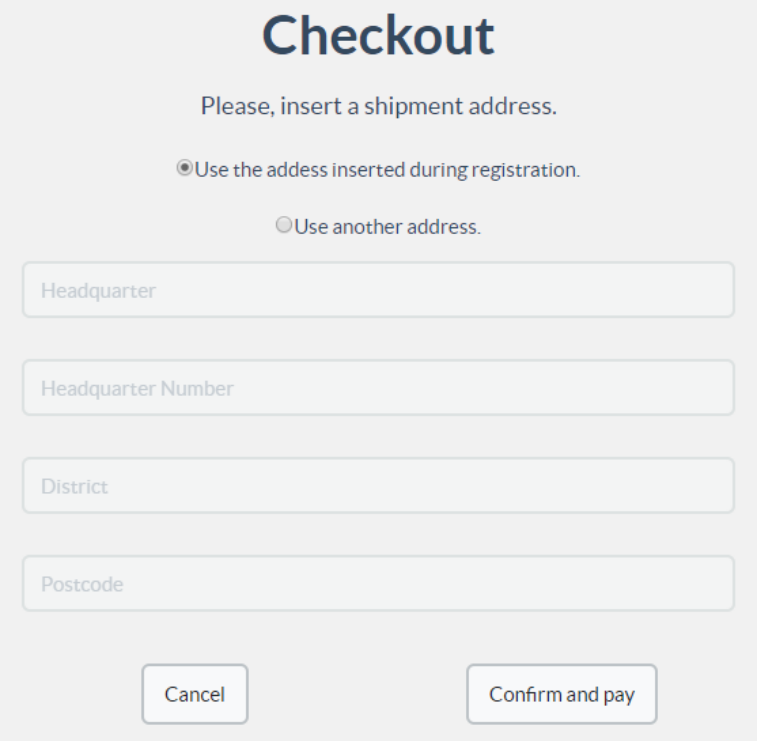
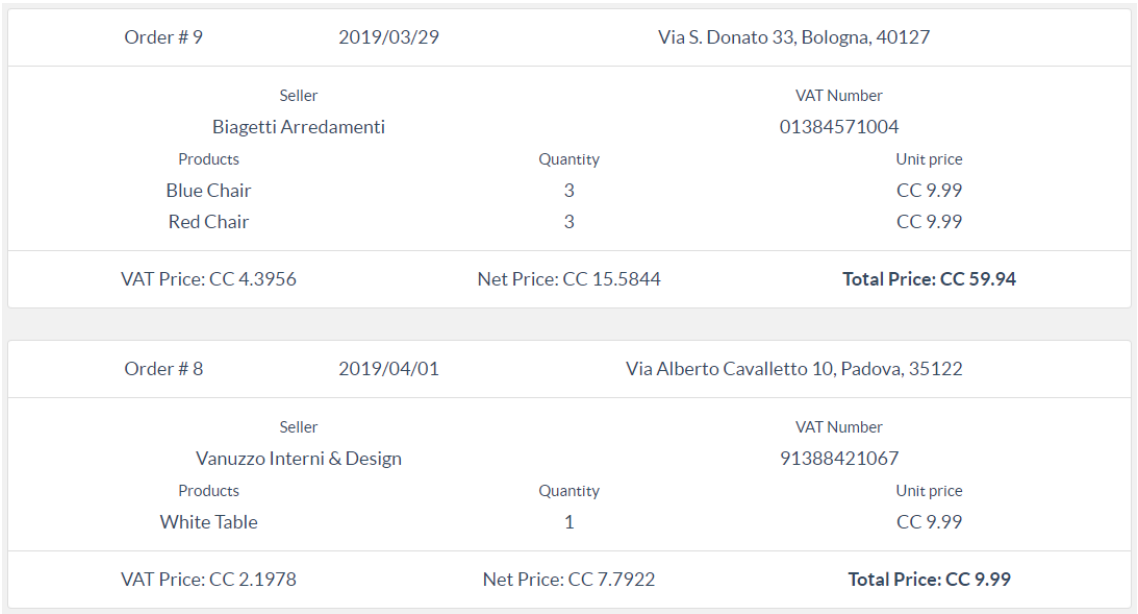


Figure 3.4.4: Example of checkout page

Press the "Confirm and pay" button to proceed. In a new pop up window MetaMask 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 a 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, 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

