



User Manual

NFC Inventory System on Android
Version 1.0



Introduction and technical Information

You read the user manual of the NFC inventory system. On the next pages all the surfaces that you will see while using the app are shortly described and its functions explained.

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Technical Information and Security

This section is for technically interested users. Normal users just need to read the system requirements on the bottom right of this page.

The application requires an Android system Version 4.1 or more and you need a device with an NFC-tag reader in it. Moreover the app needs at least 2 MB free disk space. On the server side php must be supported and a MySQL database should be installed.

Security of data and connections was an important point while developing the application. That's why you need to authenticate on an LDAP-Server before manipulating any data and your authentication is stored with PHP session variables. The connection the database is made secure through the use of https what makes it very difficult for others to intercept the data that is sent through the network. In addition there are some preventive measures to avoid unintentional and forbidden database manipulations like SQL-Injections.



System Requirement

- Android 4.1+
- NFC-Tag Reader
- 2MB Free Disk Storage



Start Page

If you start the app you will see the start page as seen in the left image. You have the following options on this page:

Lend Item: With this button you can lend an item to somebody (see page 9)

Return Item: This button is used if somebody brings an item back to the inventory (see page 9)

Manipulate Item: Here you can add, edit or delete items (see page 11)

More: Press this button to see more available function like searching item or generating a report (page 13-17)

Login

For using most of the functions you need to log in. Only tag information you can get without being logged in. You will be asked automatically to log in if it's necessary. (right image)

- 1. Enter user name:** Write your user name on the line where it's written „e.g. John Smith“. For doing that, just press on the particular line.
- 2. Enter password:** Write your password on the second line where it's written „*****“.
- 3. Login Button:** Confirm your login information by pressing the Login button. If you see the red writing „Failed! Try again!“ you have entered the wrong login information or you are not connected to the internet. Try it again or connect to the internet.



Basic Information and Symbols

It's time to clarify some oft he symbols that are often used in the app and this manual.



try again!



Scan Symbol: Is shown whenever the user should scan the NFC-tag of an item.

Try again! Symbol: Indicates that there occured a problem while scanning the tag. You have to scan again the particular tag.

Success! Symbol: Whenever an action is successful you will get to the start page and you this symbol appears for a while.

Loading Symbol: Every time the app is loading you will see this spinning circle. Please be patient!

Login/Logout Symbol: This symbol is on the start page. Push it in order to log in or log out. Open lock: logged in, closed lock: logged out

Scrolling: This symbol is used in the manual to indicate that a page is scrollable with your finger.

Show an Item: Inside the whole application (except when the scan symbol is shown), you can hold your device over an NFC tag and you will see an overview of the item that you have scanned as shown in the right image.



Lend Item

1. **Lend Item Button:** First you have to press Lend Item button on the start page. If you're not yet logged in you have to log in first. Afterwards you will see the screen as shown in the right image.
2. **Insert Name:** Write the name of the person that wants to borrow the item on the line where it's written „e.g. John Smith“.
3. **Set new Holder Button:** Confirm the entered name by pressing the Set new Holder button.
4. **Scan tag or insert item ID:** After having confirmed the name you will see the scan screen (right image) If it's possible you should scan the NFC-tag now, if not you can write the ID of the item on the line where it's written “e.g. csg-1234” and confirm it by pressing the OK button.

Return Item

1. **Return Item Button:** Press this button on the start page. Eventually you have to log in first. If you're already logged in you will see the scan screen (right image)
2. **Scan tag or insert item ID:** The scan screen works the same as described above. (see Lend Item, 4. point)



Add, Edit and Delete Item

After pressing the Manipulate Item button on the start page you see the manipulation screen. (left image) You have the following options there:

Edit Item: In order to edit an Item you can simply hold your device close to the NFC-tag or alternatively write the ID of the tag on the line where it's written „e.g. csg-1234“ and press the Edit Item button. With both possibilities you will get to the edit screen (image right). You can now edit all the fields of the form and when you're finish you have to scroll at the bottom of the form and press the OK button. You will see an overview of the item and you have to press the “Confirm”-Button to finish the edit action.

Add Item: This button opens the edit screen (right image) but now it's empty since it's a new item you want to add. You should fill out the form and scroll at the bottom and press the OK button. You will see now an overview of the newly added item and you have to scan the tag to confirm the action. After having scanned the tag you will see a message where the new ID of the item is shown.

