JOINT PROGRAMMING INITIATIVE – A HEALTHY DIET FOR A HEALTHY LIFE EUROPEAN NUTRITION PHENOTYPE ASSESSMENT AND DATA SHARING INITIATIVE

PROJECT DELIVERABLE REPORT

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** Type: R – *Report*; P – *Prototype*; D – *Demonstrator*; - O - *Other*

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INTRODUCTION

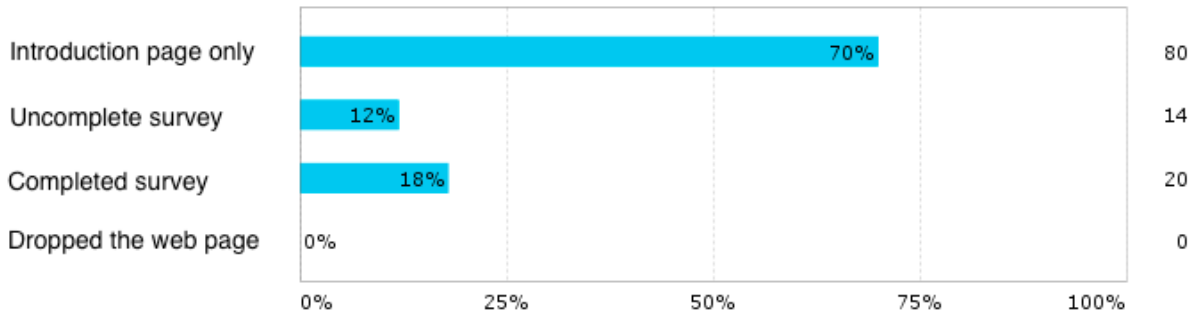
This task has executed a survey of the designed interface of the common access point to the infrastructure. The focus of the design and the user survey actions was on usability and easiness of use for the end-user.

Initial plan didn't match with project-wide availability of resources. This survey is based on the interfaces of the Phenotype database (dbNP), the BioShare OPAL DataShield tools, in the scope of this consortium and the initial part of this federated analysis. Moreover, the newly developed extensions were tested. Brand new design and implementation of the value-added DASH-IN visual analytical platform was conducted (T3.2, T3.5) and surveyed.

A first survey call was launched from the 30th of November to the 31st December 2016 with a reminder sent on the 19th of December 2016. Survey data was collected from the system on 16th January 2017 (which was left accessible all the time). A total of 21 surveys were taken (counted as those that had entered at least the email addresses). Two persons, identified by email address, took the survey twice, therefore a total of 19 unique people took the survey.

Due to some requests the survey, on January 31st 2017 the survey was extended until the 15th of February 2017. The system was left accessible until the 27th of February 2017 when survey data was collected. Seven more answers were provided by the partners (counted as a partner who at least entered the email address), two of which already took the survey during the first session. Therefore, finally a total of 24 unique people answered the survey for a total of 28 times.

Globally the first introduction survey page was visited 114 times. In 70% of the cases the user took no further action, while in 12% of the cases some pages were went through but without finishing and 18% (exactly 20 survey answers, possibly provided by fewer than 20 people) of the persons completed the entire survey. No one was dropped out of the web pages.



Given the heterogeneous background of the partners, the survey aimed at assessing whether:

- The systems have been used at all.
- How easy is perceived the instructed visual process (which of course depends on whether the person has actually used it or is just looking at the pictures).

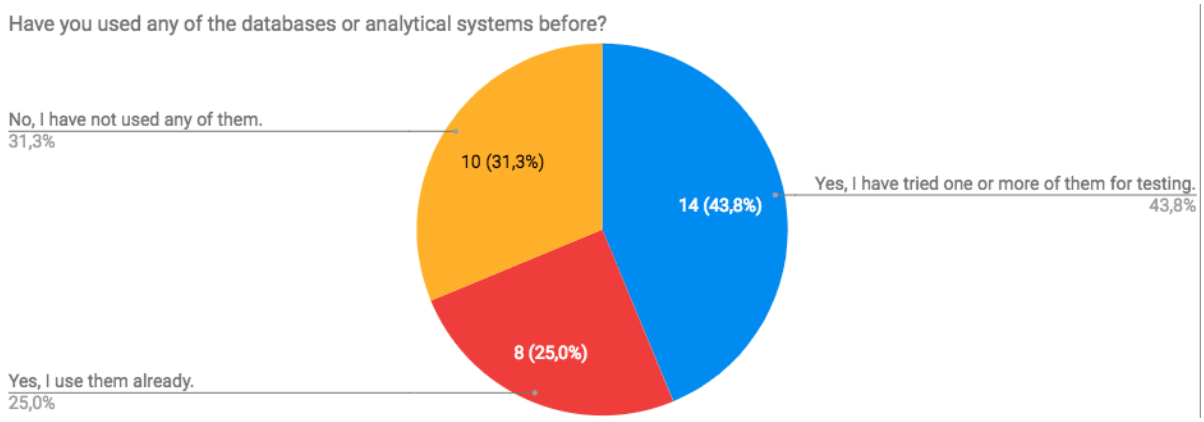
- The user has suggestions for improvements.

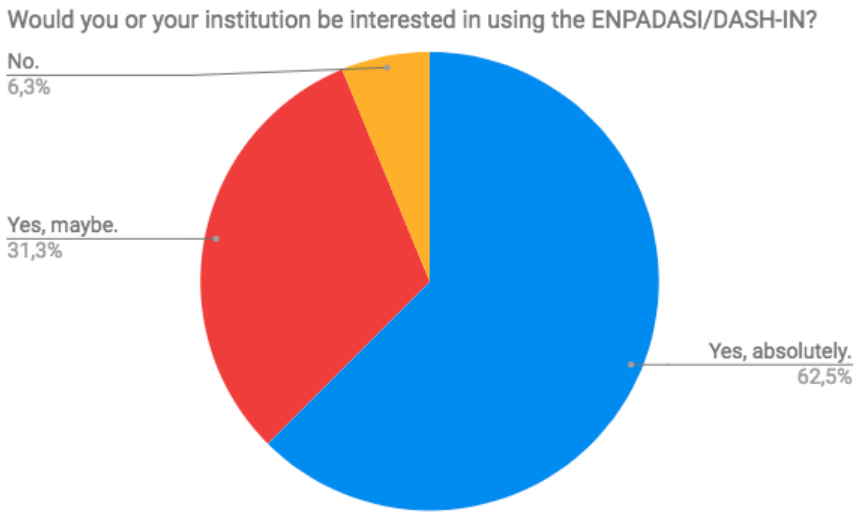
Each surveyed section is reported in this document with all the screenshots and texts along with the statistics of responders. Overall it is noticeable a quite high rate of responders who answered the survey without trying at all the system or started trying it without actually completing the real session.

All survey data described in the remaining is relative to the overall answers globally provided during the two survey sessions.

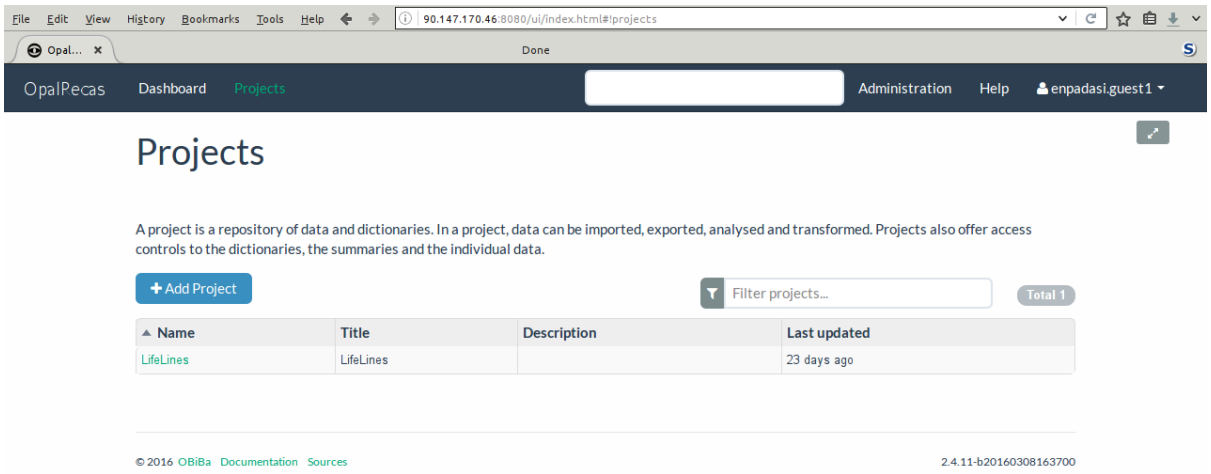
RESULTS OF THE SURVEY

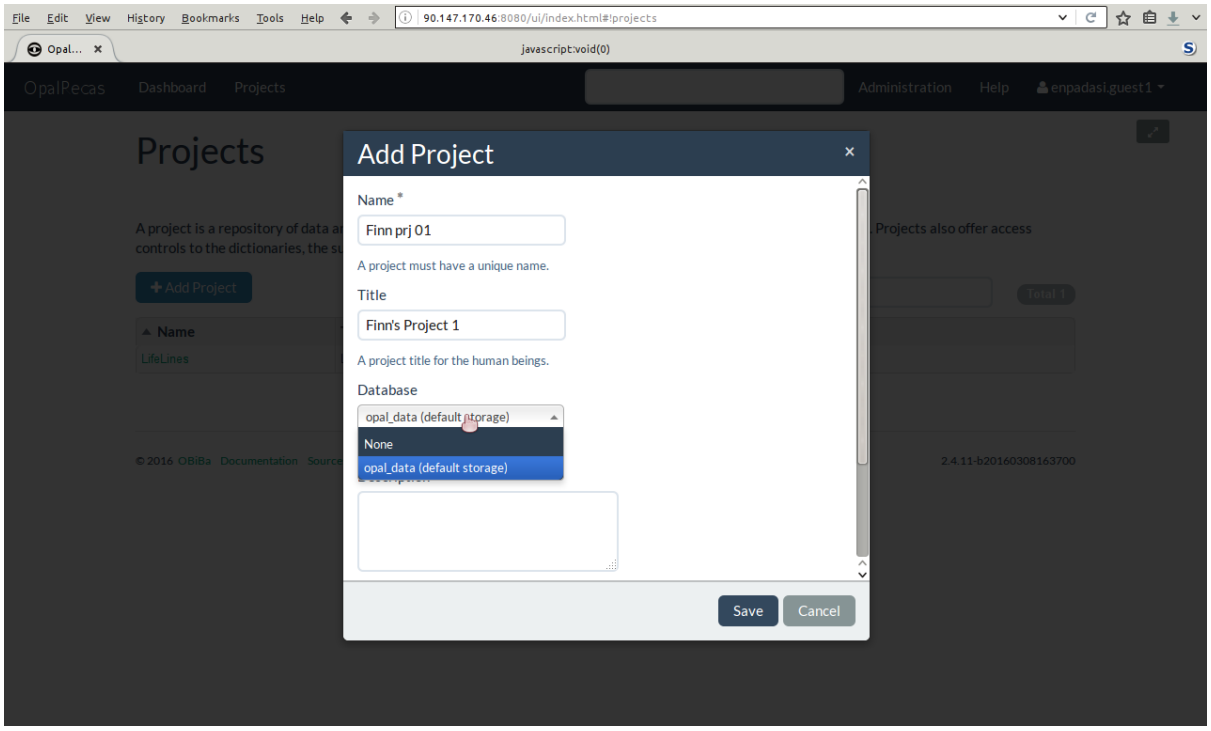
See below a representation of the survey and the analysis of the responses.





OPAL – ADD A NEW PROJECT





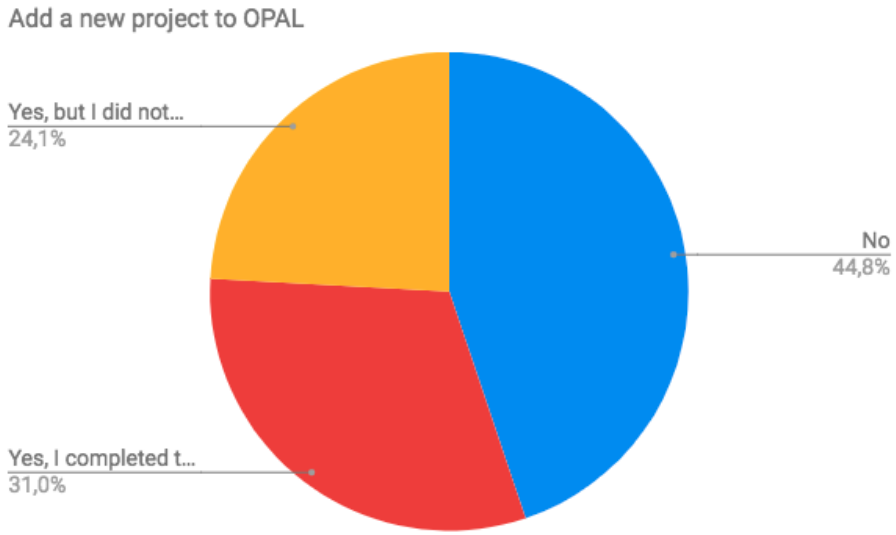
These images show part of the process to add a new project to OPAL

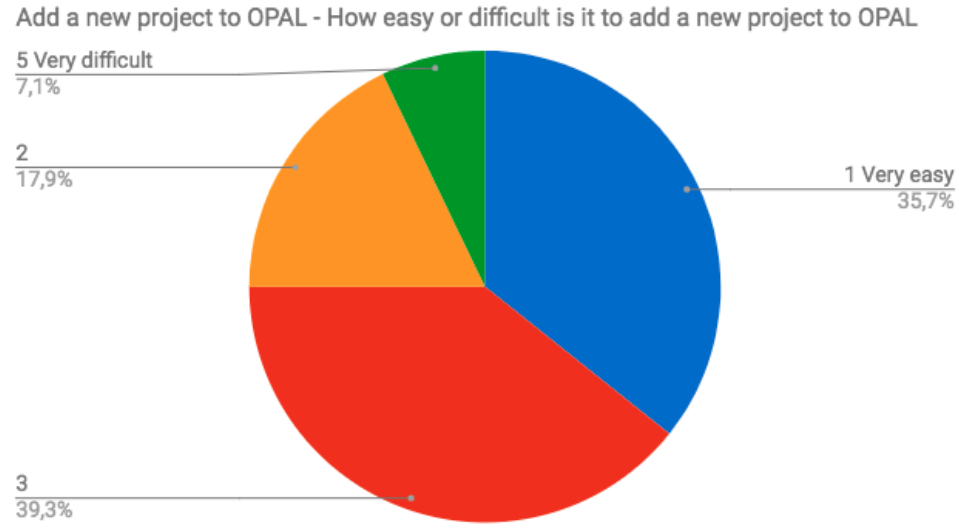
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

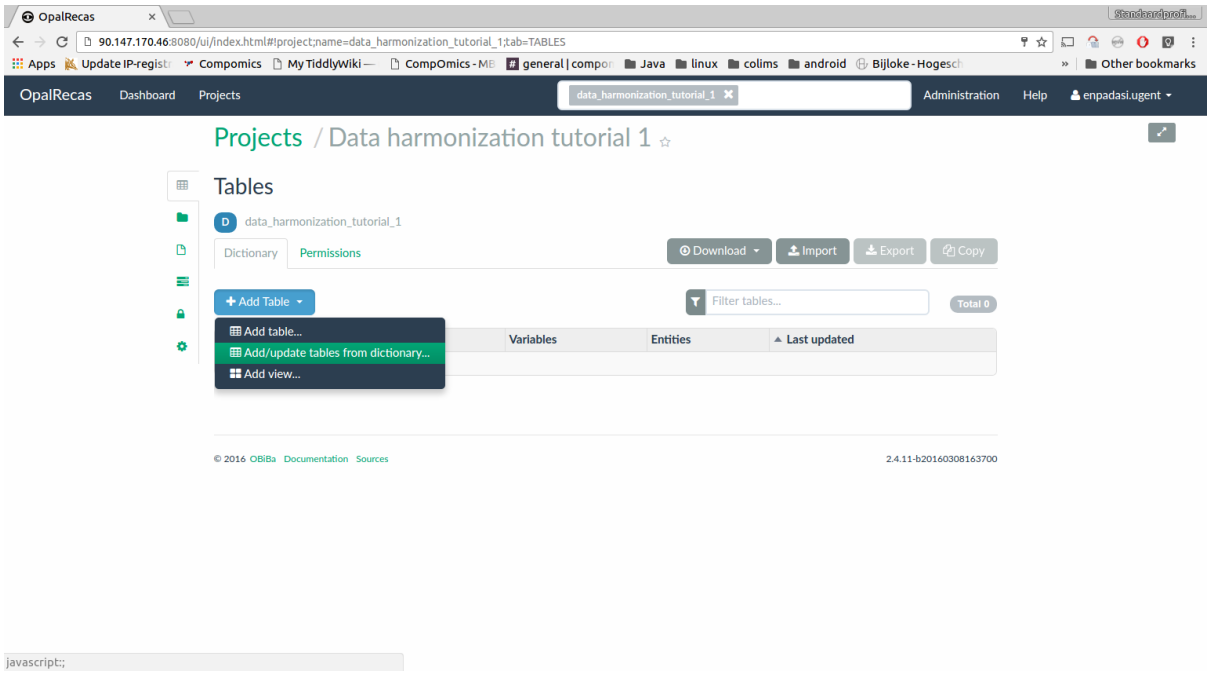
How easy or difficult is it to add a new project to OPAL

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

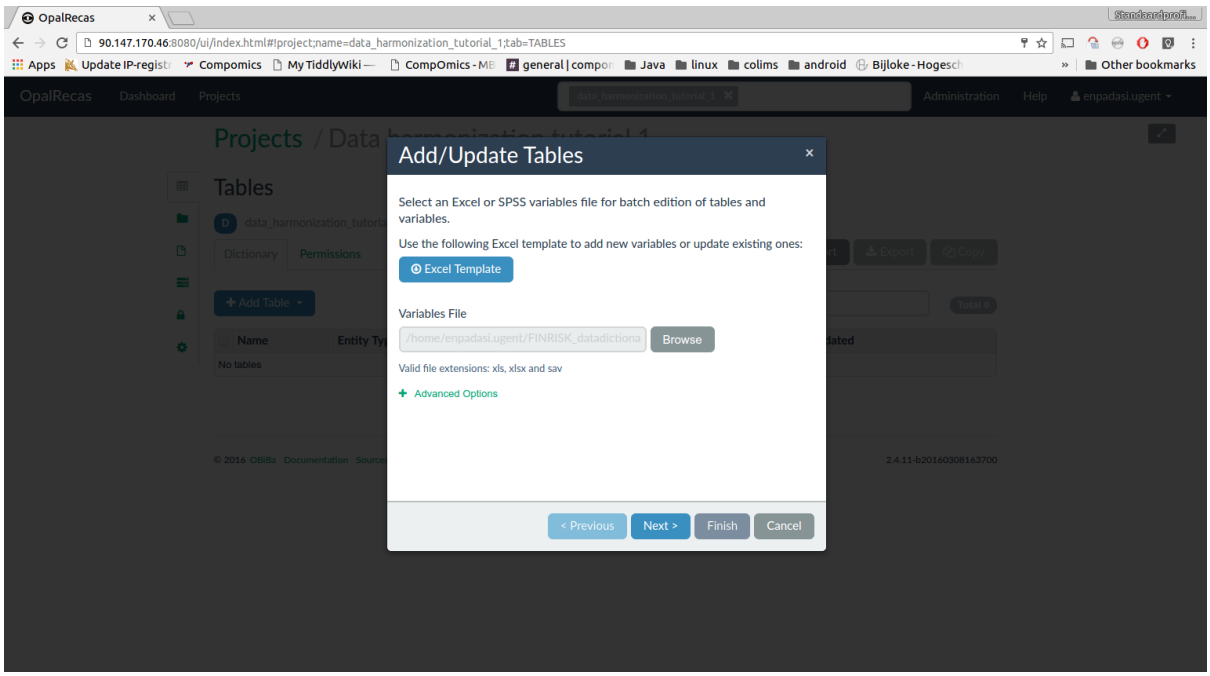




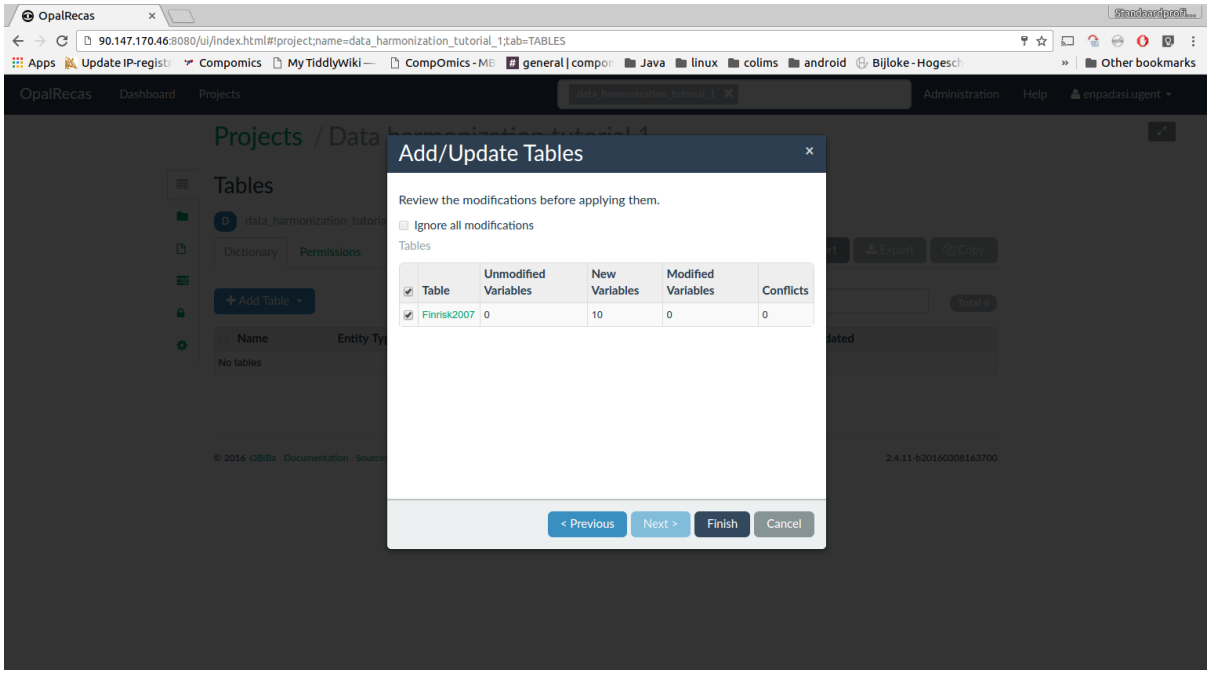
OPAL - ADD TABLE DICTIONARY



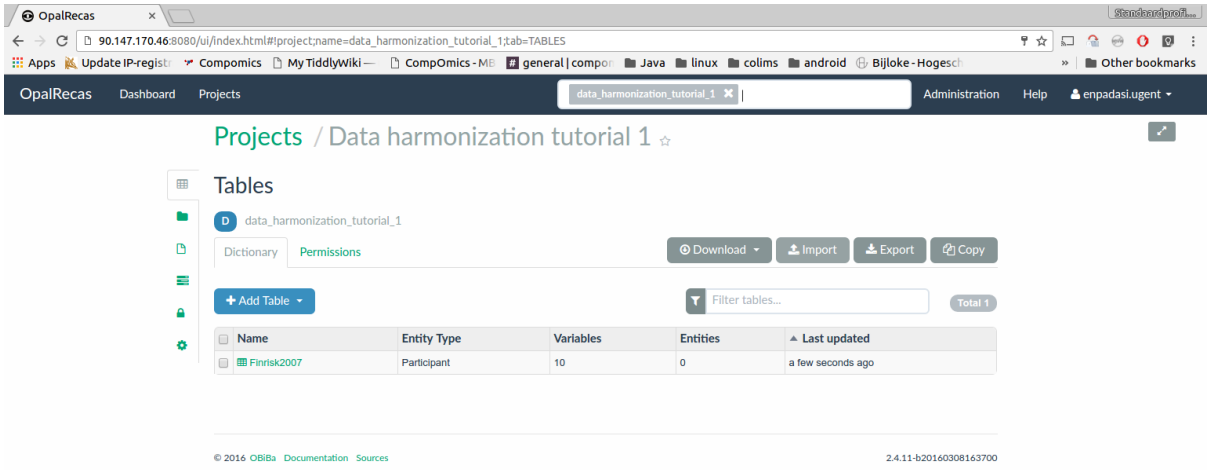
Before uploading table data in .csv format, a data dictionary needs to be added. In case of data in .sav format, both the data dictionary and the data are included in the same file.