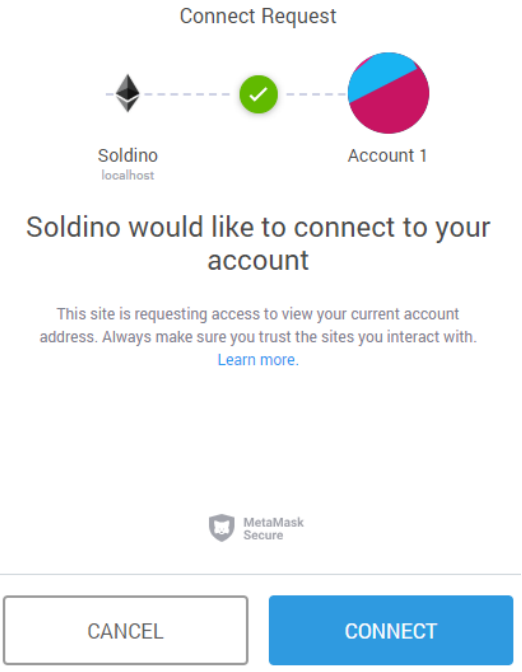
4 Businesses

4.1 Registration

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

Figure 4.1.1: Select "Business" from the slider

Then, insert your business's data in the 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 the informations are correct a pop up window will open asking you to allow *Soldino* to access your information.



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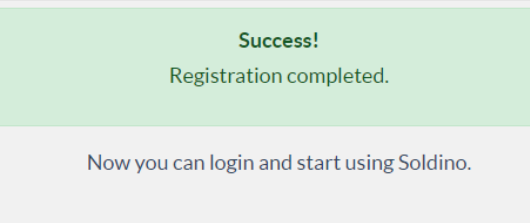

Figure 4.1.3: Registration completed message

4.1.1 Business is already registered

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

4.2 Login

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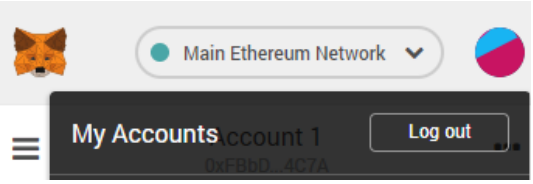

Figure 4.3.1: Registration completed message

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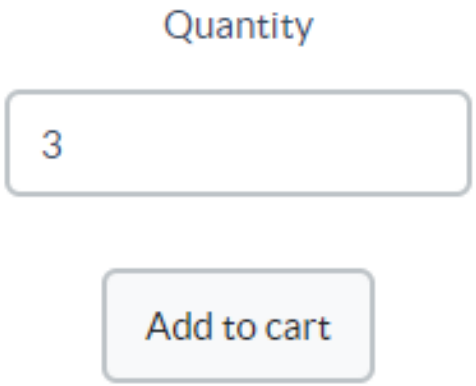

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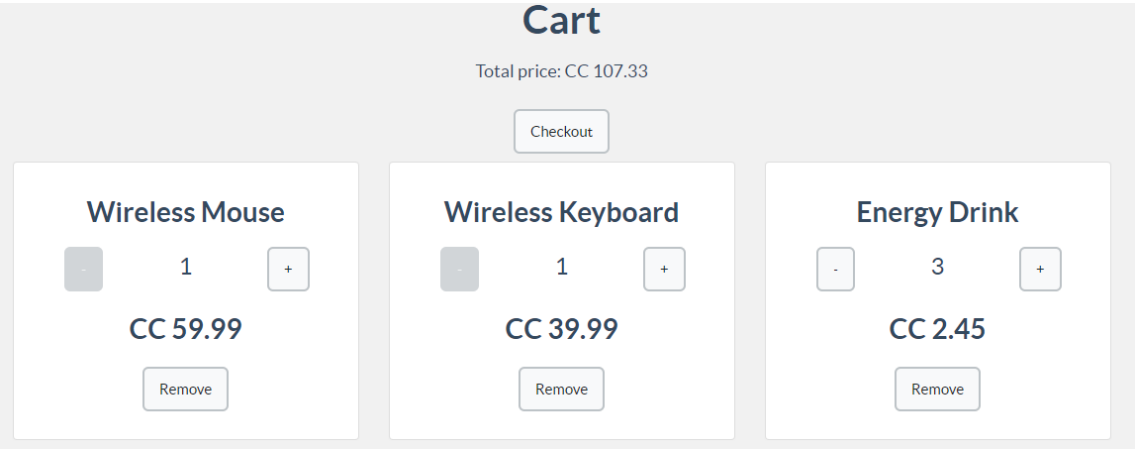

Figure 4.4.3: Example of content of the cart

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.