Delete Item: With this button you can delete an Item. After having pressed that button you see the scan screen (right image, page 8). At this screen you can delet the item manually or with scanning. Scan the product whenever possible!

More about filling out the edit form see on page 15 the 3. Point.



More Optionen

You reach the More screen (left image) by pressing the more button on the start page. You have the following options:

Search Item: Here you can find an item in the database and edit it (see page 15)

Generate Report: This function gives you the possibility to generate a report out of several items that you can send as email afterwards. The report is in the CSV format which can be opened by almost every program (e.g. Microsoft Excel)

Help: By pressing this button you get to this manual. So whenever you have a question and you don't have this manual with you will find it there.

About: This button opens the about screen (right image) where you see the copyright information as well as an acknowledgement and the version number of the software.



Search and Edit Item

1. **More Button:** First you have to press the More button on the start page.
2. **Search Item Button:** On the appearing screen you have to press the Search Item button.
3. **Fill out the Form:** A form appears on the screen that you already know from the actions edit item und add item. You can fill out the form by pressing the particular line and enter the search term afterwards. You don't have to fill out the whole form and you can just enter parts of the word you are looking for. The search is also case insensitive. When pressing on a date field the Android Date Picker that you may know from other applications opens. Choose a date and press on OK in order to enter a date. For aborting or deleting a date press on Reset.
4. **Search Items Button:** If you have filled out all the desired fields oft the form you have to scroll at the bottom oft he screen and press the Search Items button. After you see the result screen (right image) where it's either written "No results!" or there is a list with all the found items.
5. **Press Edit:** If you want to edit one oft he found items you can simply press on the Edit that is written next to the item and you will get to the edit screen (right image, page 10) as described on page 11.



Generate Report

- More Button:** First you have to press the More button on the start page.
- Generate Report Button:** On the appearing screen you have to press the Generate Report button. Like that the generate report screen opens (left image)
- (Optional) Delete Report Items Button:** If there are already some items from the last time a report was generated in the list above the three buttons you can delete them by pressing this button.
- Add Item to Report Button:** Now, you can add different items to the report. For that you have to press the Add Item to Report button and the scan screen (right image, page 8) appears. You can scan the item or add the item manually in order to add it to the report.
- (Optional) Press Remove:** If you have added an item to the report by mistake you can delete it from the list by pressing on the Remove text next to the particular item.
- Generate Report Button:** After having added all the desired items to the list you have to press the Generate Report button. A selection menu appears where you can choose with which Email-App you want to send the Email.

Press the desired Email App and write the Email: Write the email as always with your email app. The report is automatically attached to the email.

Important Hint: Internet Connection

Some functions of the app require an internet connection to communicate with the server. For example search an item without internet is not possible. Also the generation of a report is not possible without connection. All other functions work without internet. However, you should connect as often as possible to the internet. Like that the app can send the latest information to the central server and like that all the data stays up to date.

Installation on your own Server

The following section is just for users, who run their own Server. For users who only use the app on their phone this section is irrelevant and can be skipped.

Set up the Server

Your server has to support PHP and you also need a MySQL database. After having installed these two requirements you have to add a new and empty database in your MySQL database. You don't need to create any tables inside this database. Moreover you have to install the LDAP support for PHP that is often not yet installed with the base installation. For more information about how to install PHP and MySQL visit www.php.net and www.mysql.de.

Configure Server

After having successfully set up the server you have to copy the PHP files from the srcphp folder in the sourcecode to a individually chosen direction on the server. Afterwards you have to set some information about your MySQL server in the db_install.php and db_conf.php file:

```
$server="localhost";  
$name="db_user_name";  
$password="db_user_password";  
$database="name_of_the_database";
```

After that you have to open a browser and access the file db_install.php in order to finish the server configuration.

Configure Client

To configure the client you have to change one line in the source code. Search and open the following file ch.uzh.csg.invenventory.config.Config.java and set the parameter BASE_URL to the direction on the server where you've located the PHP files before.

Personal Notes

Installation notes from Dr. Thomas Bocek

- copy php files to server
- create MySQL database
- add DNS entry to majestix
- add proxy rule to httpd.conf in asterix
- add site to csg-website-vm
- adapt config file db_conf.php
- execute db_install.php
- changed Conf.java in the Android project