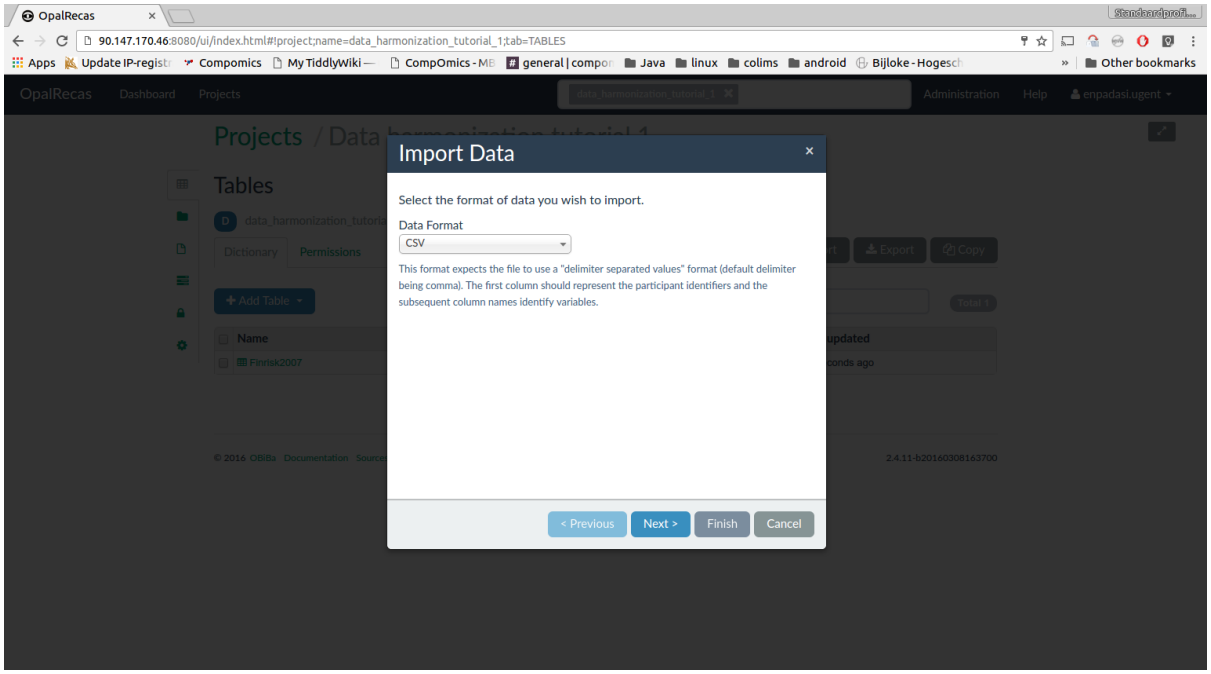
After uploading the data dictionary to the Opal server, the user can select it (.xls, .xlsx and .sav are supported).



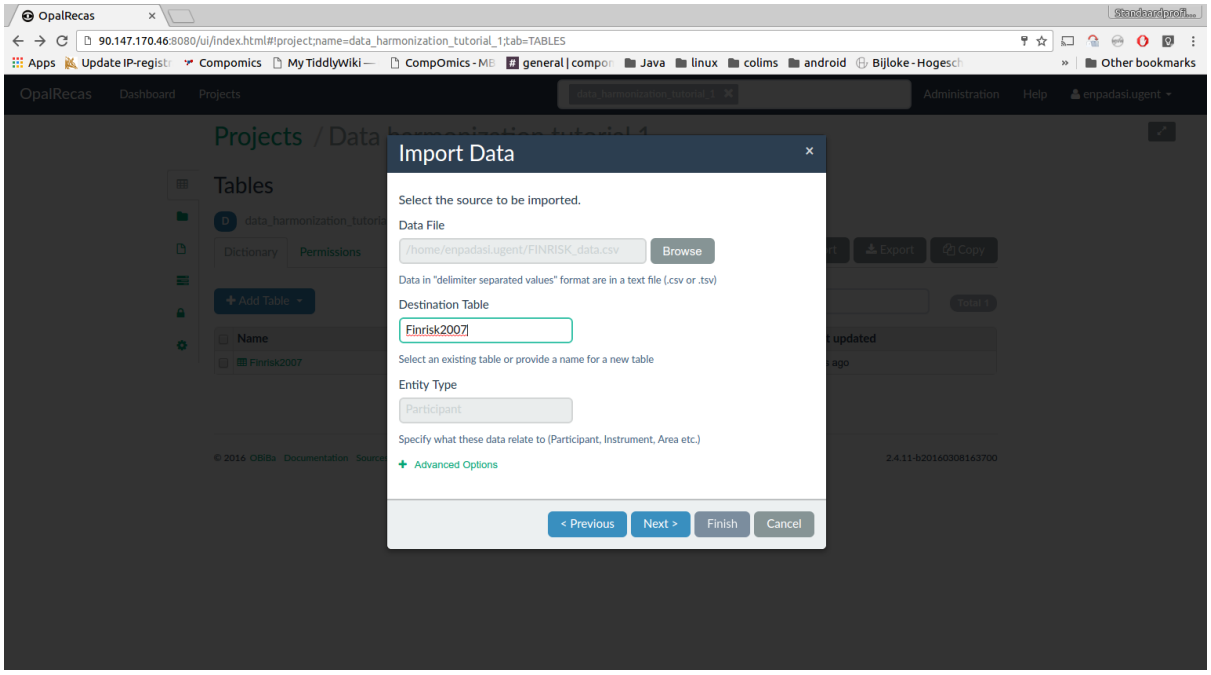
Select the table of interest and click on the "Finish" button.



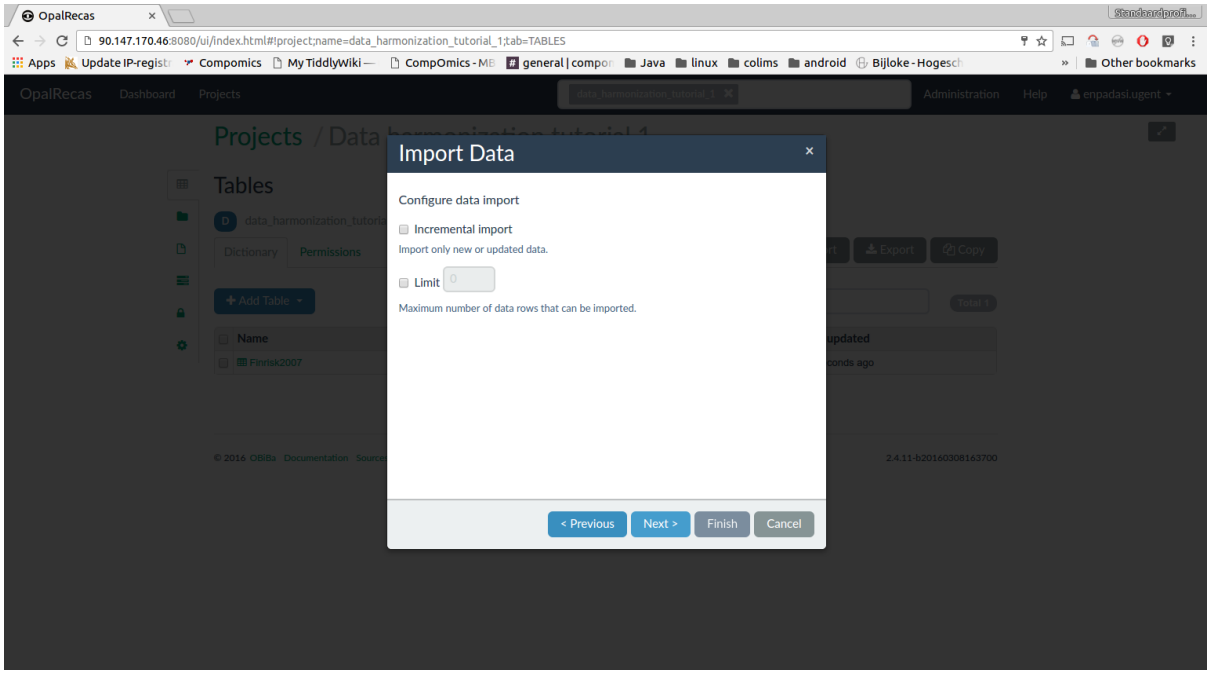
Once the data dictionary has been added, click on the "Import" button to import the table data.



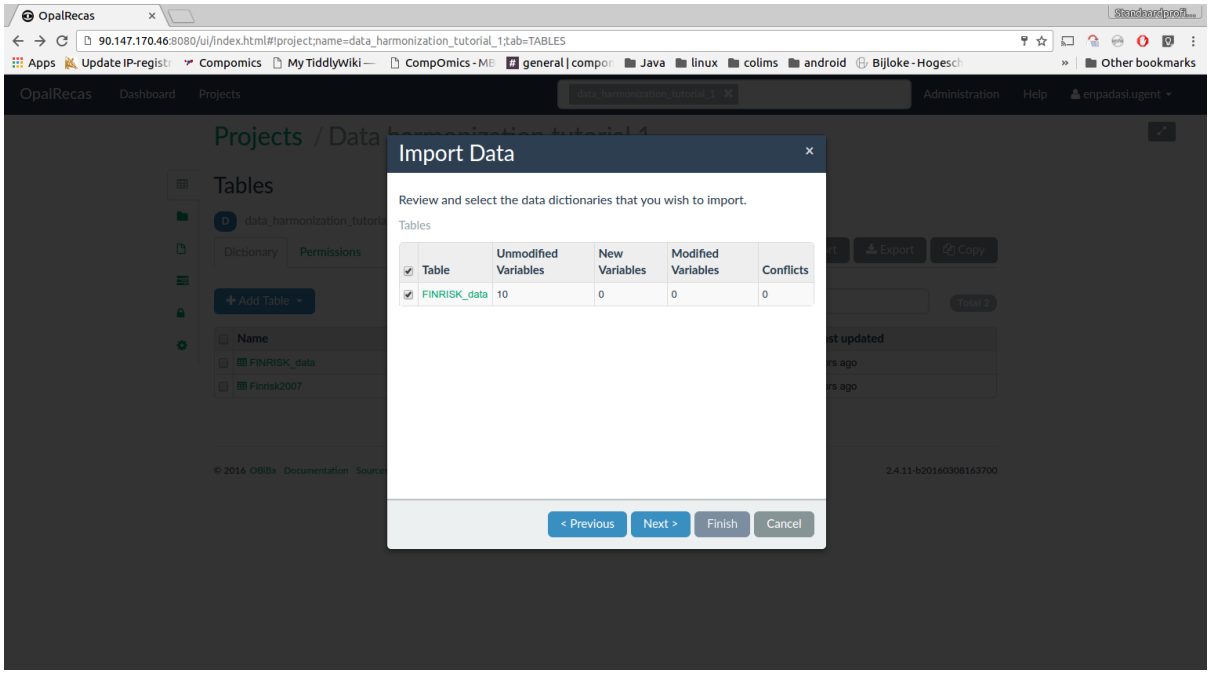
Leave the default "CSV" setting and click on the "Next" button.



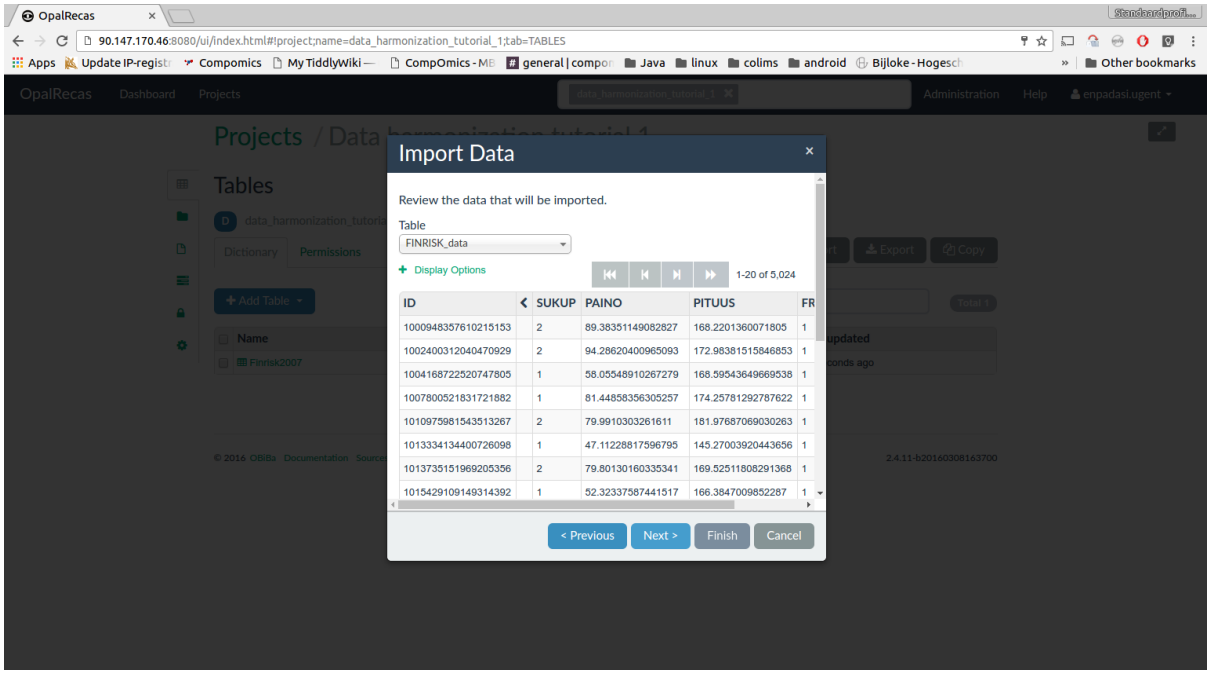
Select the data file and the destination table and click on the "Next" button.



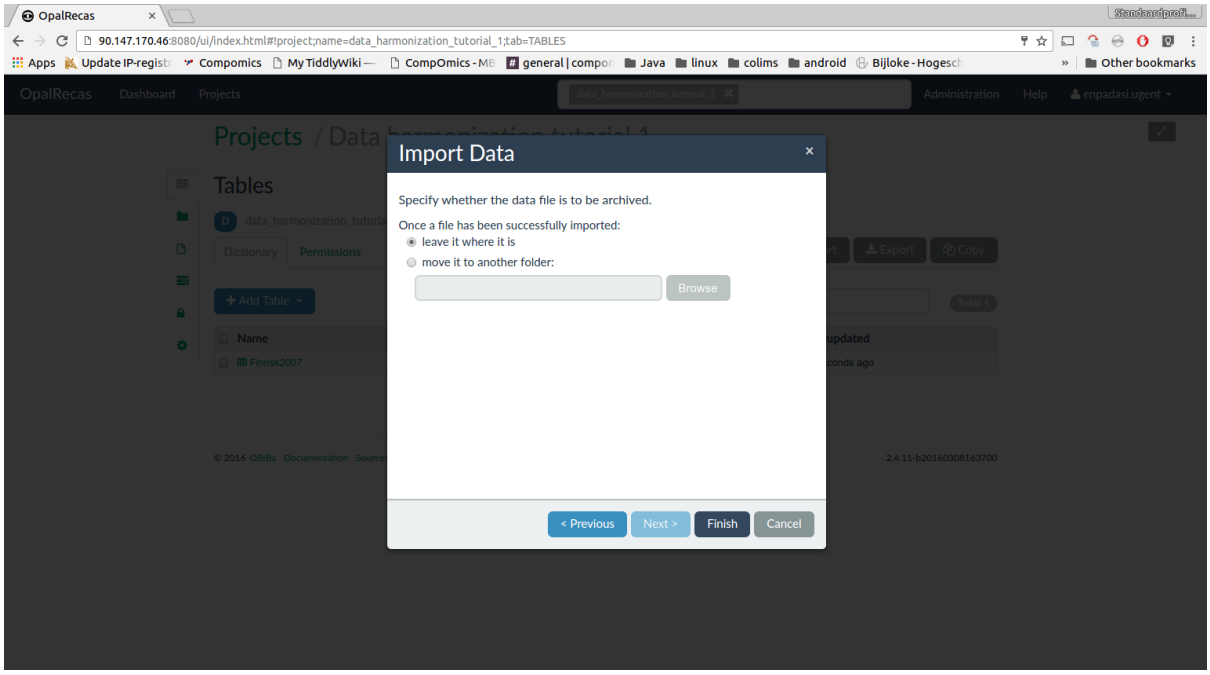
Keep the default settings and click on the "Next" button.



Select the appropriate table and click on the "Next" button.



Click on the "Next" button.



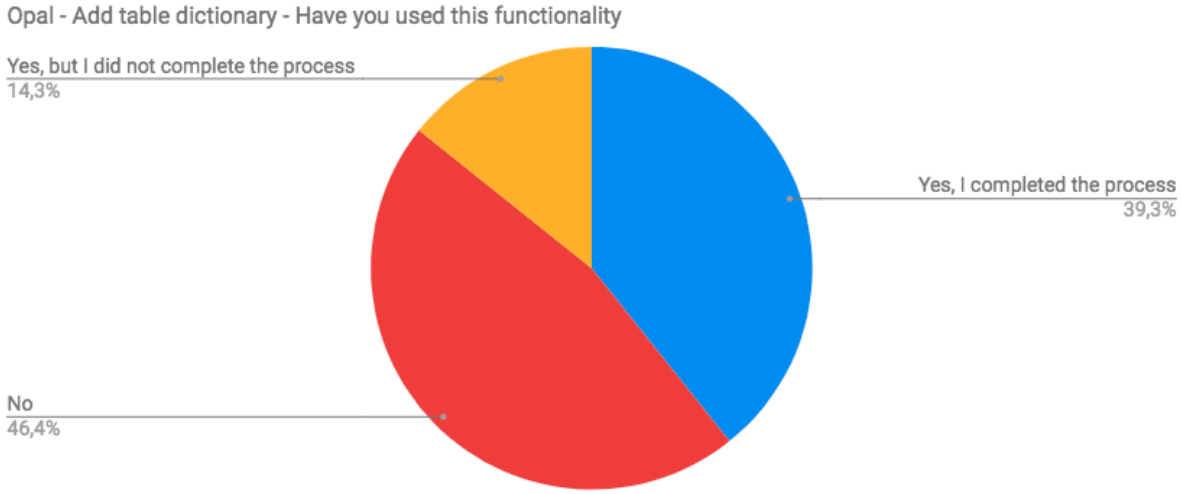
Click on the "Finish" button.