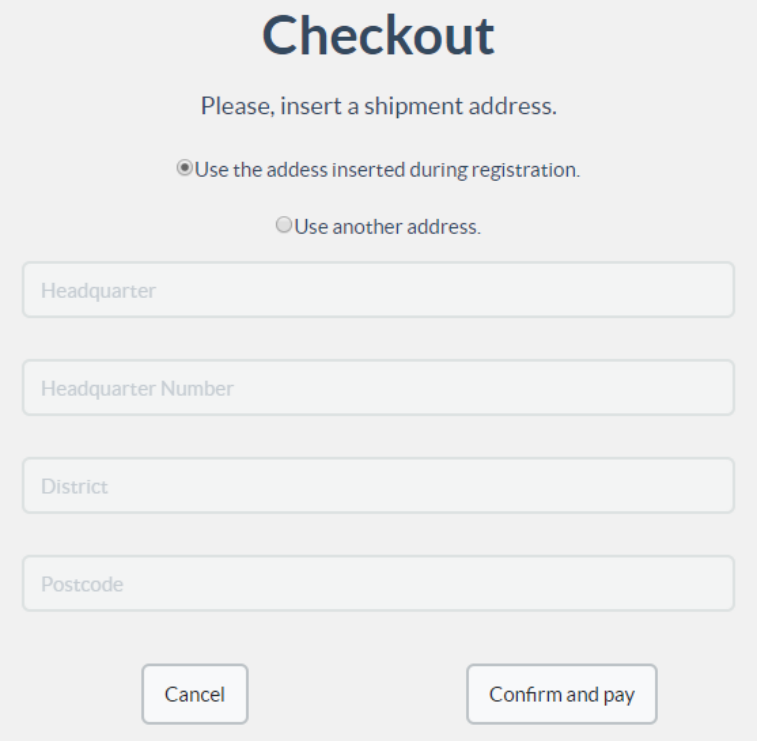

Figure 4.4.4: Example of checkout page

Press the "Confirm and pay" button to proceed. In a new pop up window MetaMask 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.

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You can visit a 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, how much you paid.

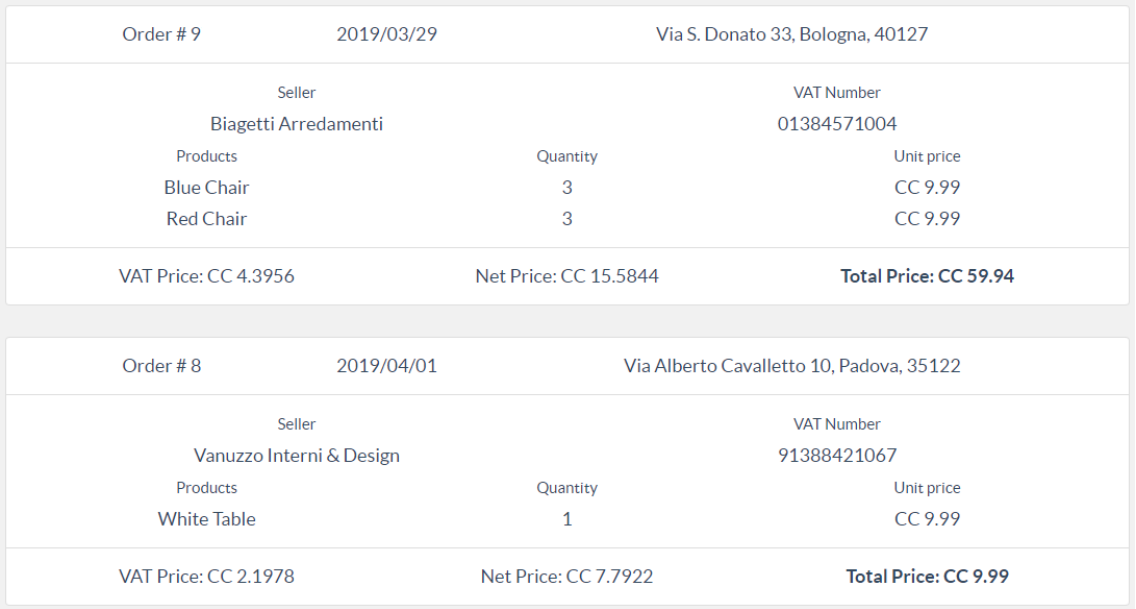


Figure 4.4.5: Example of past orders

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.