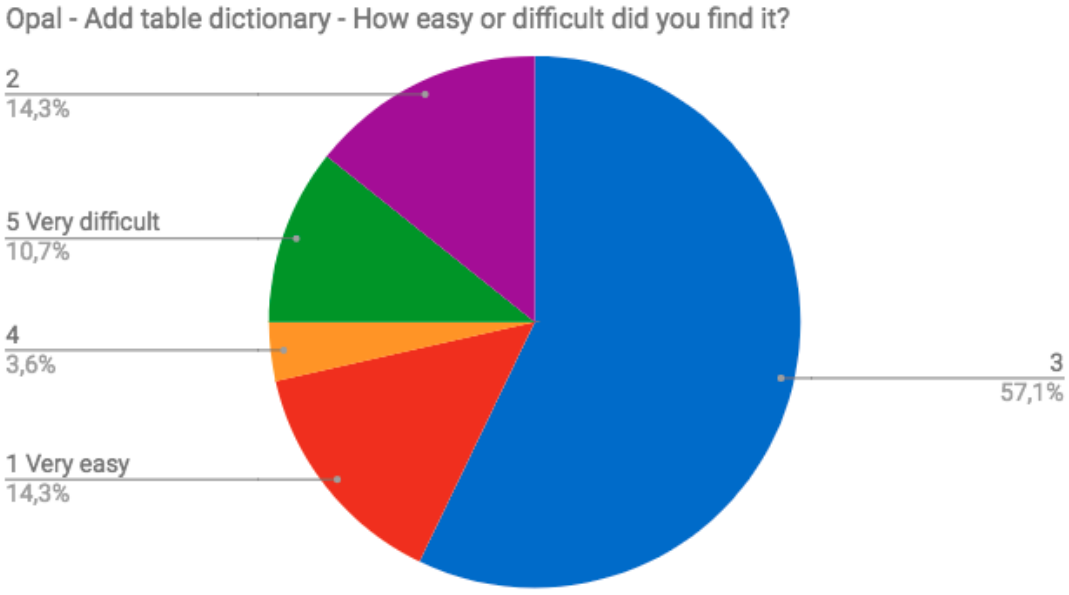
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

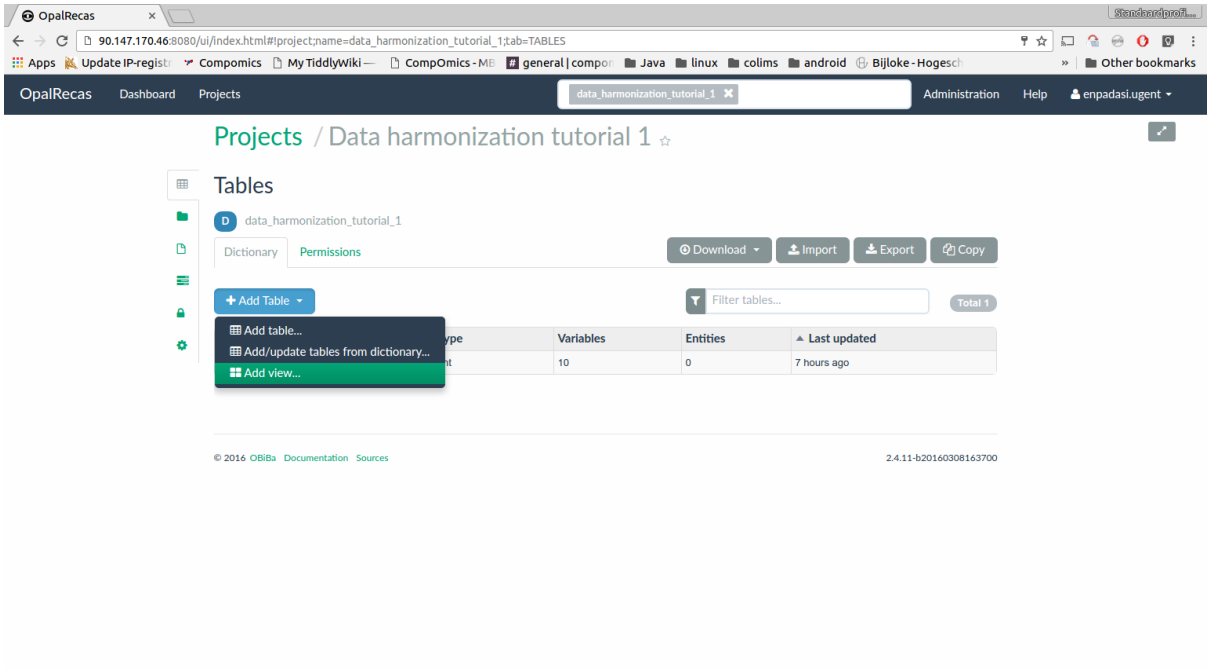
How easy or difficult is it to add a table dictionary in OPAL?

- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult

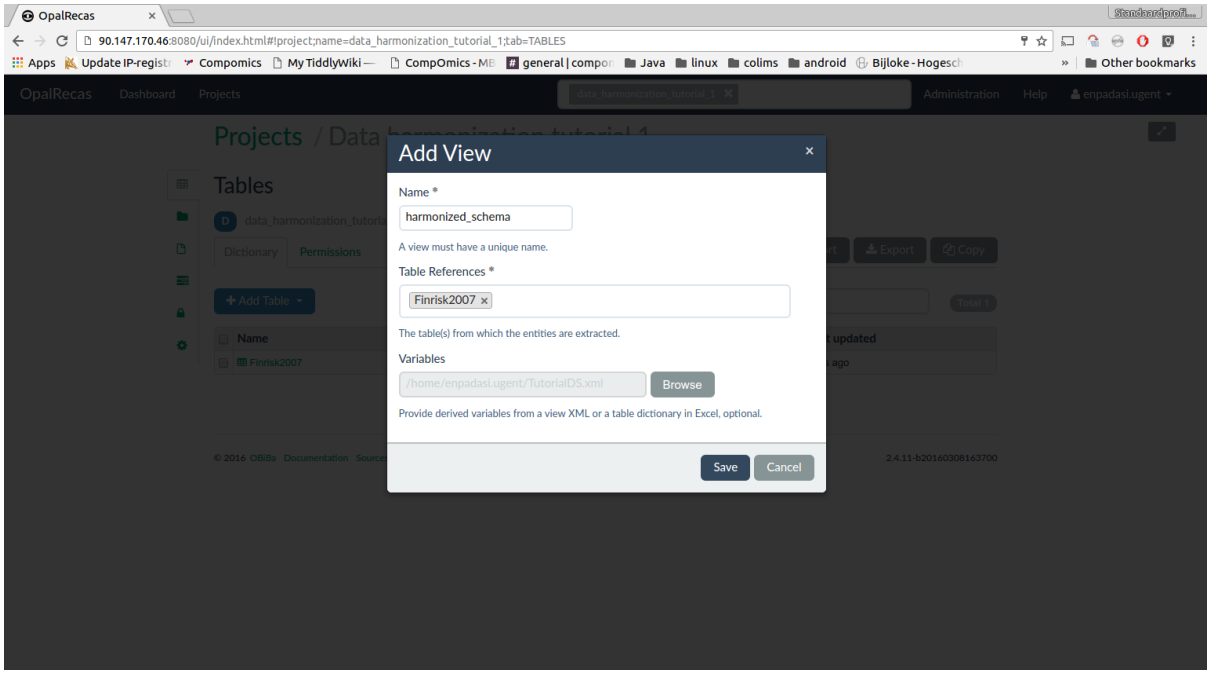




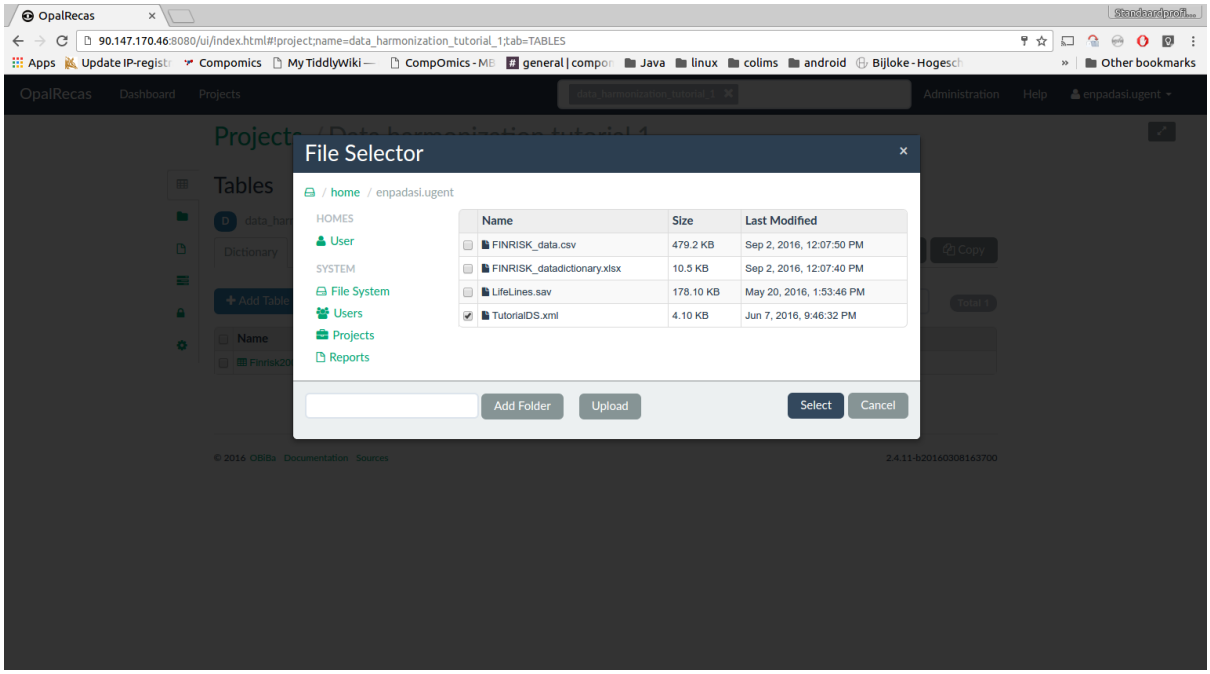
OPAL - ADD HARMONIZED SCHEMA



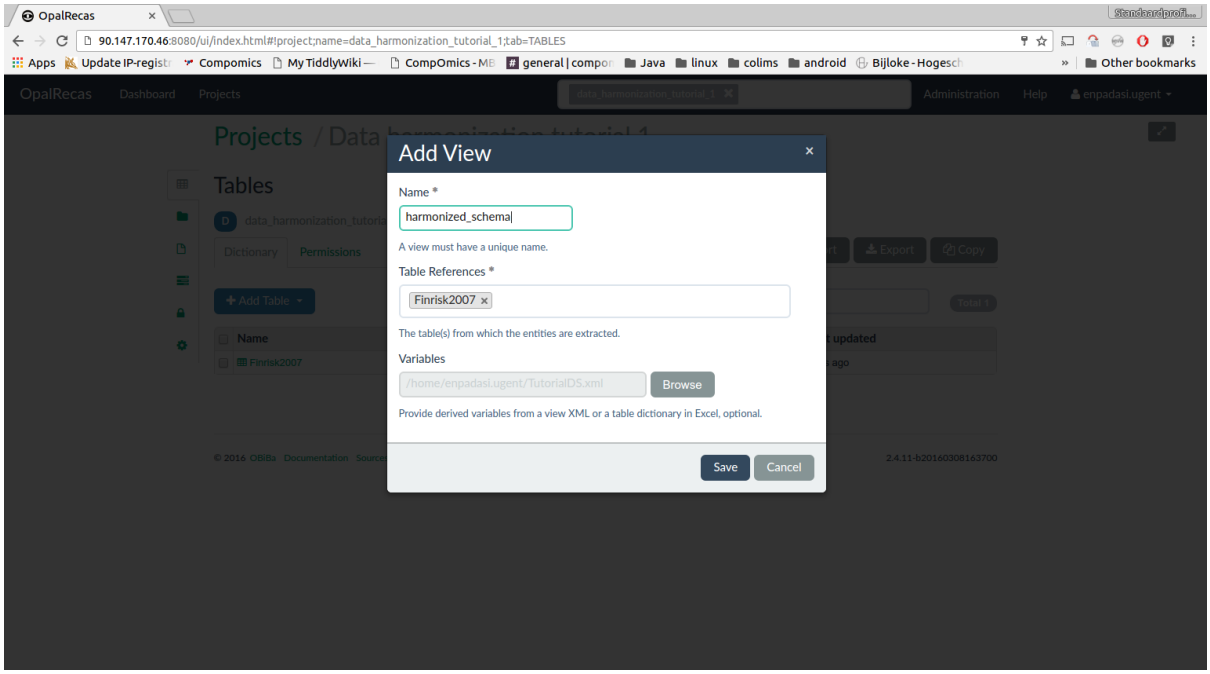
Click on the "Add table" button and select "Add view...".



Select the previously added data table in the "Table References" field. Click on the "Browse" button next to the "Variables" field for selecting the harmonized variables.



Upload the harmonized variables in view XML format or table dictionary Excel format and the select it.



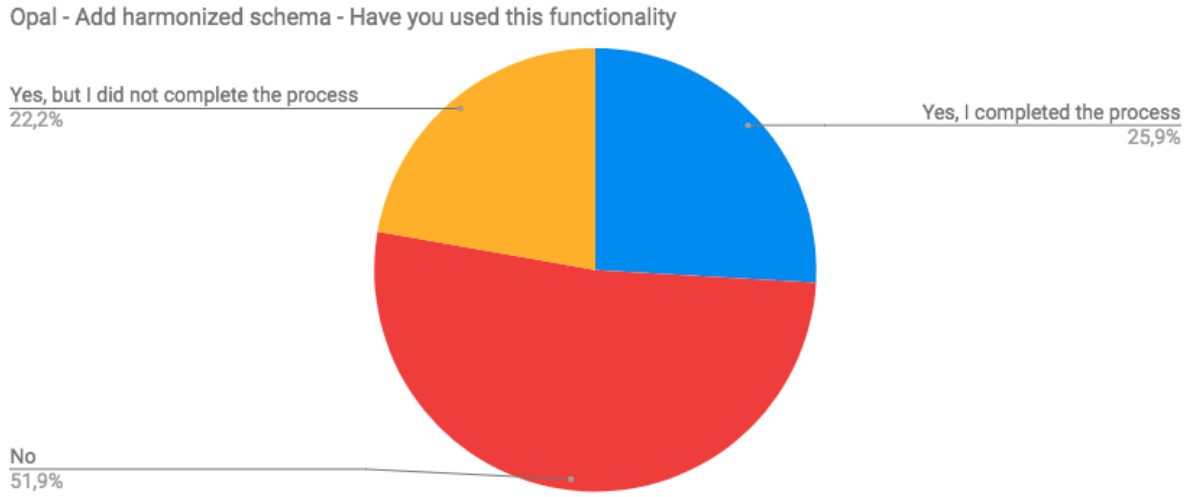
Click on the "Save" button to add the harmonized view.

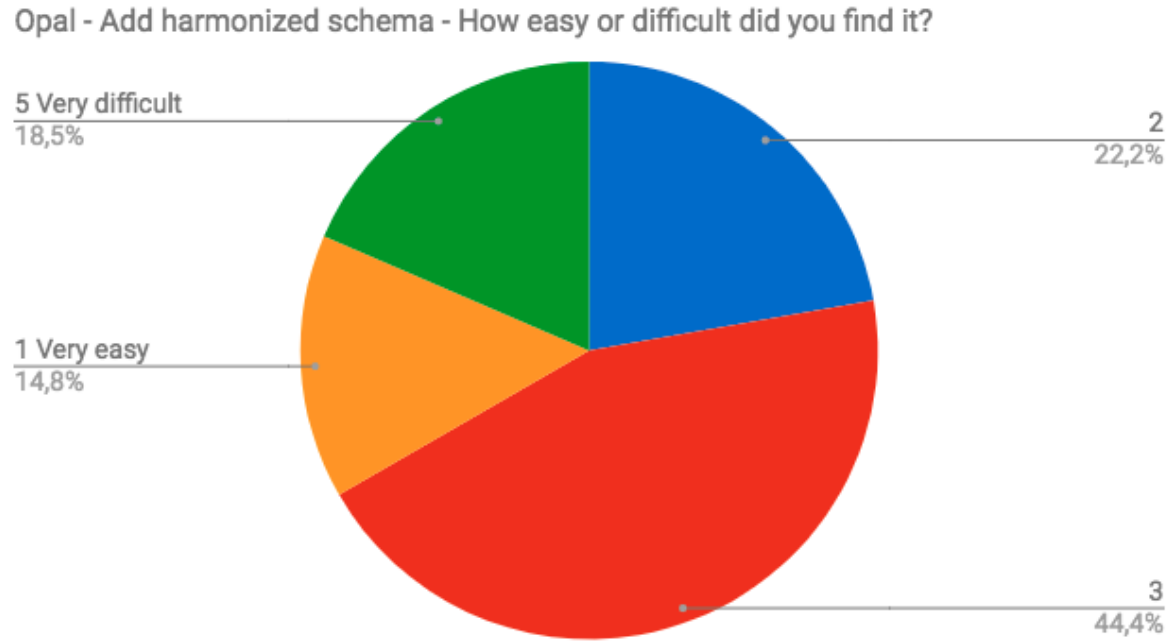
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

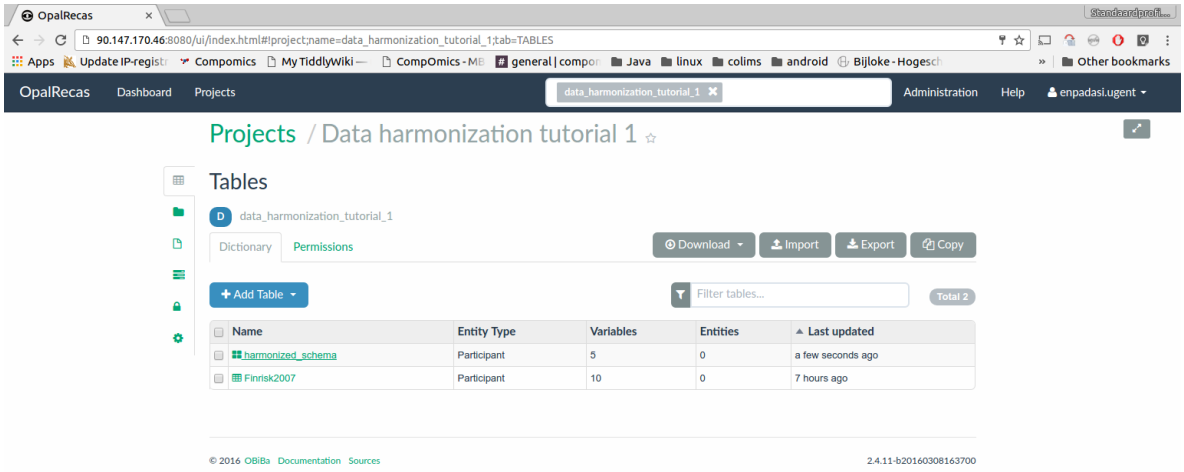
How easy or difficult is it to add a harmonized schema in OPAL?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

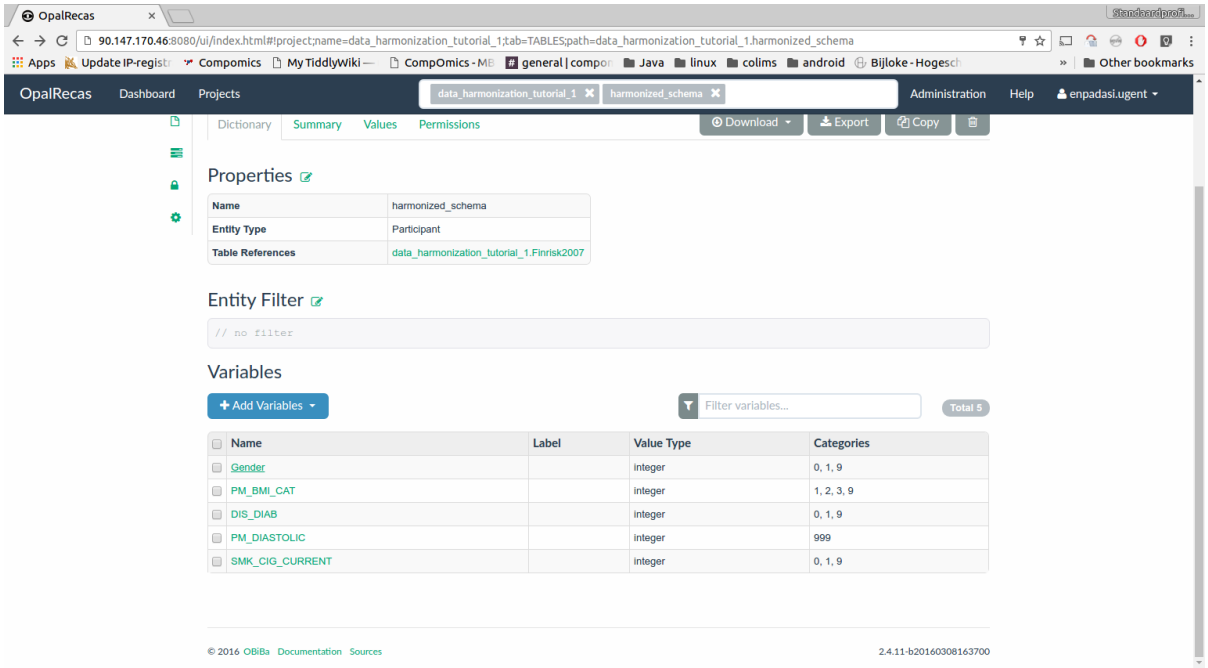




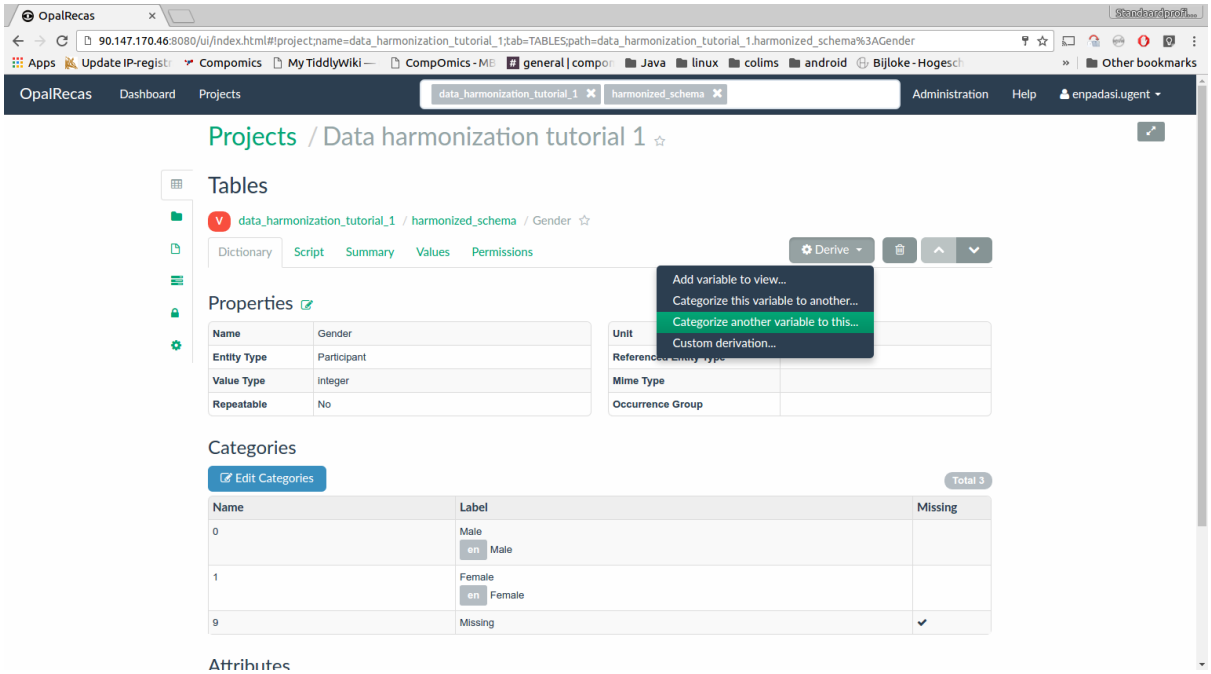
OPAL - VARIABLE HARMONIZATION - ADVANCED



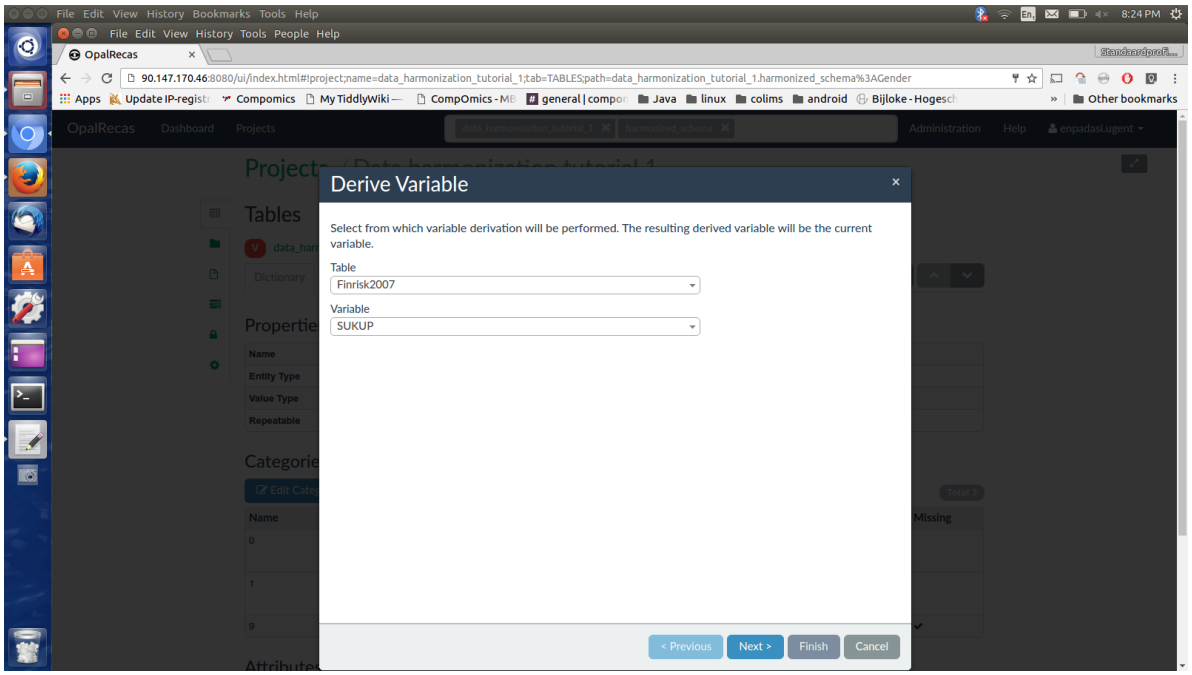
Click on the "Save" button to add the harmonized view.



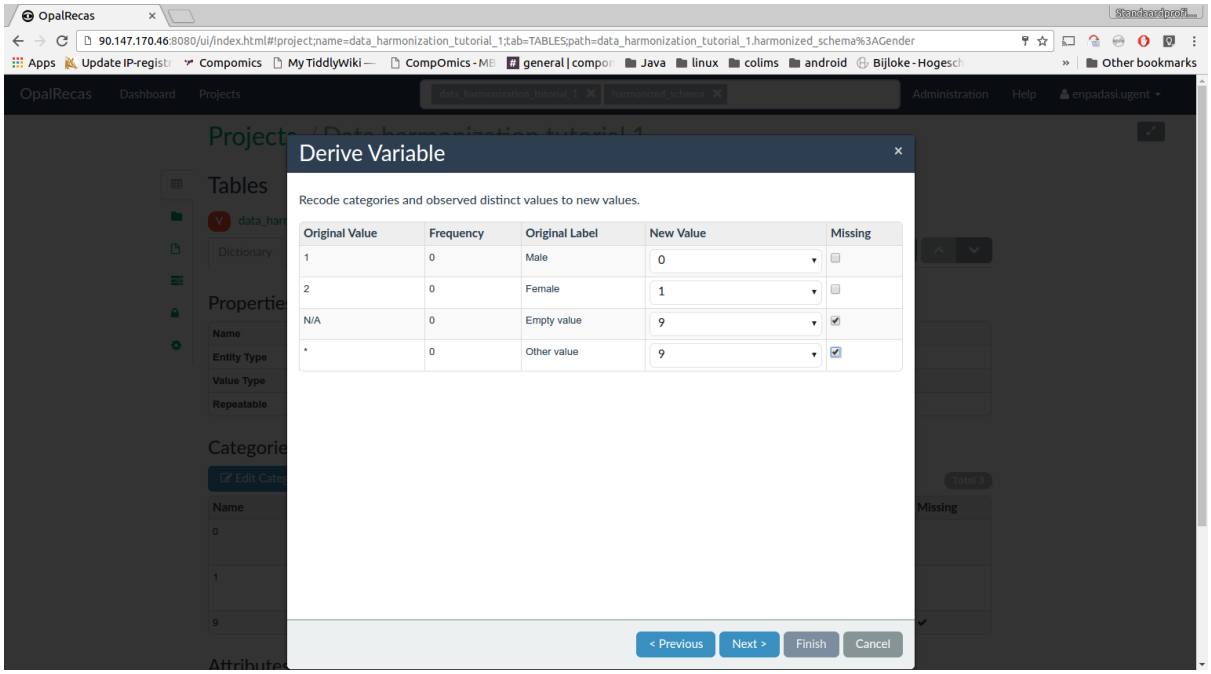
Click on the "Gender" variable. It will be used as an example of an "easy" variable to harmonize.



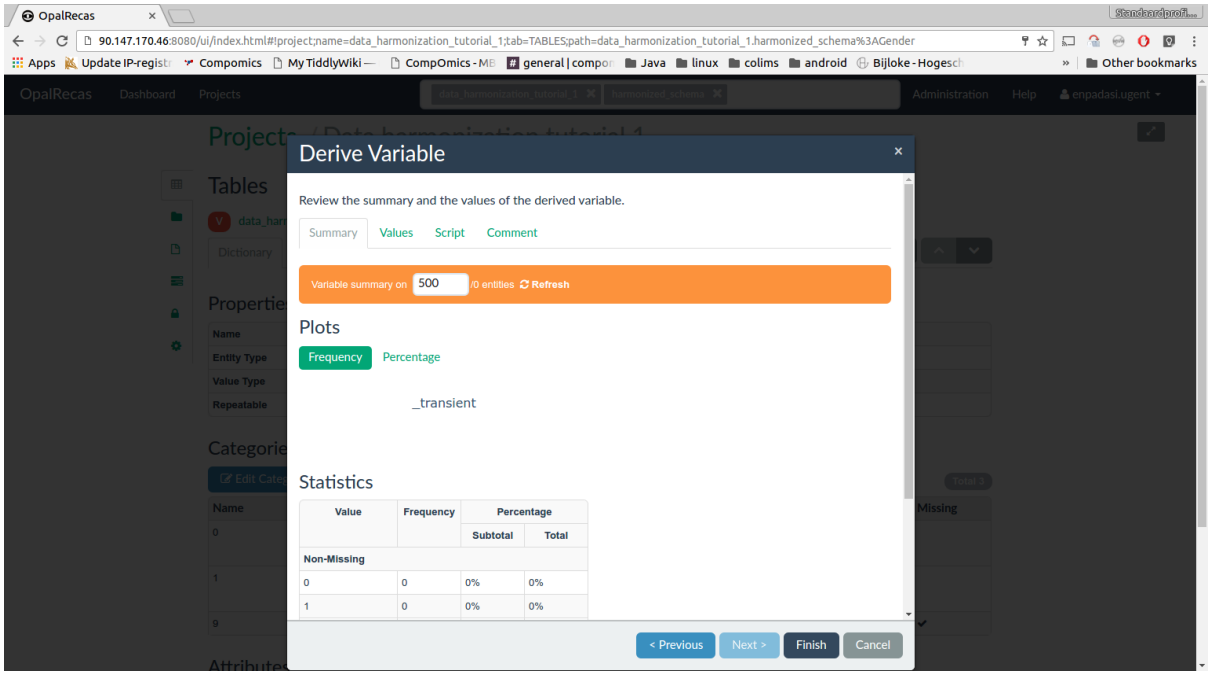
Click on the "Derive" button and select "Categorize another variable to this...".



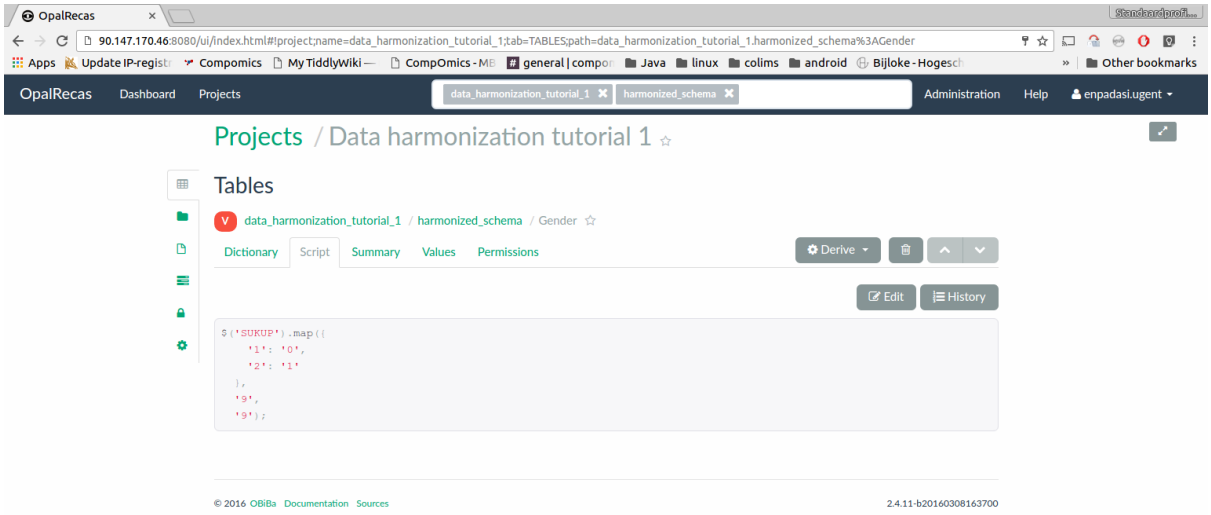
Select the "Finrisk2007" table and the "SUKUP" variable.



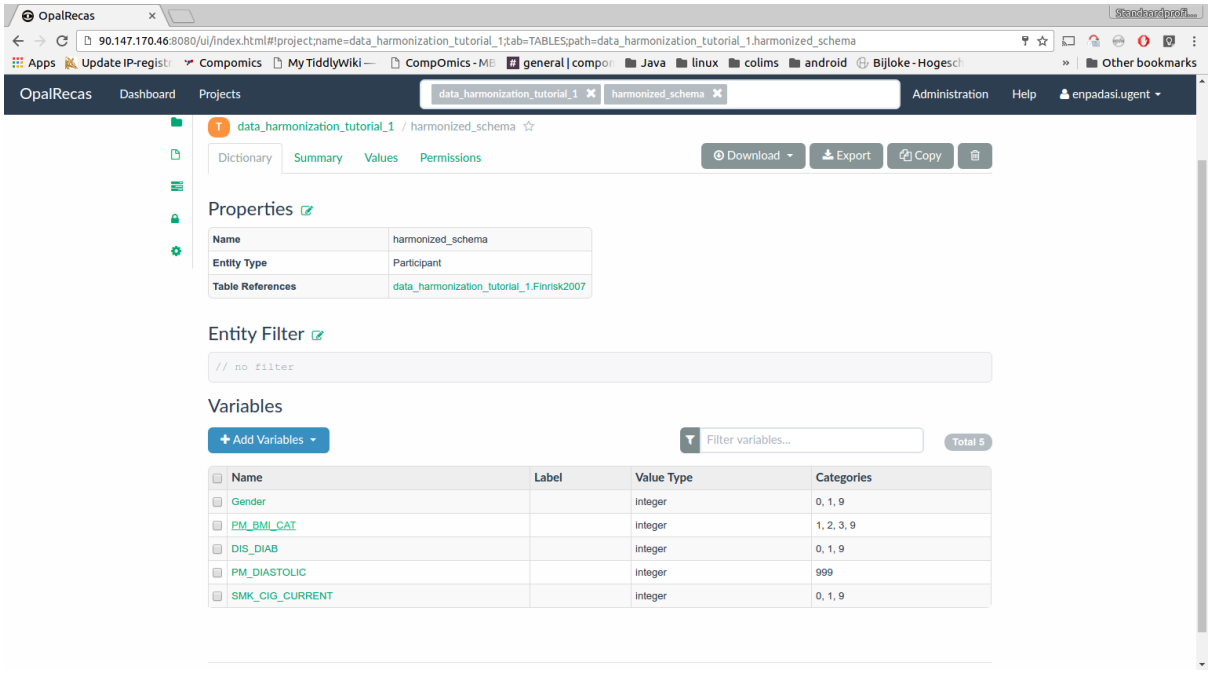
Give each original value a new value in the "New Value" column using the drop-down boxes. Click on the "Next" button to review the variable derivation.



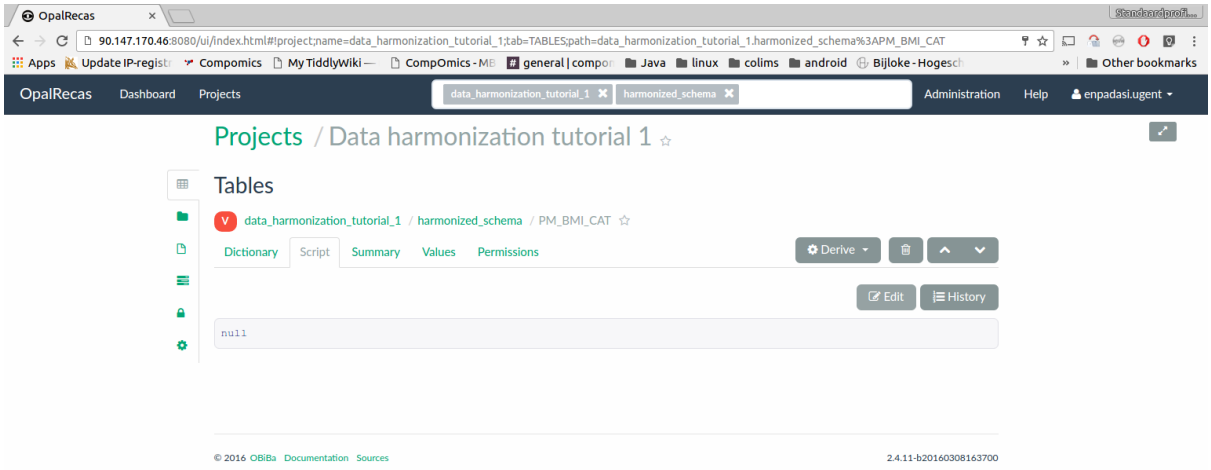
Click on the "Finish" button to finalize the harmonization of the "Gender" variable.



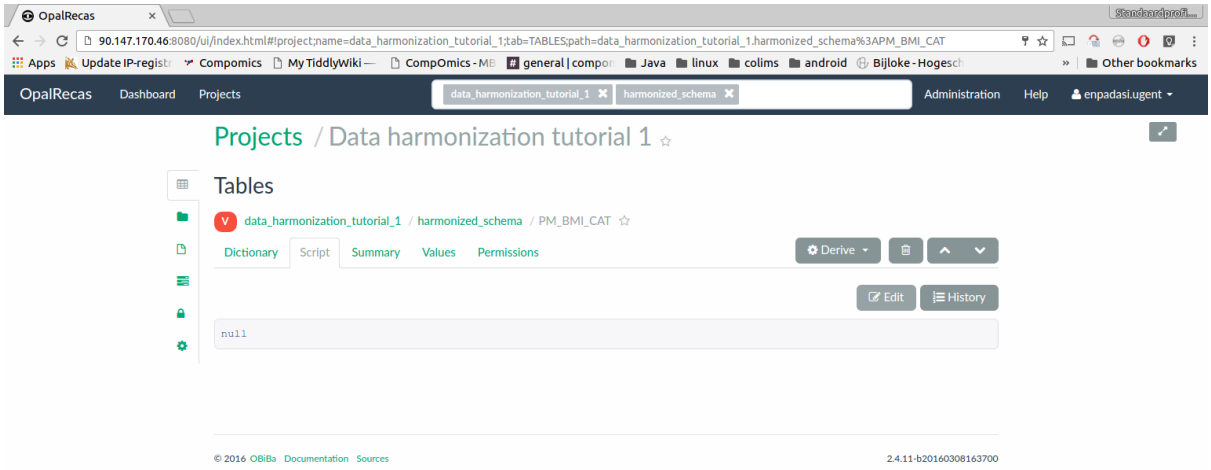
Click the "Script" tab of the "Gender" variable to see the generated harmonization script.



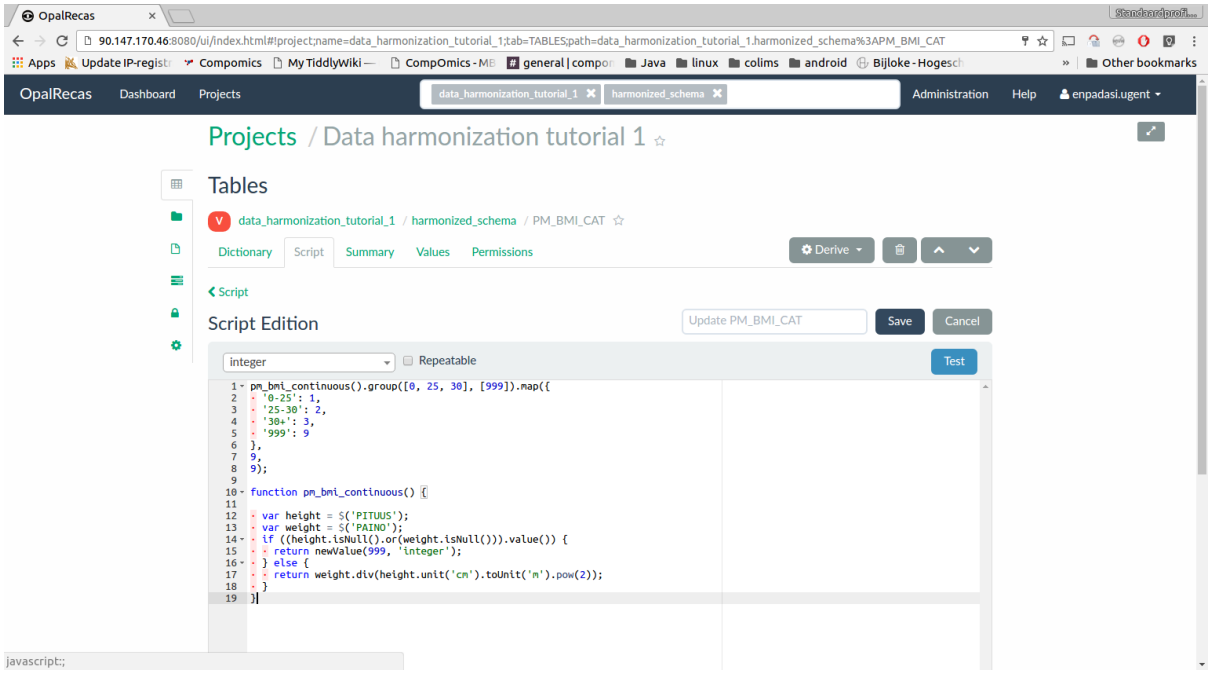
Click on the "PM_BMI_CAT" variable (Body Mass Index). It will be used as an example of a more complex transformation.



Click on the "PM_BMI_CAT" variable (Body Mass Index). It will be used as an example of a more complex transformation.



After selecting the "Script" tab, click on the "Edit" button.



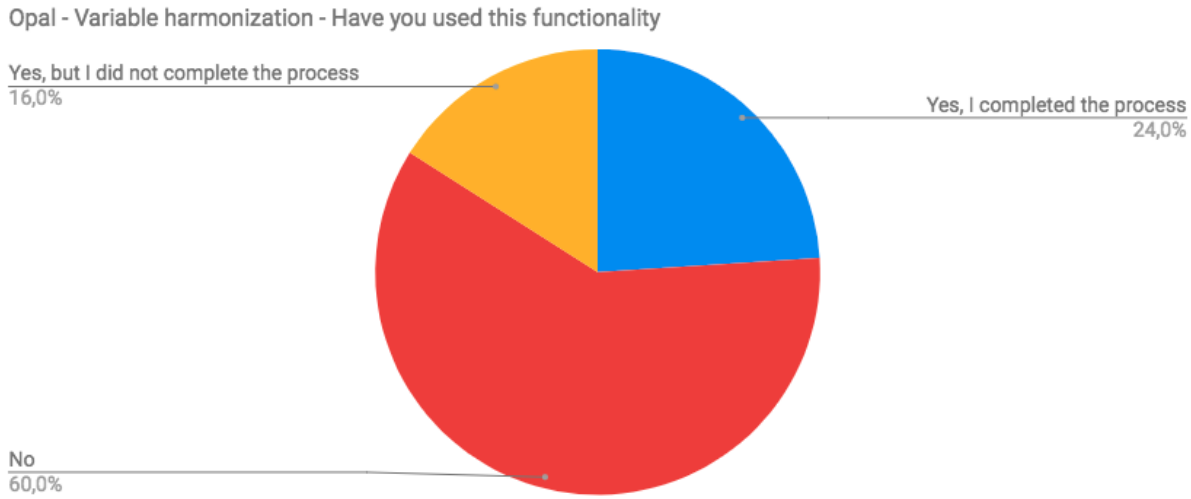
Copy the transformation script for the "PM_BMI_CAT" variable from the "Tutorial_Algorithms.doc" file, paste it into the script editor and click on the "Save" button. Do the same thing for the remaining variables.