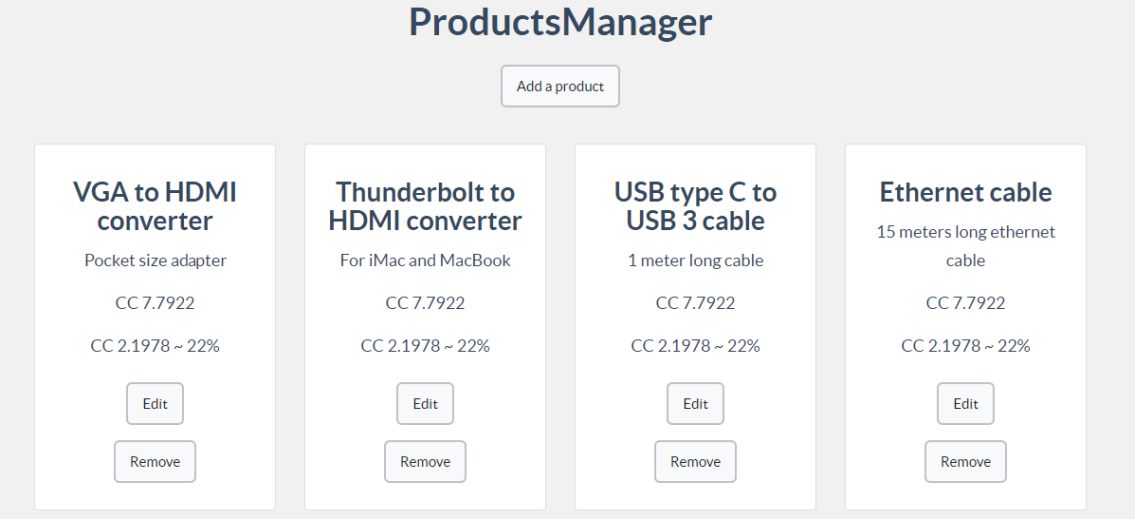


Figure 4.5.1: Products Manager page

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.

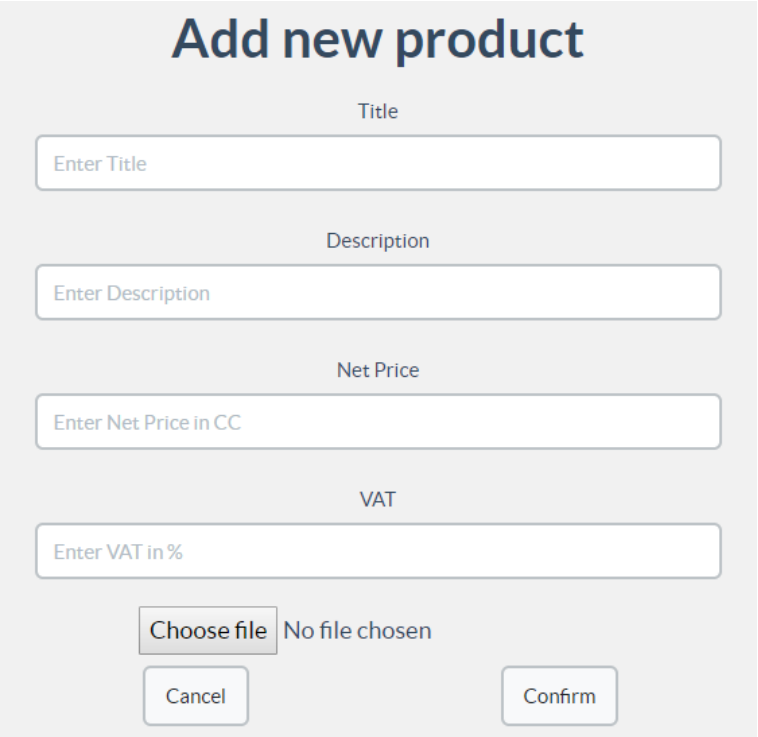


Figure 4.5.2: Adding a new product

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 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.

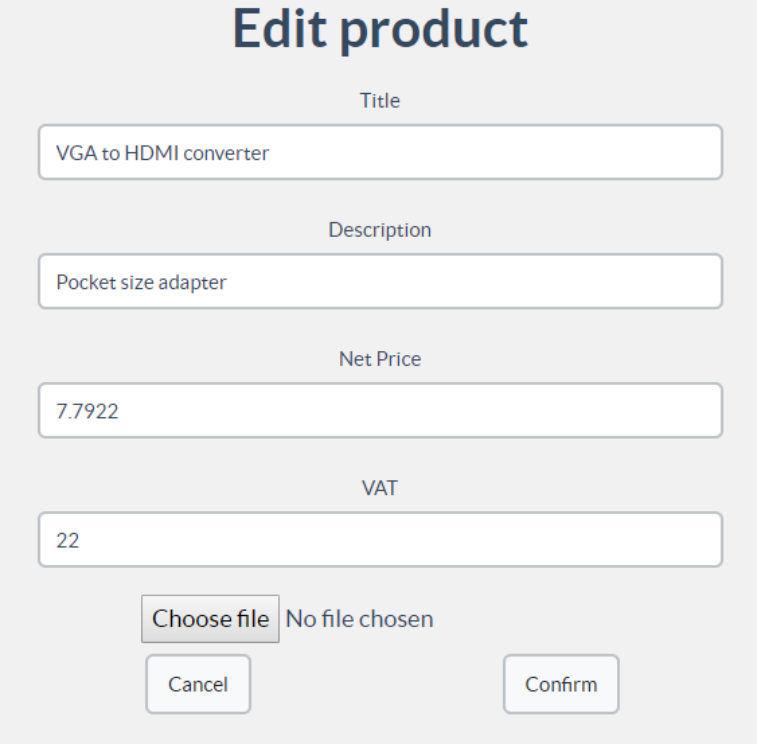


Figure 4.5.3: Editing a product's informations

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

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.