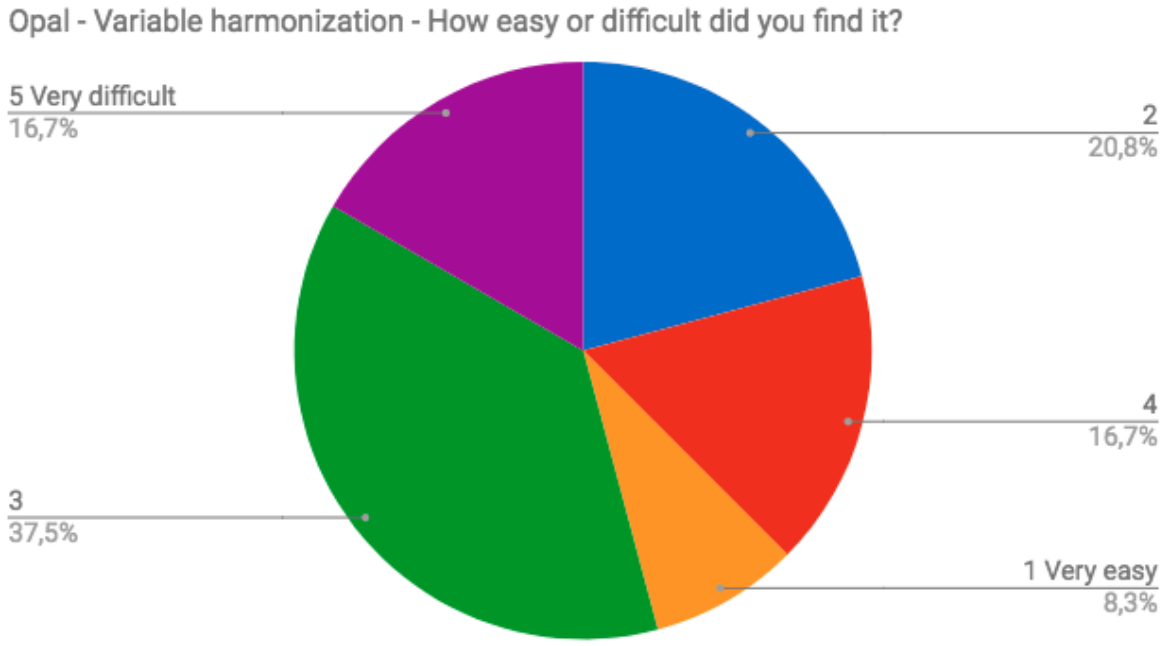
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

How easy or difficult is it to harmonize variables in OPAL?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult



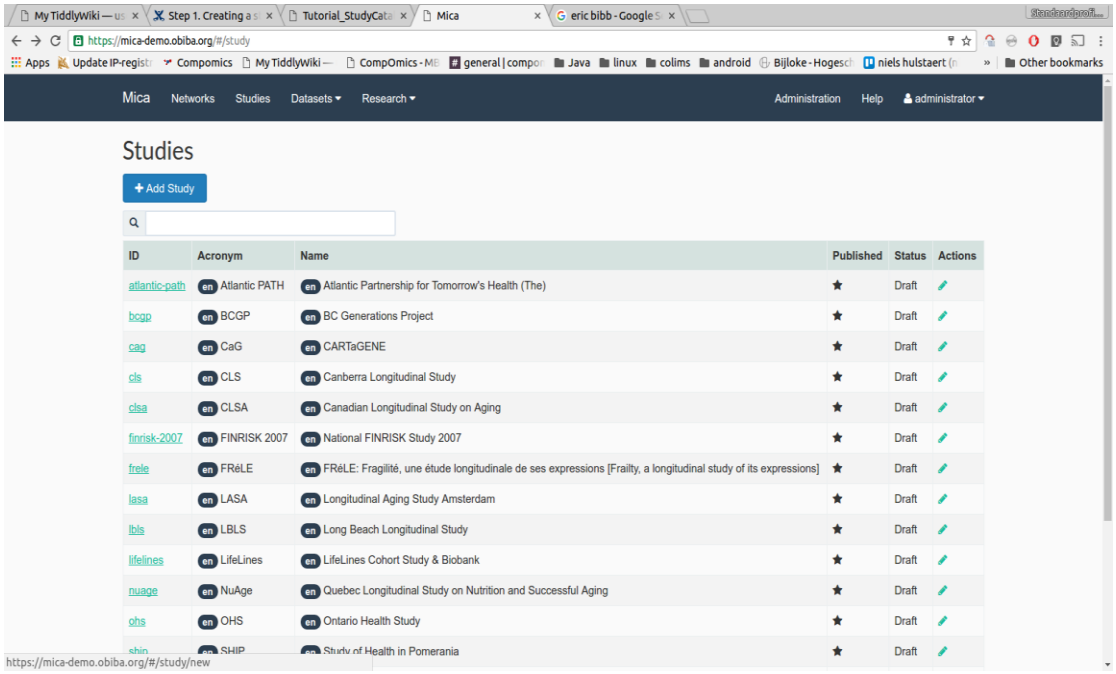


OPAL - DO YOU HAVE ANY COMMENTS ON THE OPAL SERVER?

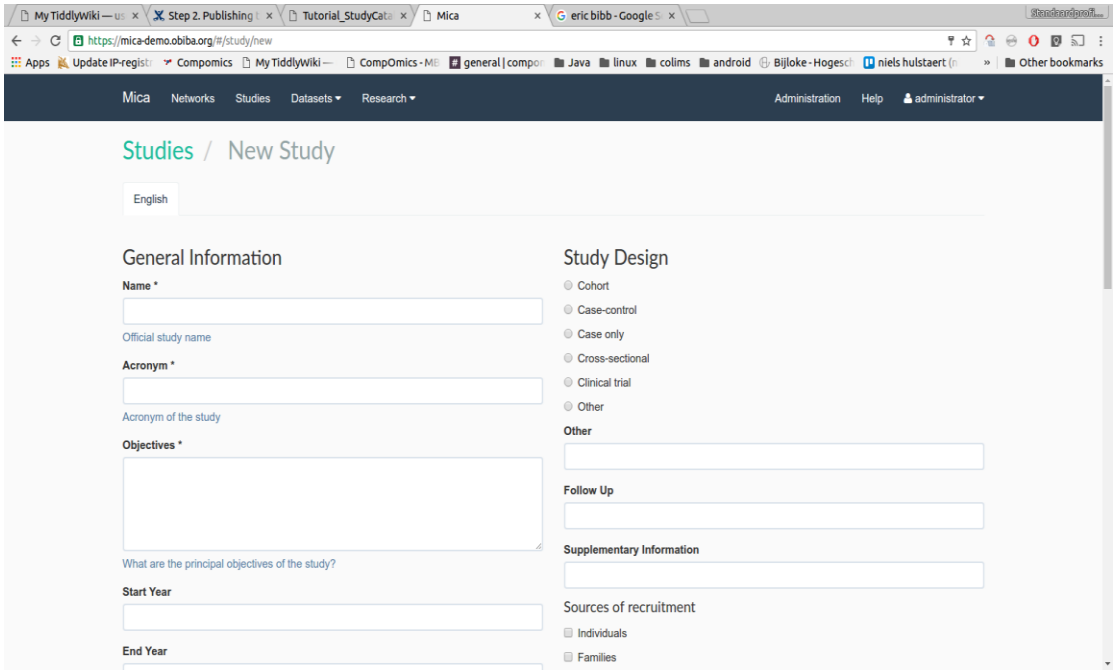
From the tutorial pages, is not obvious how to add tables from my own PC. To better explain, the fact that there is already a file browser displayed on the "add table" page, which browse the file of the OPAL instance and not the files from my local hard drive, can cause some minor confusion
I has to work with a virtual machine than don't work properly.
Simply leaving the requested information "by default" is not very complicated, but understanding the meaning of each choice is complex. For example Default Storage for database - Difference between "Add

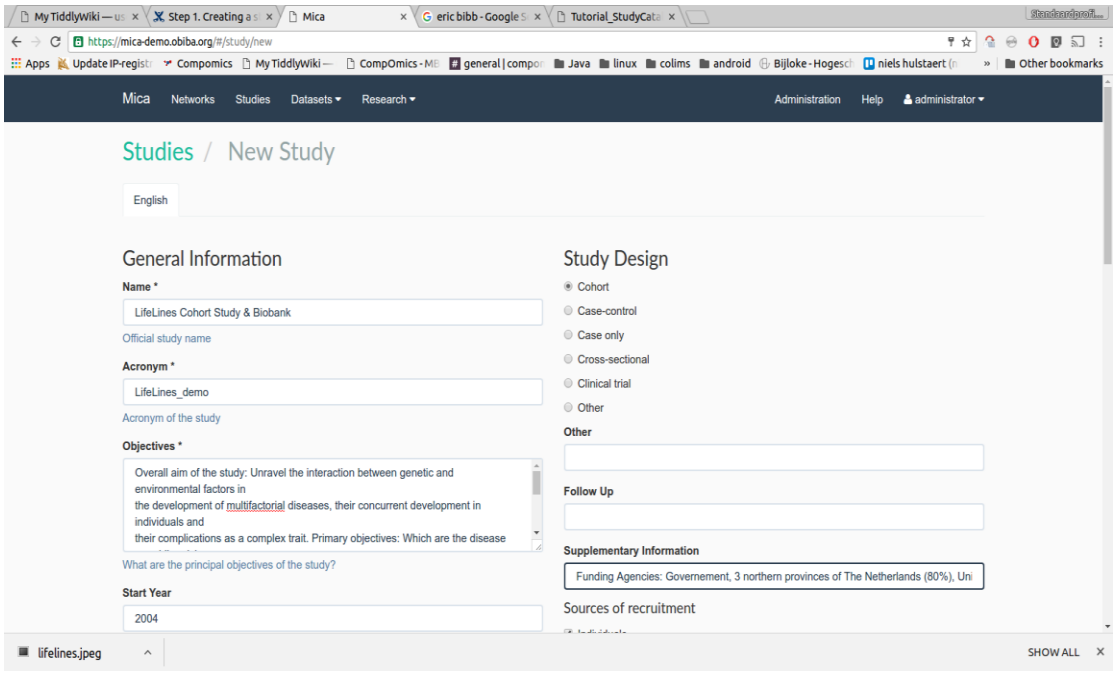
Table/Add table for dictionary/Add View" - Different options of derive variables - Magma JavaScript
data format from missing values leads to difficulties - problems with certificate based authentication
I'm sorry to say, but I find it weird to be forced to assess the difficulties related to a "functionality" that I have not used at all!
I did not use it.
Maybe it is not so immediate for people from 'bio' area.
Who will define Harmonized data ? Will each of the partners use the same Harmonized data on each project on each OPAL server ?
More Information regarding the structure of the dictionary is needed(we had trouble with categories) - Project Name should be modifiable
I did not use it.
when harmonizing the variables (the simple way without "Script Edition"), if the type of variables (e.g. Integer, etc.) can be selected, it would be better.
A complete tutorial should always be available.

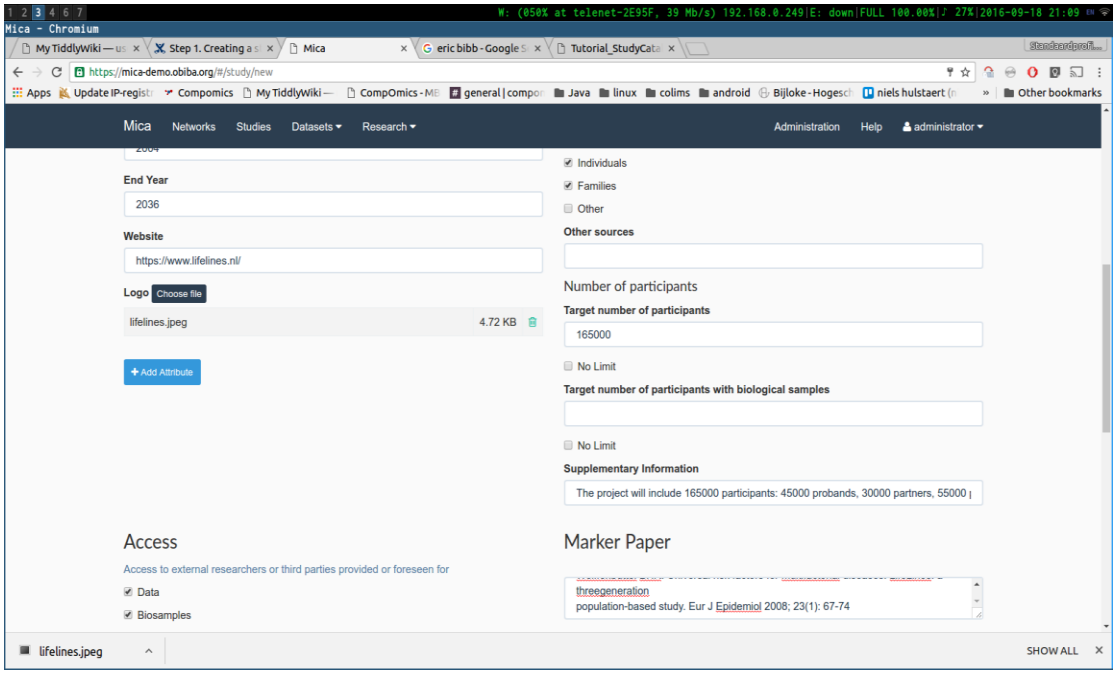
MICA - ADD STUDY



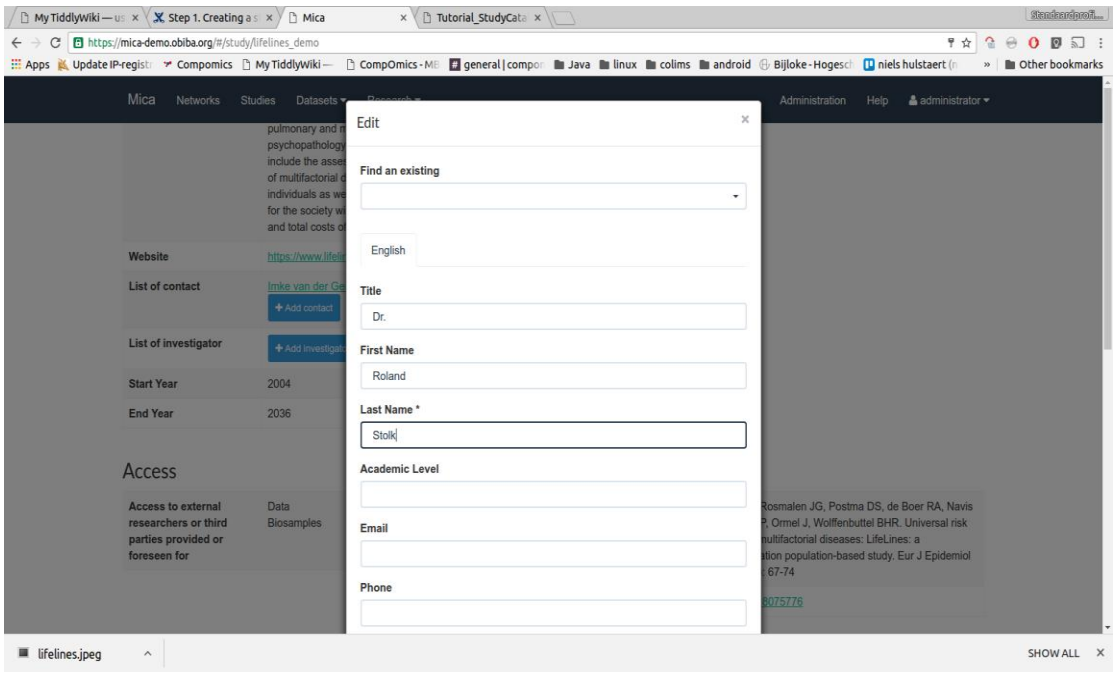
After navigating to the studies tab in the main menu, click on the "Add Study" button.


Mica
Networks
Studies
Datasets
Research
Administration
Help
administrator
Studies / New Study
English
General Information
Name *
Official study name
Acronym *
Acronym of the study
Objectives *
What are the principal objectives of the study?
Start Year
End Year
Study Design
Cohort
Case-control
Case only
Cross-sectional
Clinical trial
Other
Other
Follow Up
Supplementary Information
Sources of recruitment
Individuals
Families


Mica
Networks
Studies
Datasets
Research
Administration
Help
administrator
Studies / New Study
English
General Information
Name *
LifeLines Cohort Study & Biobank
Official study name
Acronym *
LifeLines_demo
Acronym of the study
Objectives *
Overall aim of the study: Unravel the interaction between genetic and environmental factors in
the development of multifactorial diseases, their concurrent development in individuals and
their complications as a complex trait. Primary objectives: Which are the disease
What are the principal objectives of the study?
Start Year
2004
Study Design
Cohort
Case-control
Case only
Cross-sectional
Clinical trial
Other
Other
Follow Up
Supplementary Information
Funding Agencies: Governement, 3 northern provinces of The Netherlands (80%), Uni
Sources of recruitment
lifelines.jpeg
SHOW ALL



Fill in all the required fields and click on the "Save" button on the bottom of the page



On the study main page, click on the "Add contact" or "Add investigator" button. Fill in the required fields and click on the "Save" button.

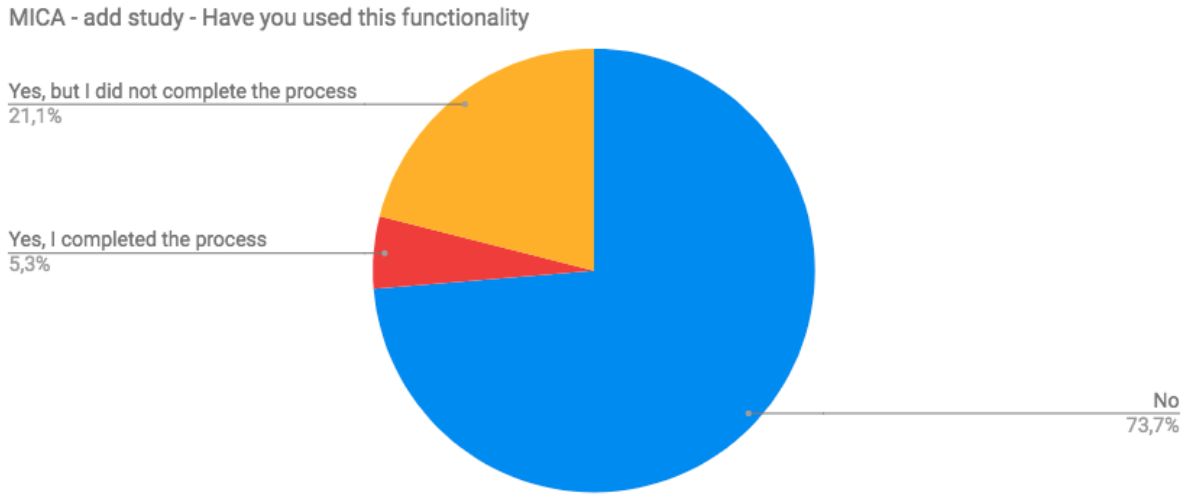
These images show part of the process to add a study to MICA.

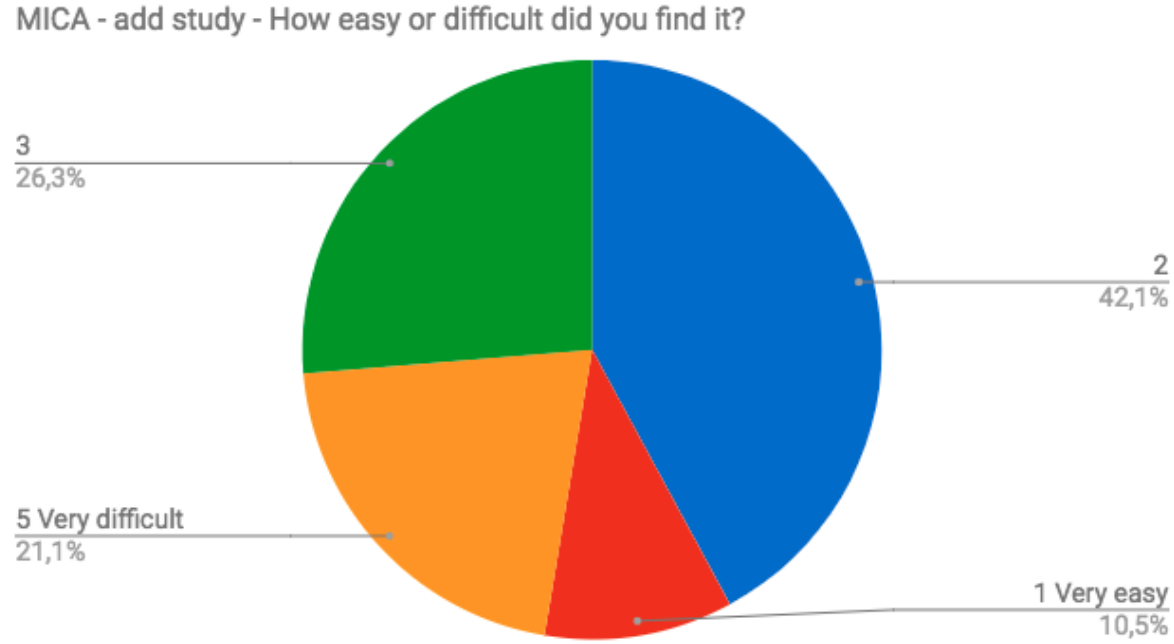
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

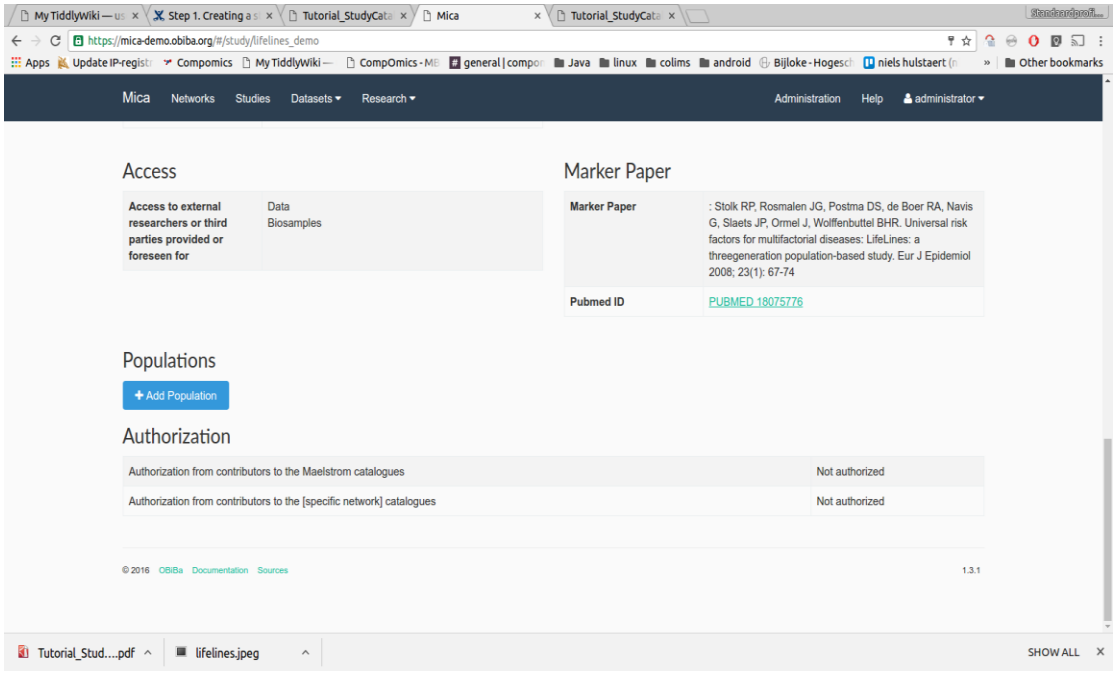
How easy or difficult is it to add a study to MICA?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

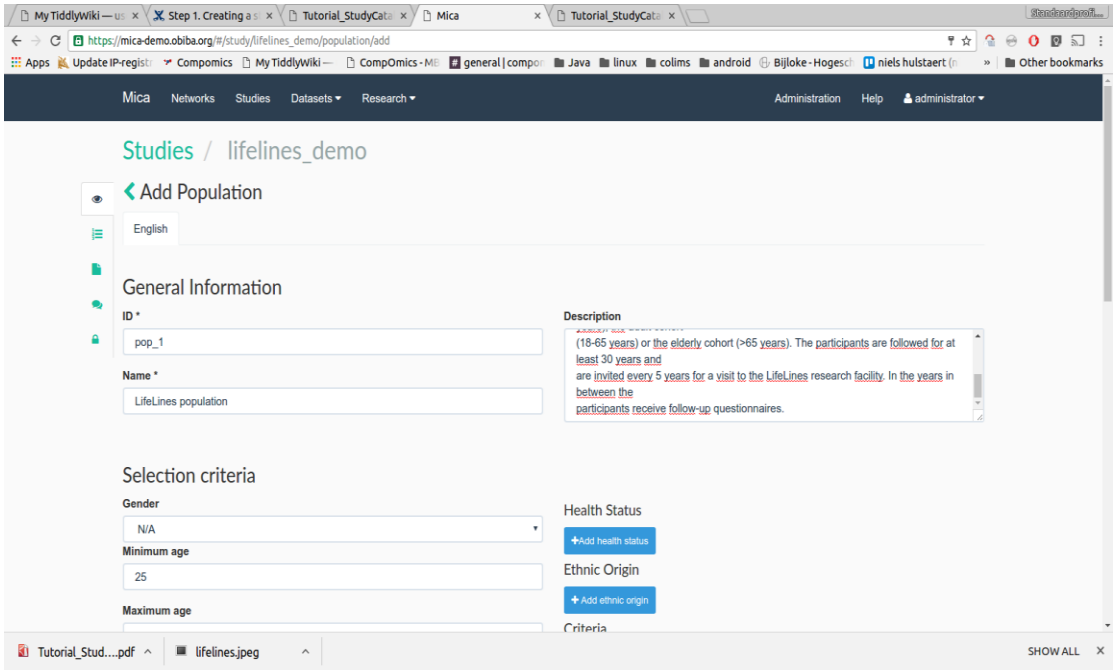


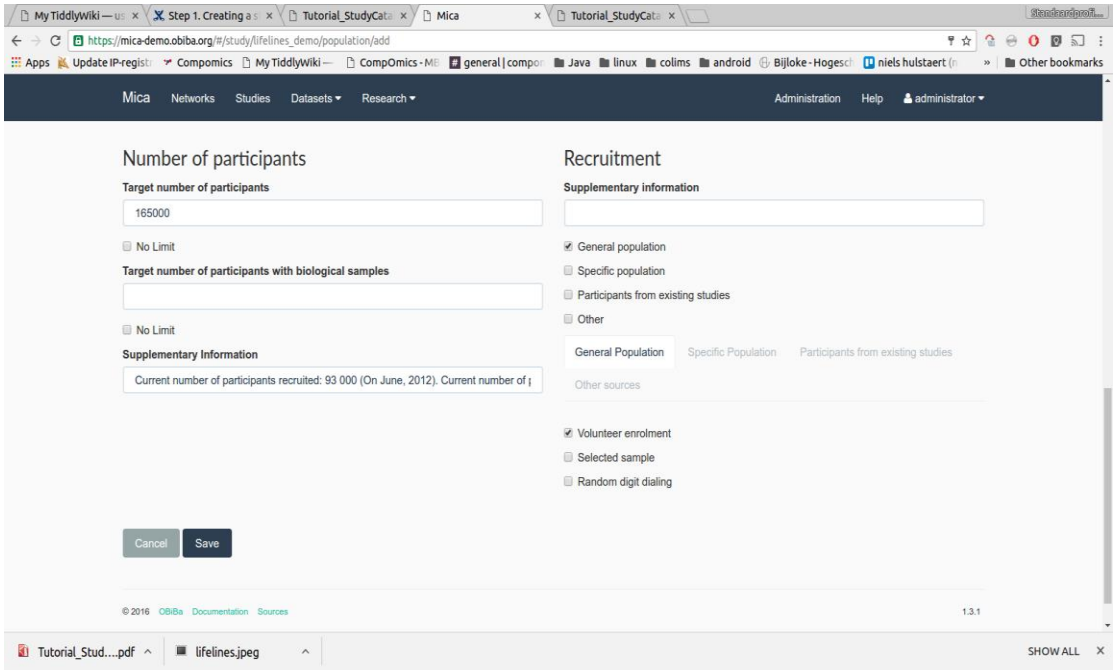


MICA - ADD POPULATION

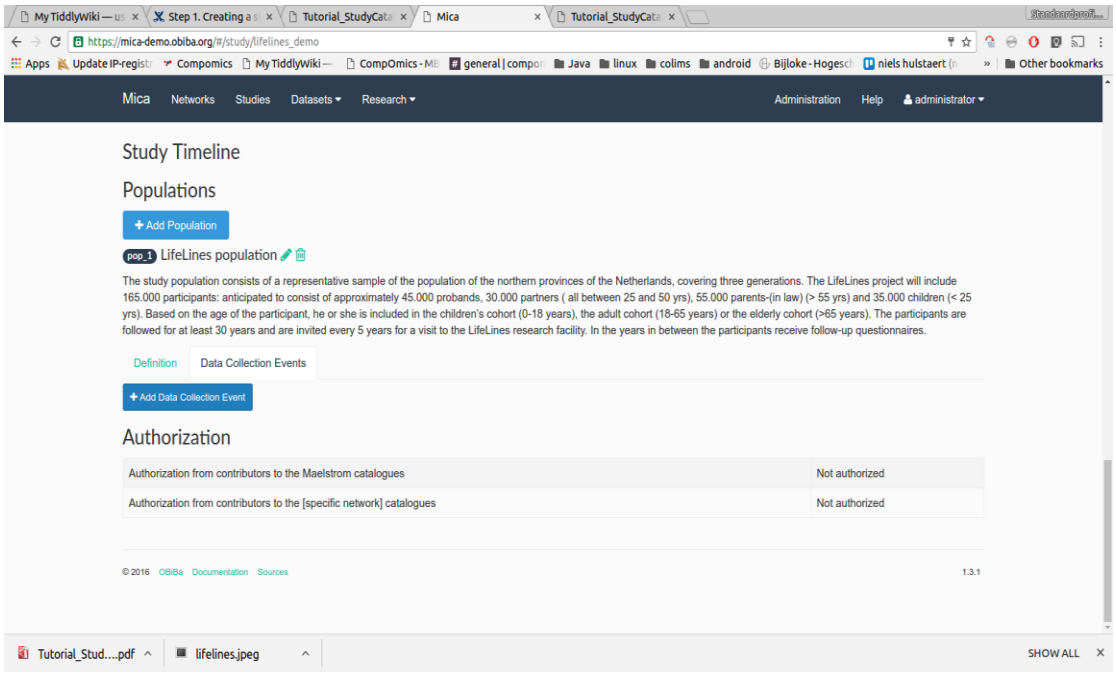


On the study main page, click on the "Add Population" button.

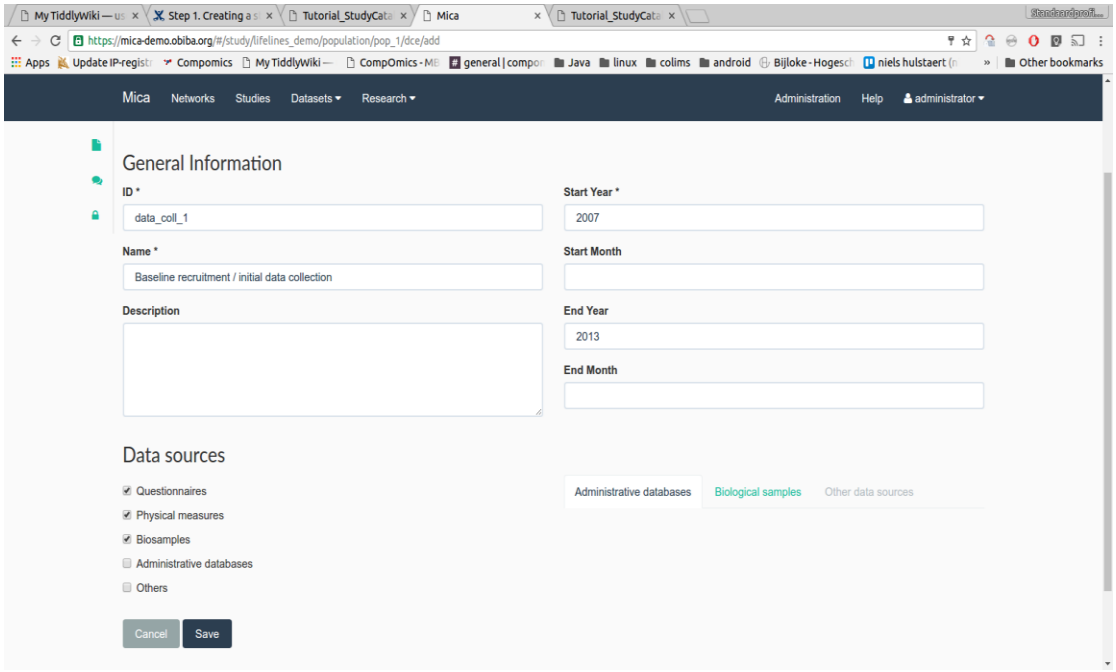


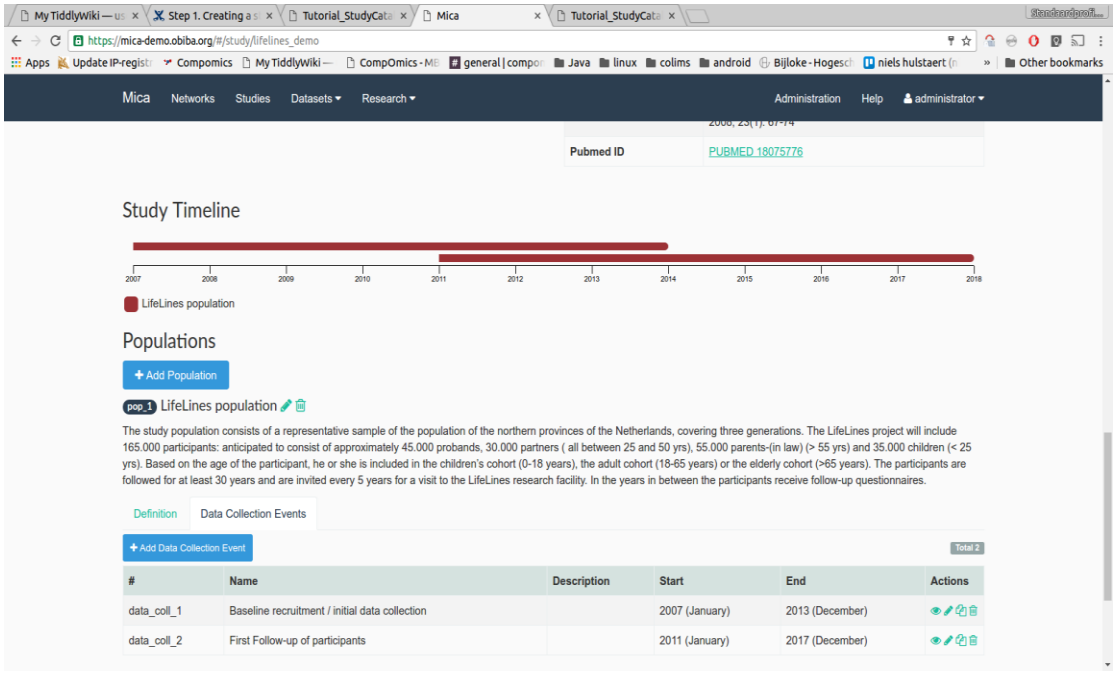


Fill in the required fields and click on the "Save" button.



On the study main page in the "Population" section, click on the "Data Collection Events" tab. Then click on the "Add Data Collection Event" button.





Fill in the required fields and click on the "Save" button on the bottom of the page. The added date collection events are shown in a time-line on the study main page.

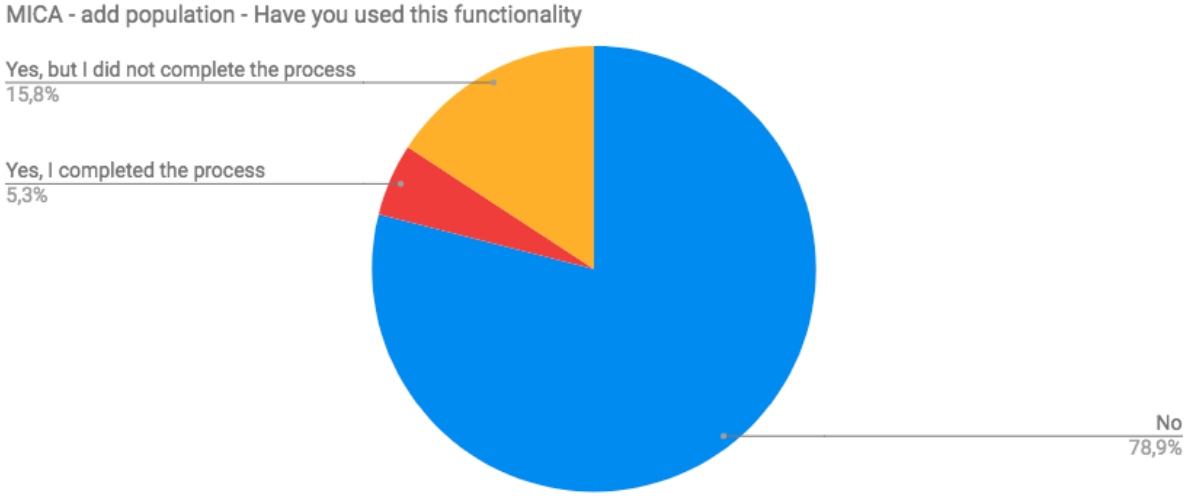
These images show part of the process to add population to MICA

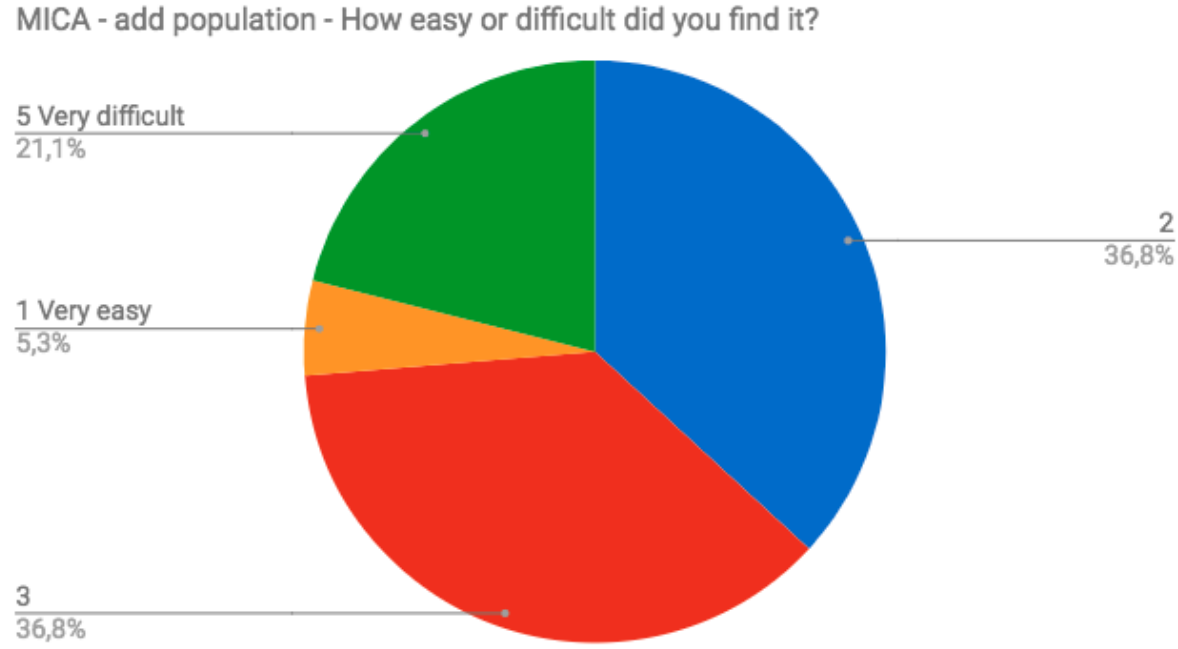
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

How easy or difficult is it to add new population to MICA?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