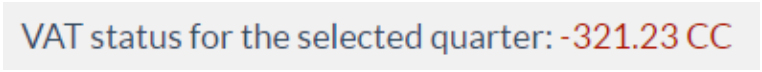


Figure 4.6.2: Example of a negative VAT status

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

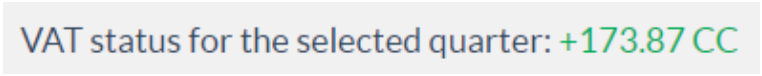
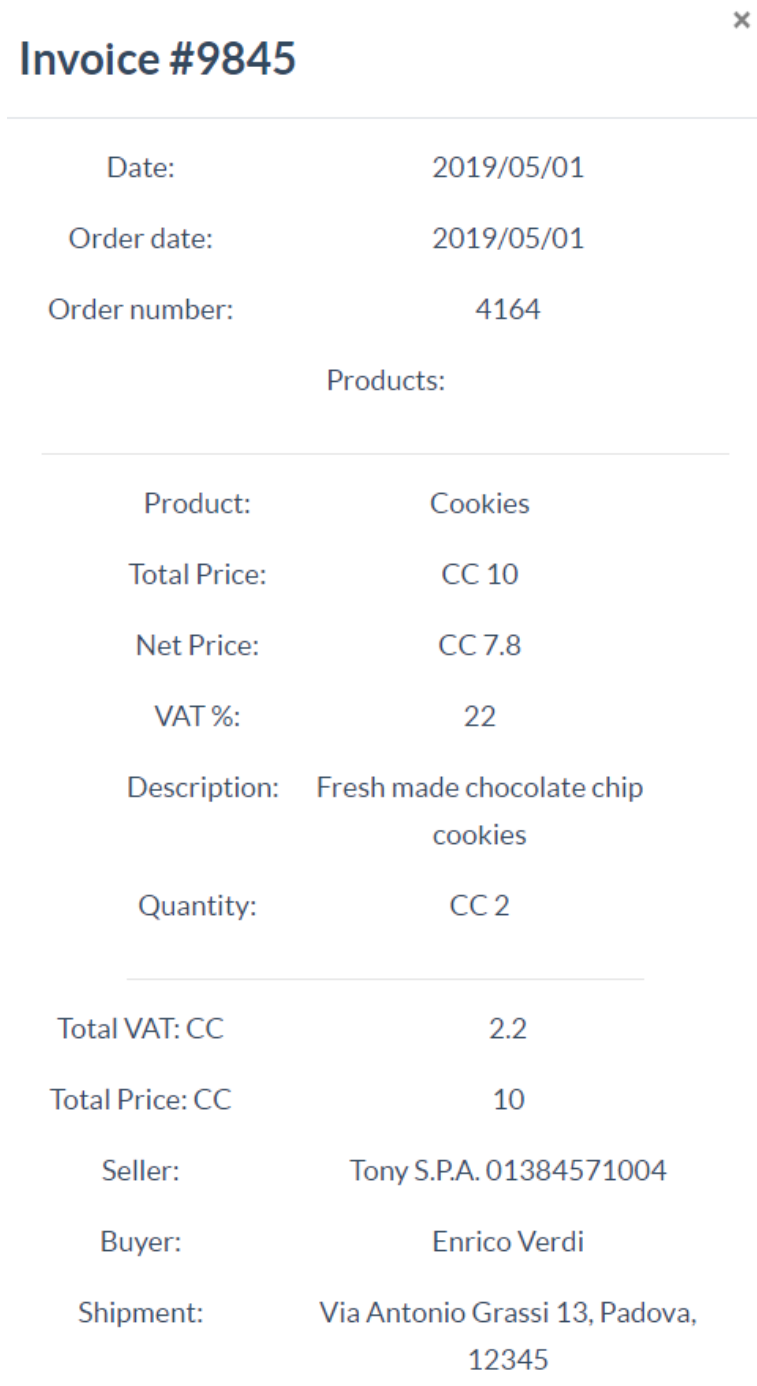


Figure 4.6.3: Example of a positive VAT status

You can see more information about an invoice by pressing the "More details" button on the right. 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

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.

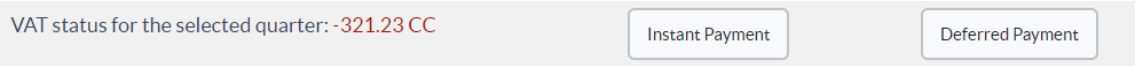


Figure 4.6.5: Paying off a negative Vat status

4.6.1.1 Instant payment

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

4.6.1.2 Deferred payment

Otherwise you can defer the payment by pressing "Deferred payment"

4.7 Checking past trimesters' VAT

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

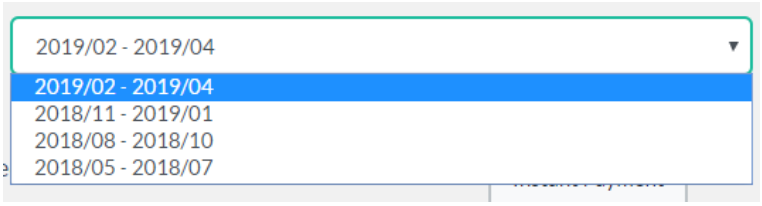


Figure 4.7.1: Past trimesters

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 other citizens and businesses and only one account is allowed. This account is provided by the developer of *Soldino*.

5.2 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 account.

5.3 Logout

To log out of *Soldino* you just have to log out of your MetaMask. 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.

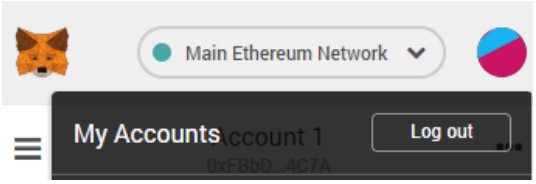


Figure 5.3.1: Registration completed message

5.4 Cubit

5.4.1 Minting

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

5.4.2 Distributing

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

5.5 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 you to report it to us at our email address (8labsolution@gmail.com) or in the dedicated page at the project's repository
When reporting an issue please include:

- what type of user encountered it;
- a detailed sequence of steps that must be done to reproduce the error;
- if the error included Metamask and what type of error it shows;
- your browser's console log output.

A Glossary