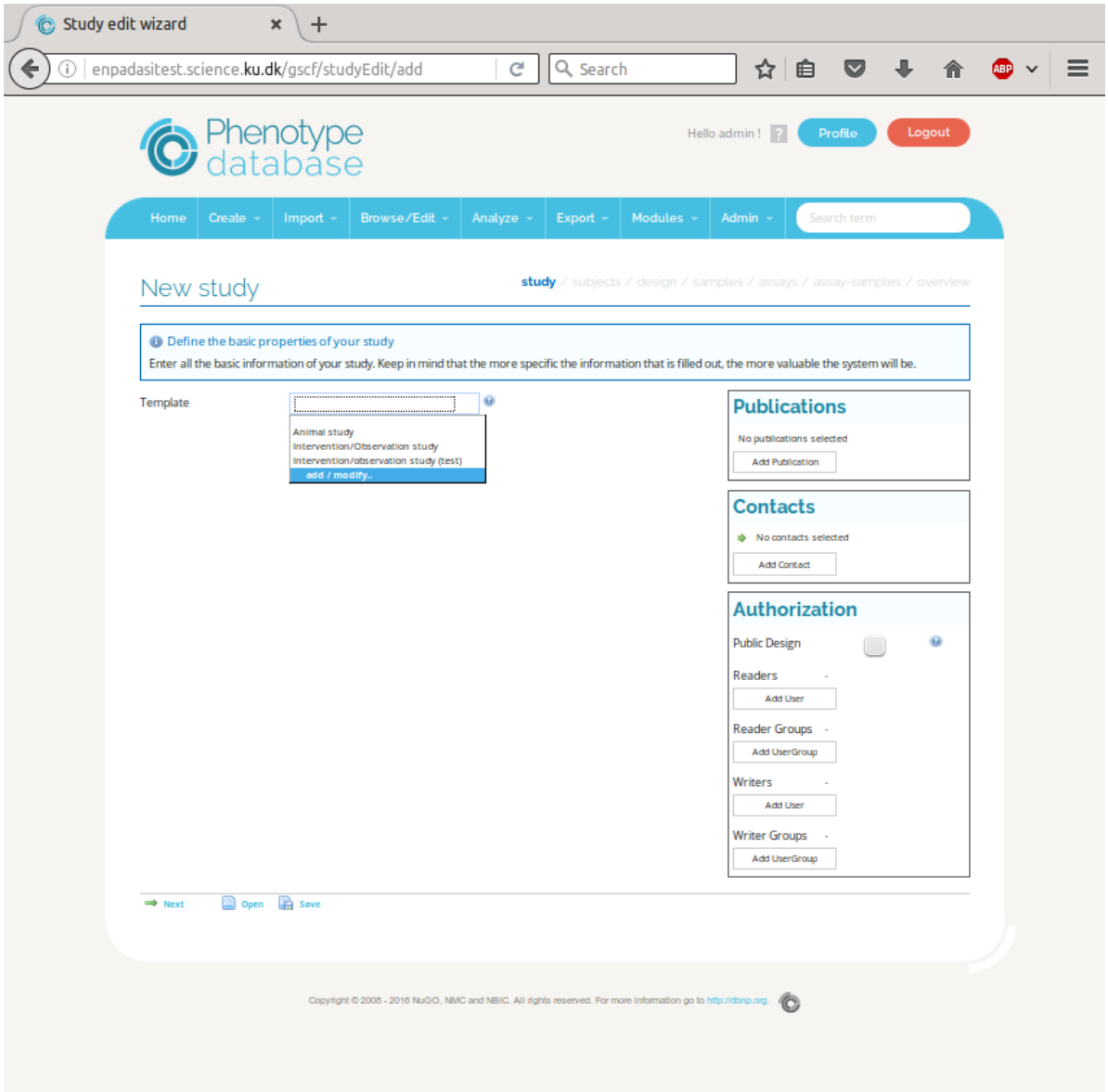


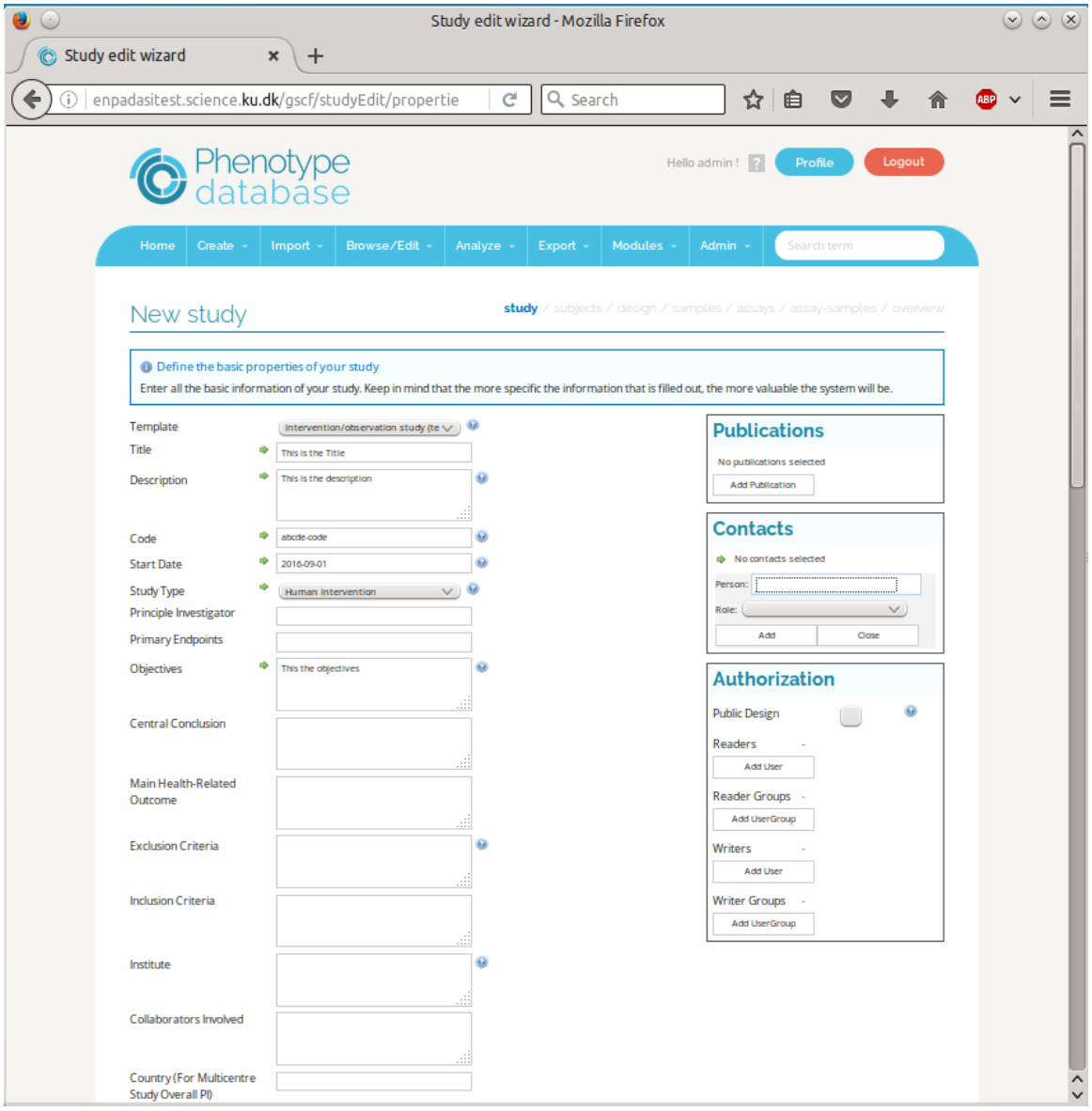


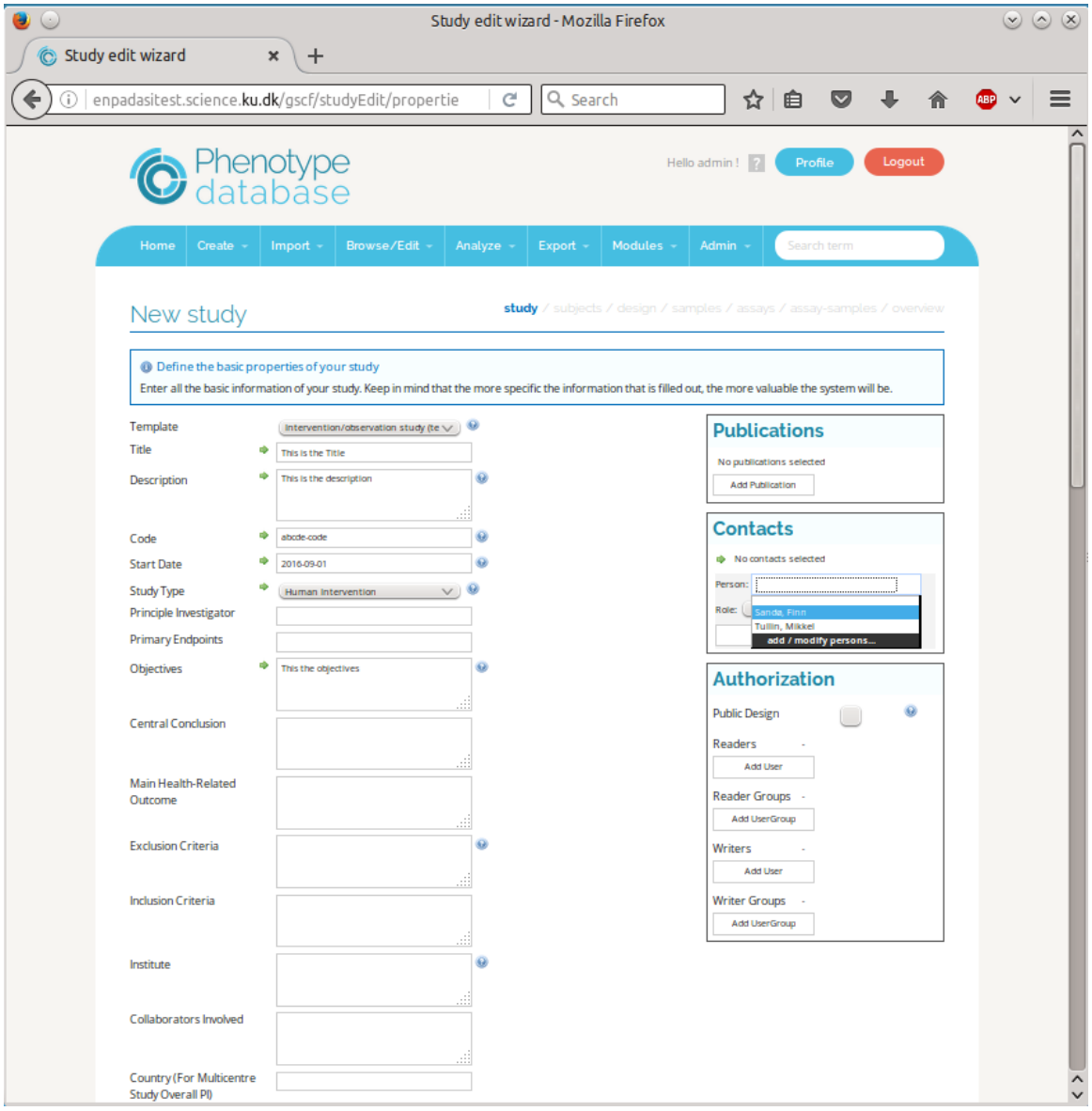
MICA - DO YOU HAVE ANY COMMENTS ON THE MICA SERVER?

Was not able to access the MICA instance at INFN of Bari for testing
Unable to do anything cause the account seems to have no admin privileges.
No access to the study creation on the mica server http://mica.cloud.ba.infn.it So I could not test anything.
I'm sorry to say, but I find it weird to be forced to assess the difficulties related to a "functionality" that I have not used at all!
no
I have not found the possibility to test MICA, even if it seems that it is not difficult to use.
Give a hint on how to add multiple population and multiple samples within the same population. This could be a tutorial part.
no
Please, provide a practical test.

PHENOTYPE DATABASE (DBNP) - CREATE A NEW STUDY


Study edit wizard
enpadasitest.science.ku.dk/gscf/studyEdit/add
Search
Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
New study
study / subjects / design / samples / assays / assay-samples / overview
Define the basic properties of your study
Enter all the basic information of your study. Keep in mind that the more specific the information that is filled out, the more valuable the system will be.
Template
Animal study
Intervention/Observation study
Intervention/observation study (test)
add / modify..
Publications
No publications selected
Add Publication
Contacts
No contacts selected
Add Contact
Authorization
Public Design
Readers
Add User
Reader Groups
Add UserGroup
Writers
Add User
Writer Groups
Add UserGroup
Next
Open
Save
Copyright © 2006 - 2016 NuGO, NMC and NBIC. All rights reserved. For more information go to http://dbnp.org.


Study edit wizard - Mozilla Firefox
Study edit wizard
enpadasitest.science.ku.dk/gscf/studyEdit/propertie
Search
Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
New study
study / subjects / design / samples / assays / assay-samples / overview
Define the basic properties of your study
Enter all the basic information of your study. Keep in mind that the more specific the information that is filled out, the more valuable the system will be.
Template
Intervention/observation study (te
Title
This is the Title
Description
This is the description
Code
abcde-code
Start Date
2016-09-01
Study Type
Human Intervention
Principle Investigator
Primary Endpoints
Objectives
This the objectives
Central Conclusion
Main Health-Related Outcome
Exclusion Criteria
Inclusion Criteria
Institute
Collaborators Involved
Country (For Multicentre Study Overall PI)
Publications
No publications selected
Add Publication
Contacts
No contacts selected
Person:
Role:
Add
Close
Authorization
Public Design
Readers
Add User
Reader Groups
Add UserGroup
Writers
Add User
Writer Groups
Add UserGroup


Study edit wizard - Mozilla Firefox
Study edit wizard
enpadasitest.science.ku.dk/gscf/studyEdit/propertie
Search
Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
New study
study / subjects / design / samples / assays / assay-samples / overview
Define the basic properties of your study
Enter all the basic information of your study. Keep in mind that the more specific the information that is filled out, the more valuable the system will be.
Template
Intervention/observation study (te
Title
This is the Title
Description
This is the description
Code
abcde-code
Start Date
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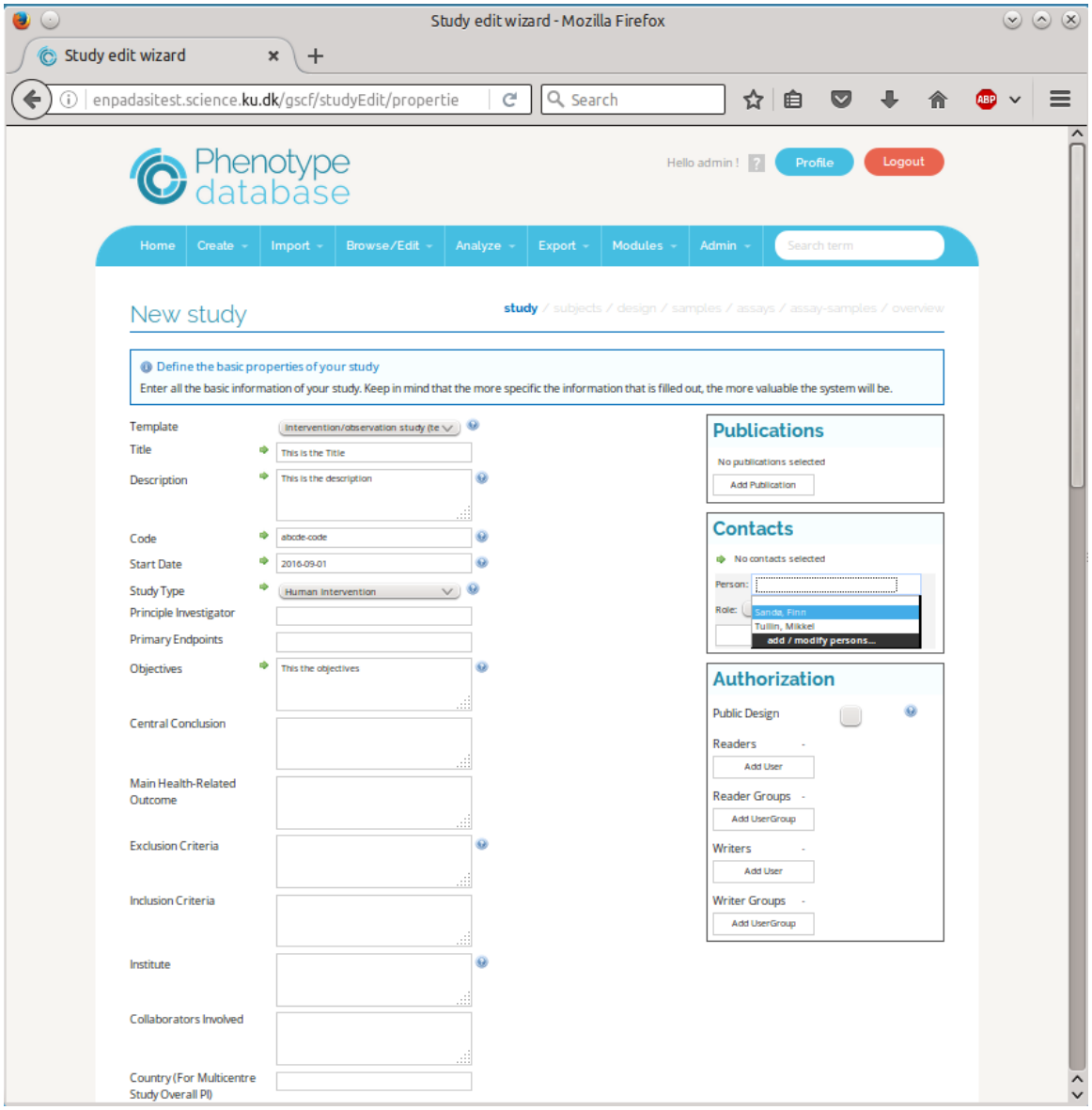
Principle Investigator
Primary Endpoints
Objectives
This the objectives
Central Conclusion
Main Health-Related Outcome
Exclusion Criteria
Inclusion Criteria
Institute
Collaborators Involved
Country (For Multicentre Study Overall PI)
Publications
No publications selected
Add Publication
Contacts
No contacts selected
Person:
Role:
Sarida, Finn
Tuillin, Mikkel
add / modify persons...
Authorization
Public Design
Readers
Add User
Reader Groups
Add UserGroup
Writers
Add User
Writer Groups
Add UserGroup



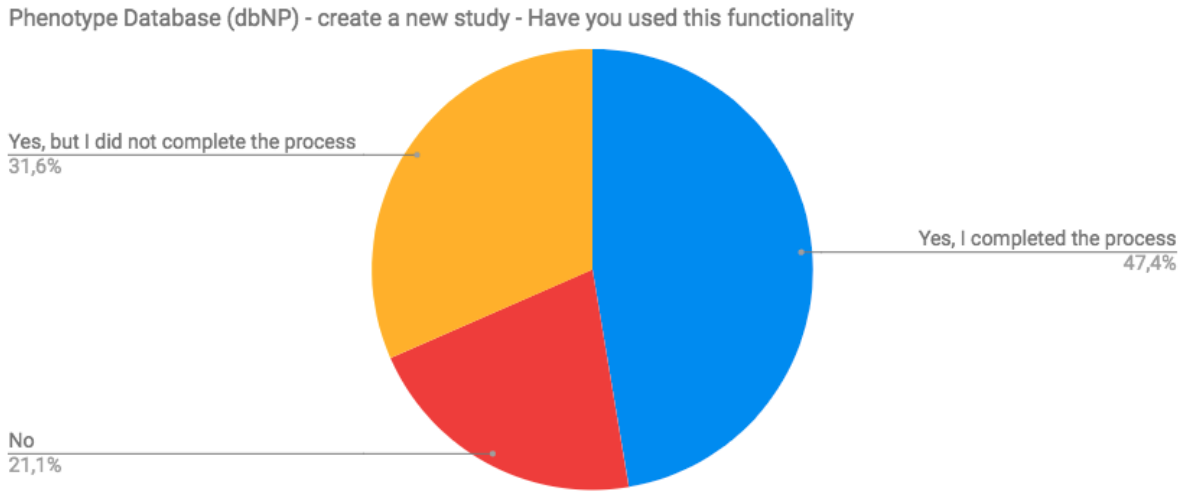
These images show part of the process to create a new study in the Phenotype Database (dbNP).

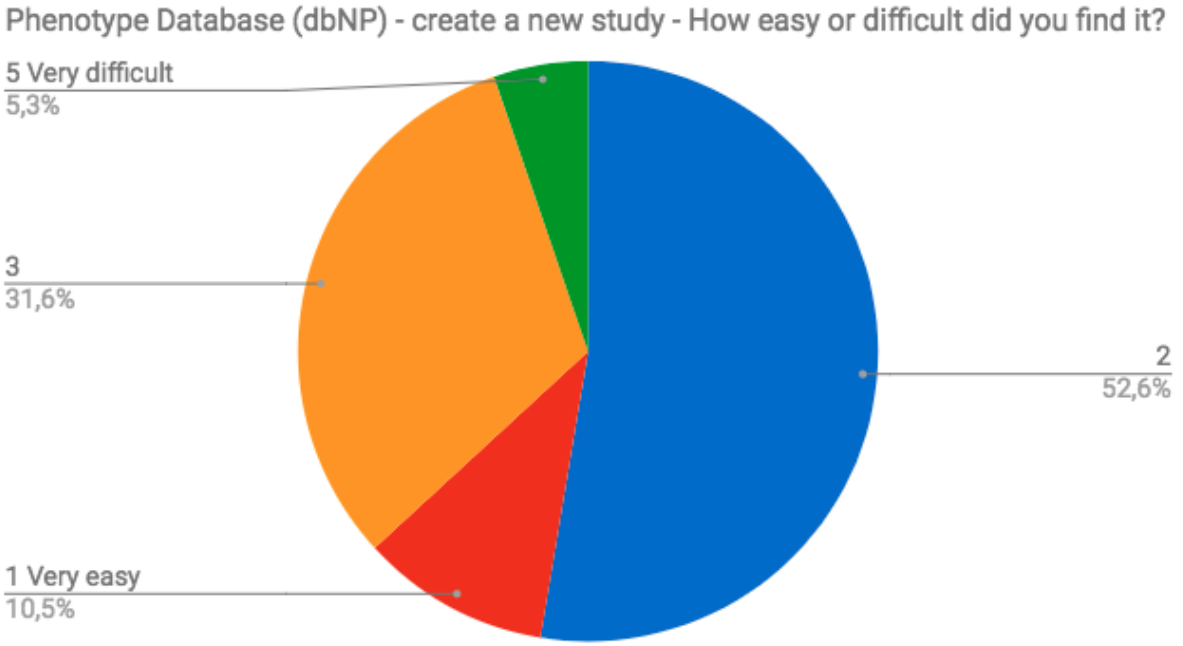
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

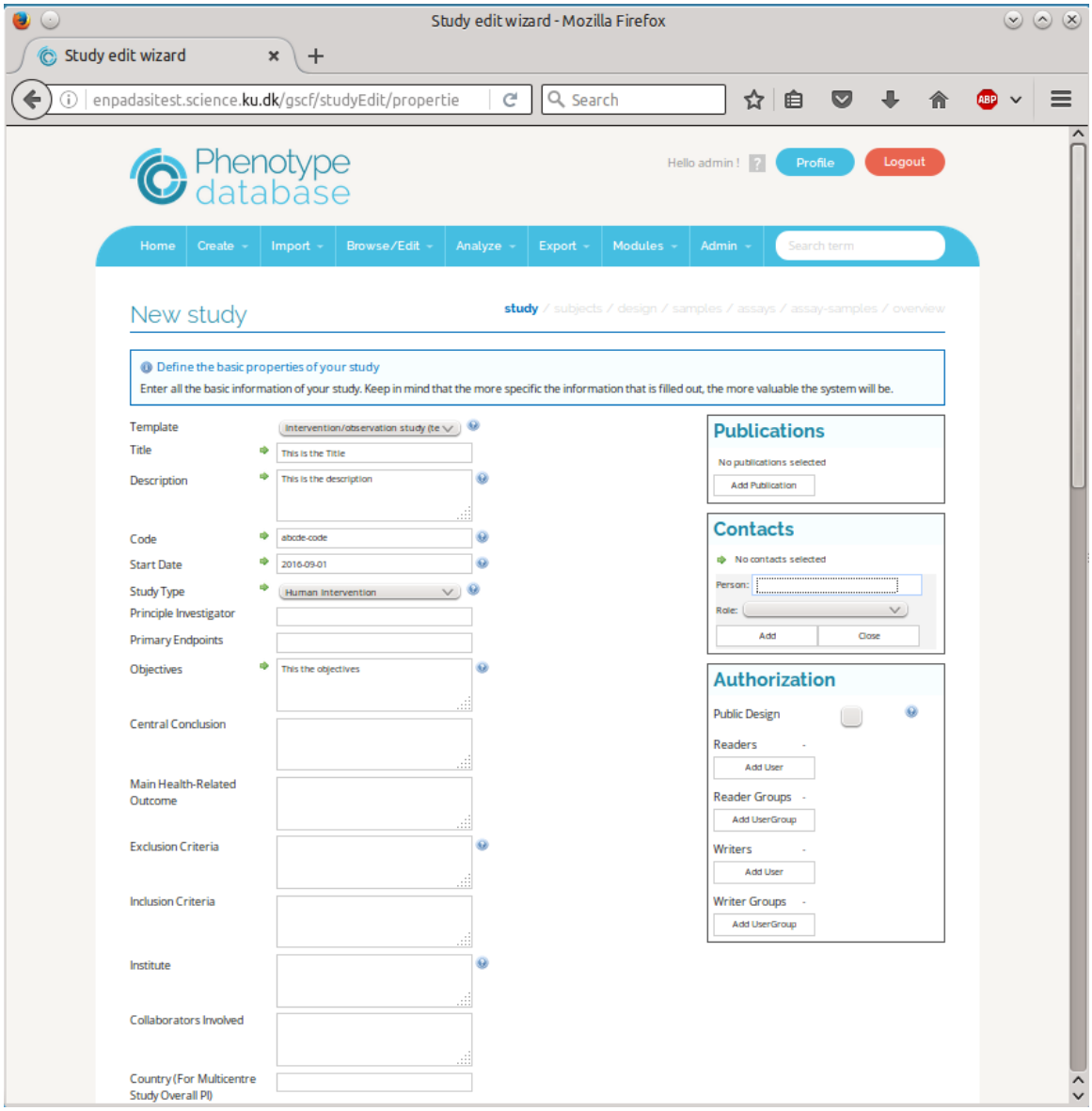
How easy or difficult is it to create a new study to the Phenotype Database (dbNP)?

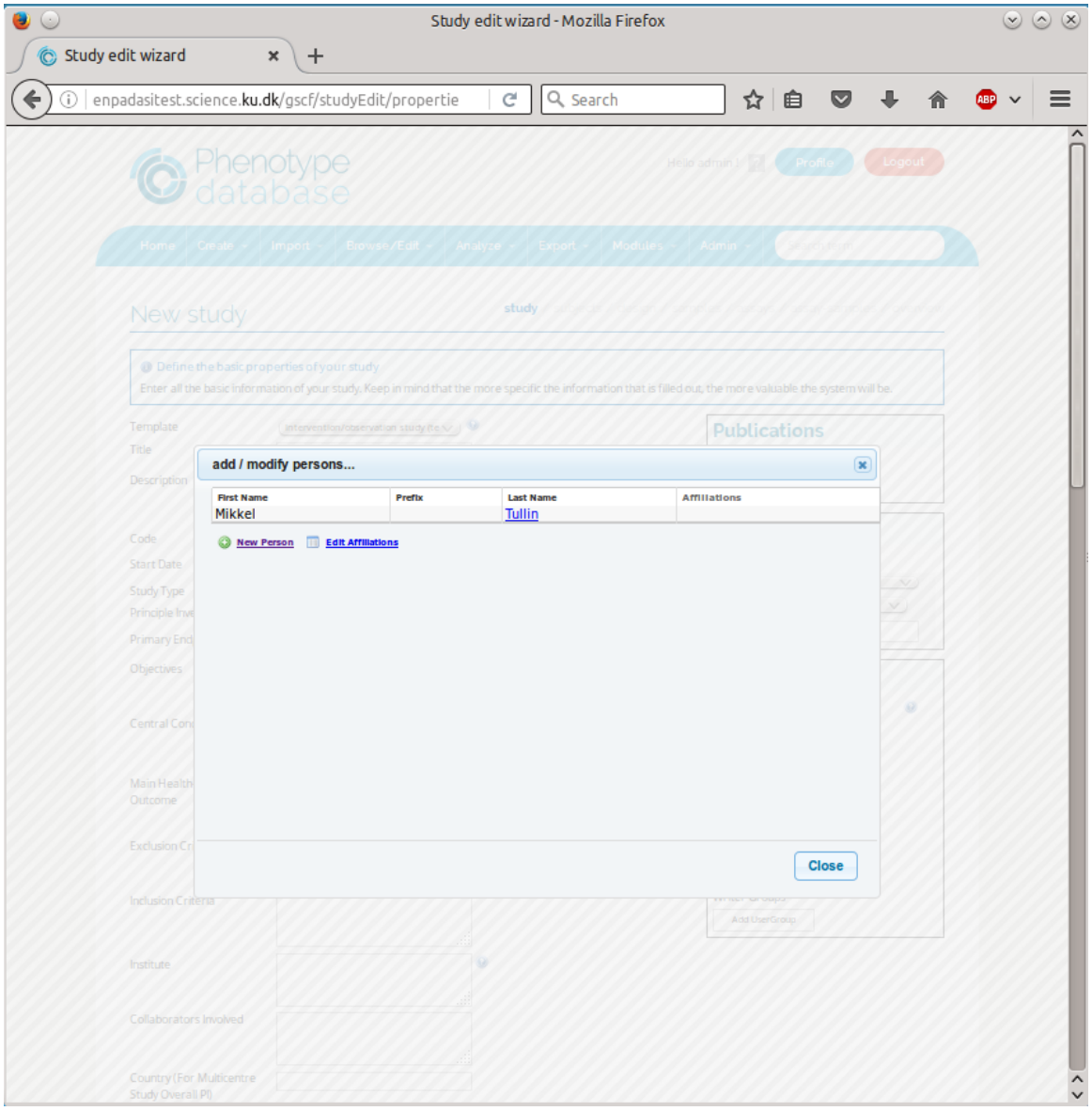
- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult

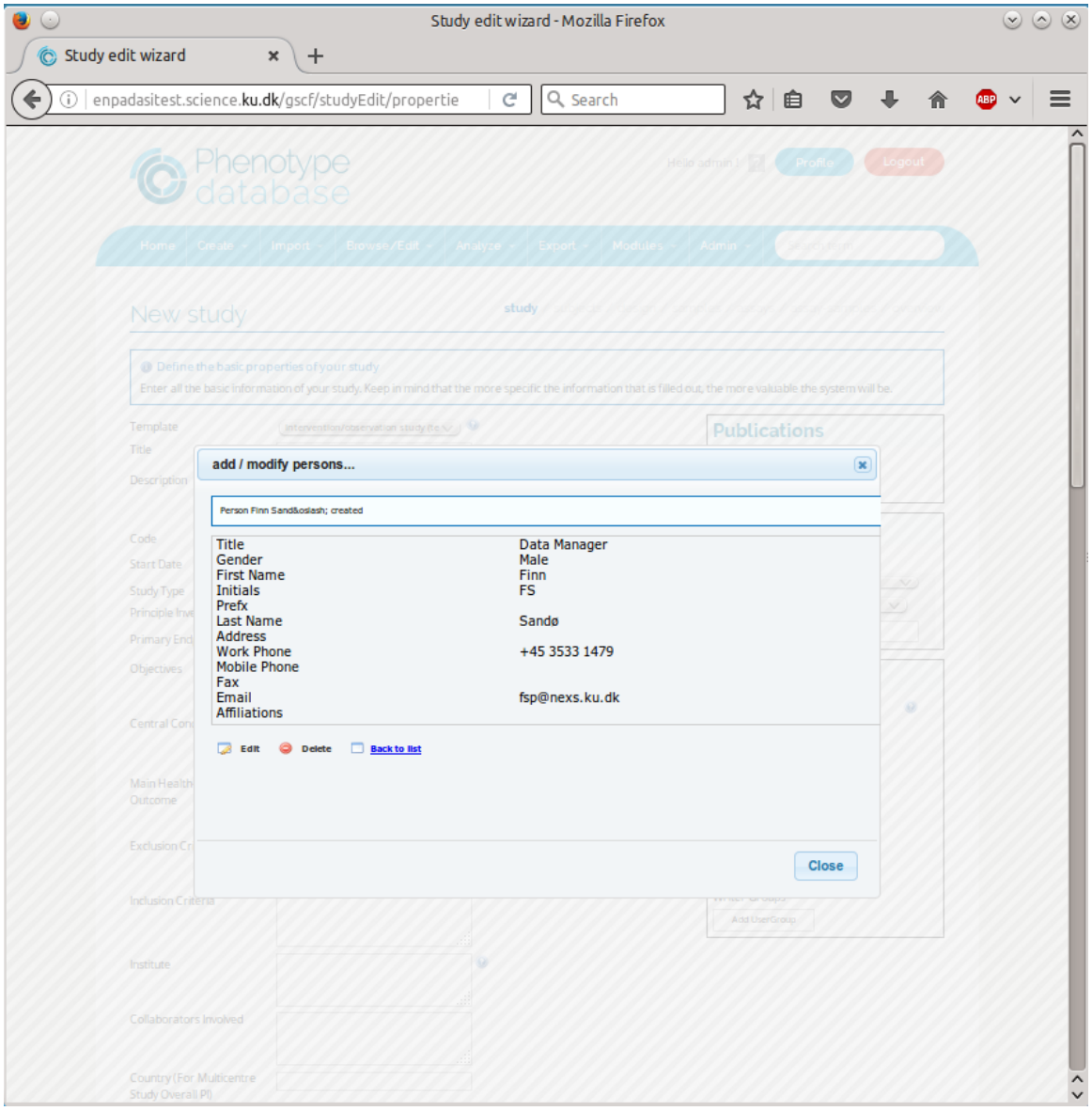

Phenotype Database (dbNP) - create a new study - Have you used this functionality
Yes, but I did not complete the process
31,6%
Yes, I completed the process
47,4%
No
21,1%


Phenotype Database (dbNP) - create a new study - How easy or difficult did you find it?
5 Very difficult
5,3%
3
31,6%
2
52,6%
1 Very easy
10,5%

PHENOTYPE DATABASE (DBNP) - ADD A PERSON TO THE PERSON LIST




Study edit wizard - Mozilla Firefox
Study edit wizard
enpadasitest.science.ku.dk/gscf/studyEdit/propertie
Search
Phenotype database
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Profile
Logout
New study
Define the basic properties of your study
Enter all the basic information of your study. Keep in mind that the more specific the information that is filled out, the more valuable the system will be.
Template
Title
Description
Publications
add / modify persons...
First Name
Prefix
Last Name
Affiliations
Mikkel
Tullin
New Person
Edit Affiliations
Close
Code
Start Date
Study Type
Objectives
Inclusion Criteria
Institute
Collaborators Involved
Country (For Multicentre Study Overall PI)



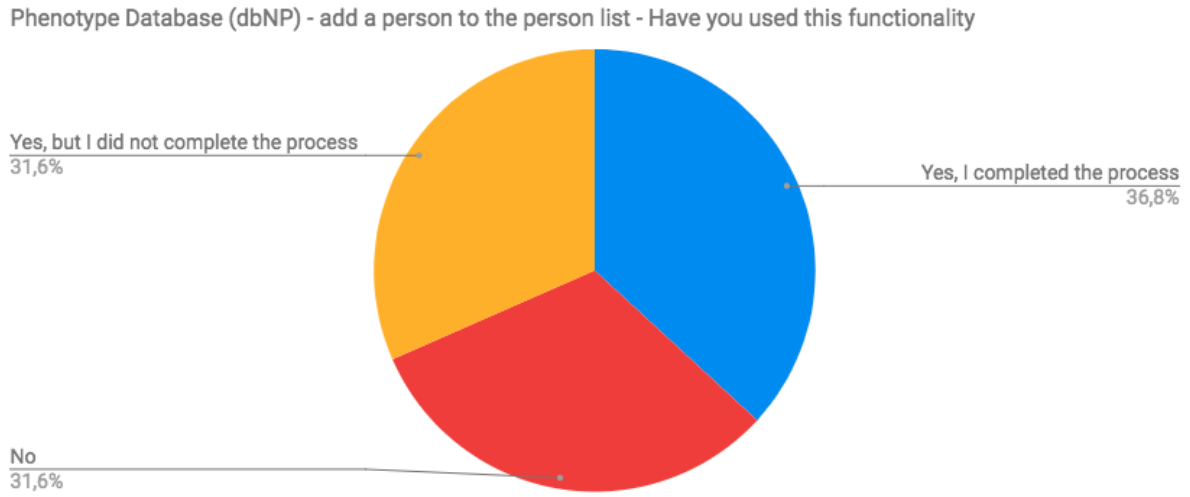
These images show the process to add a person to the person list in the Phenotype Database (dbNP)

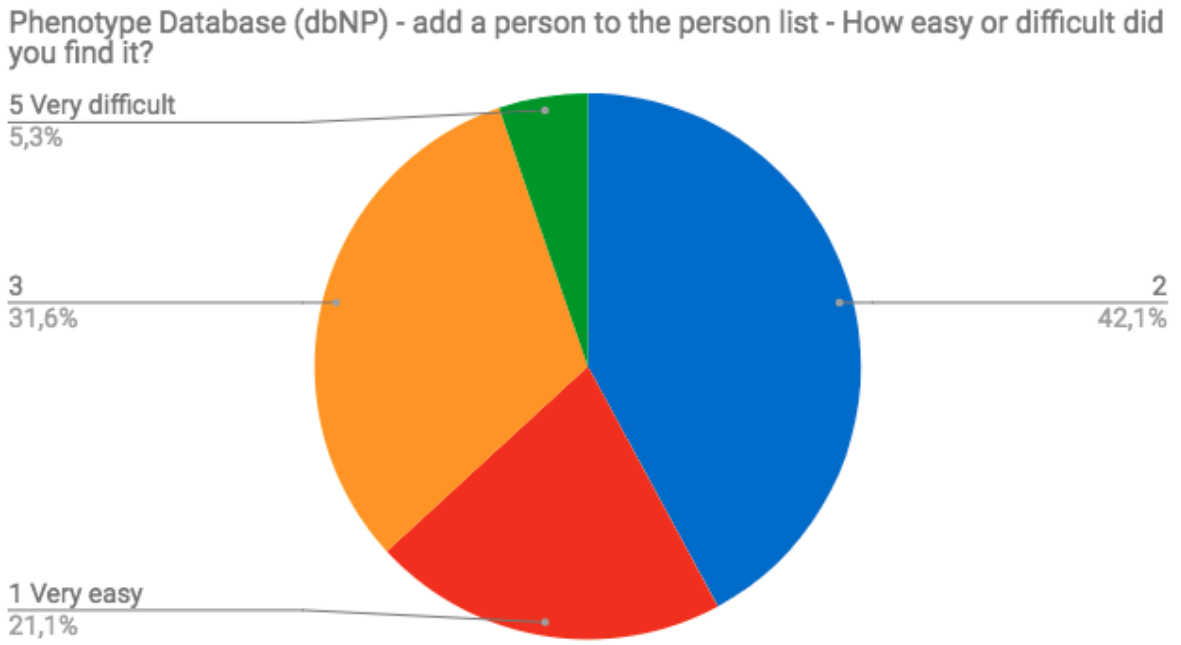
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

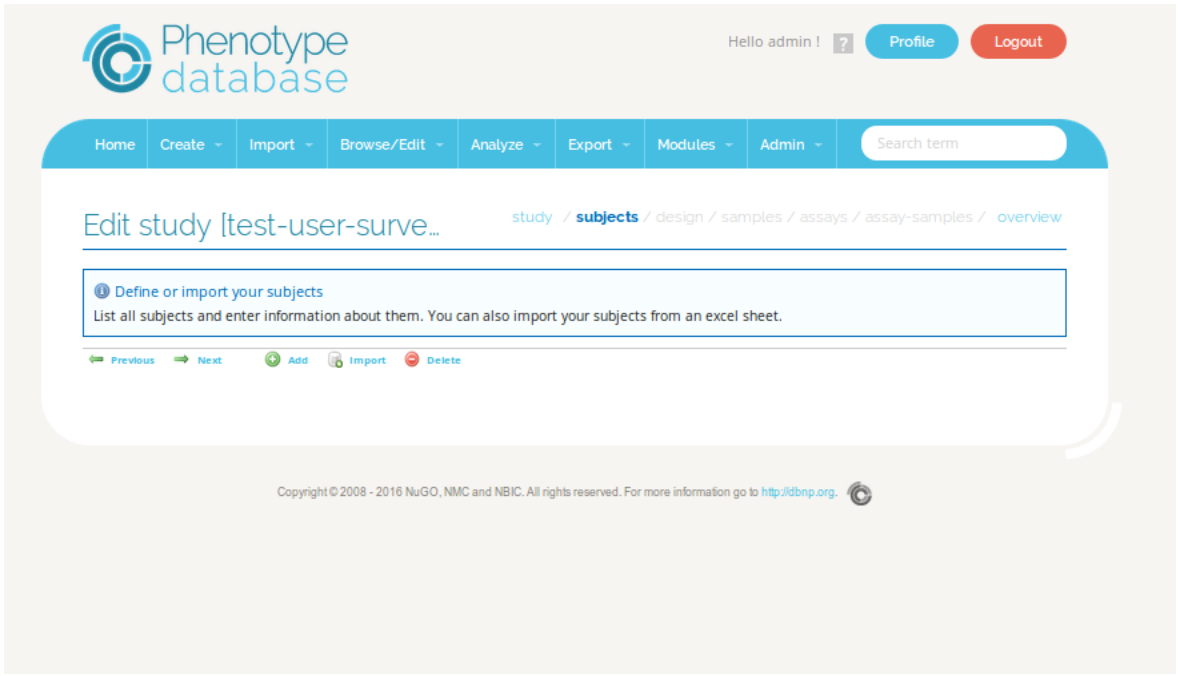
How easy or difficult is it to add a person to person list in the Phenotype Database (dbNP)?

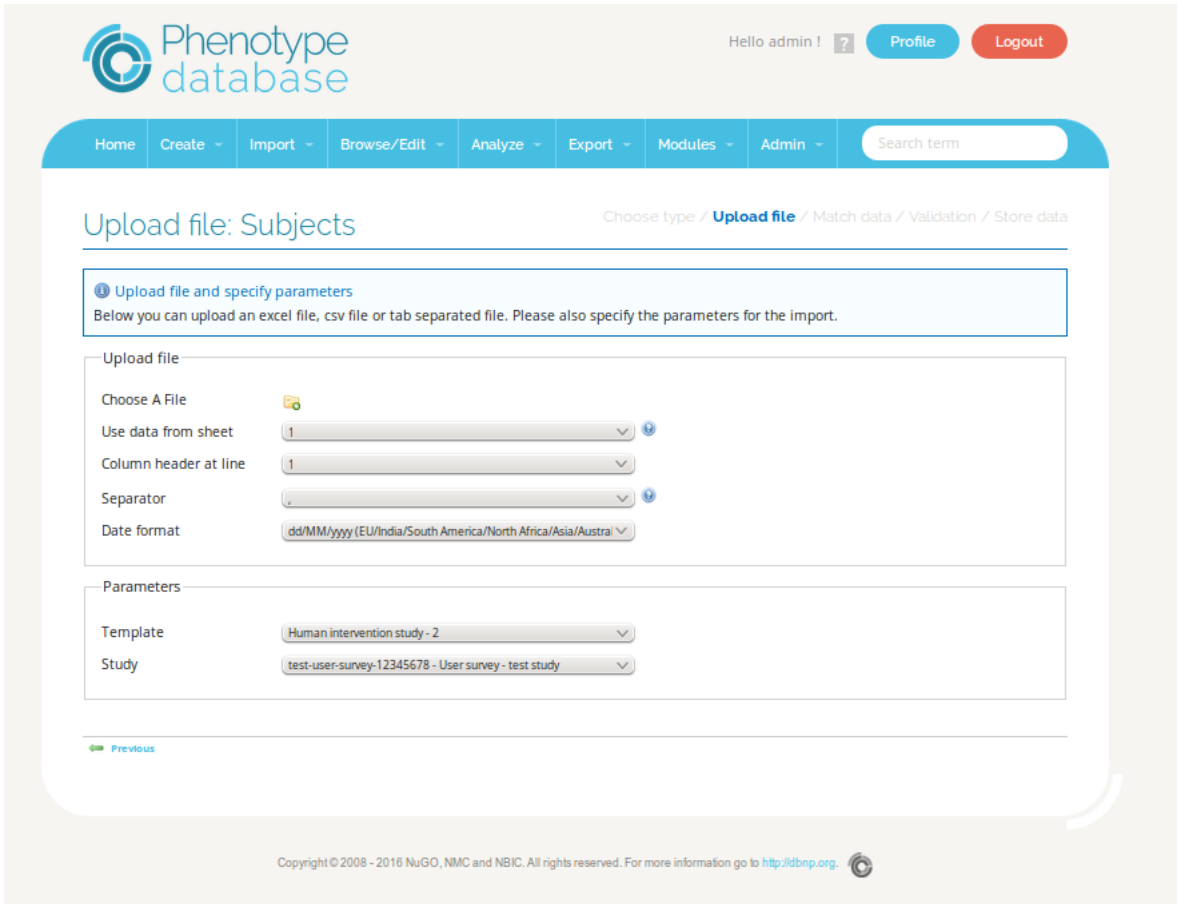
- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

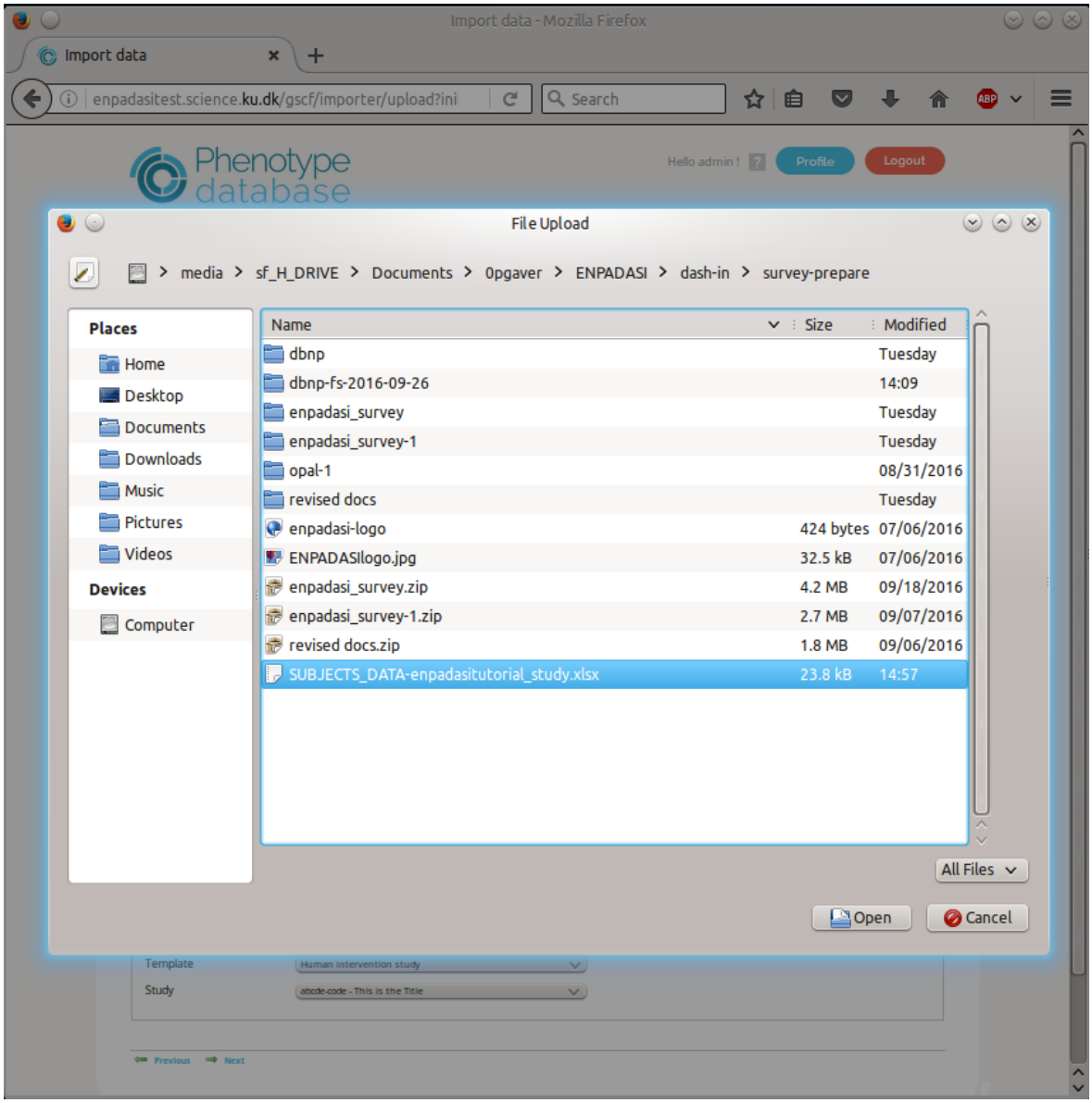


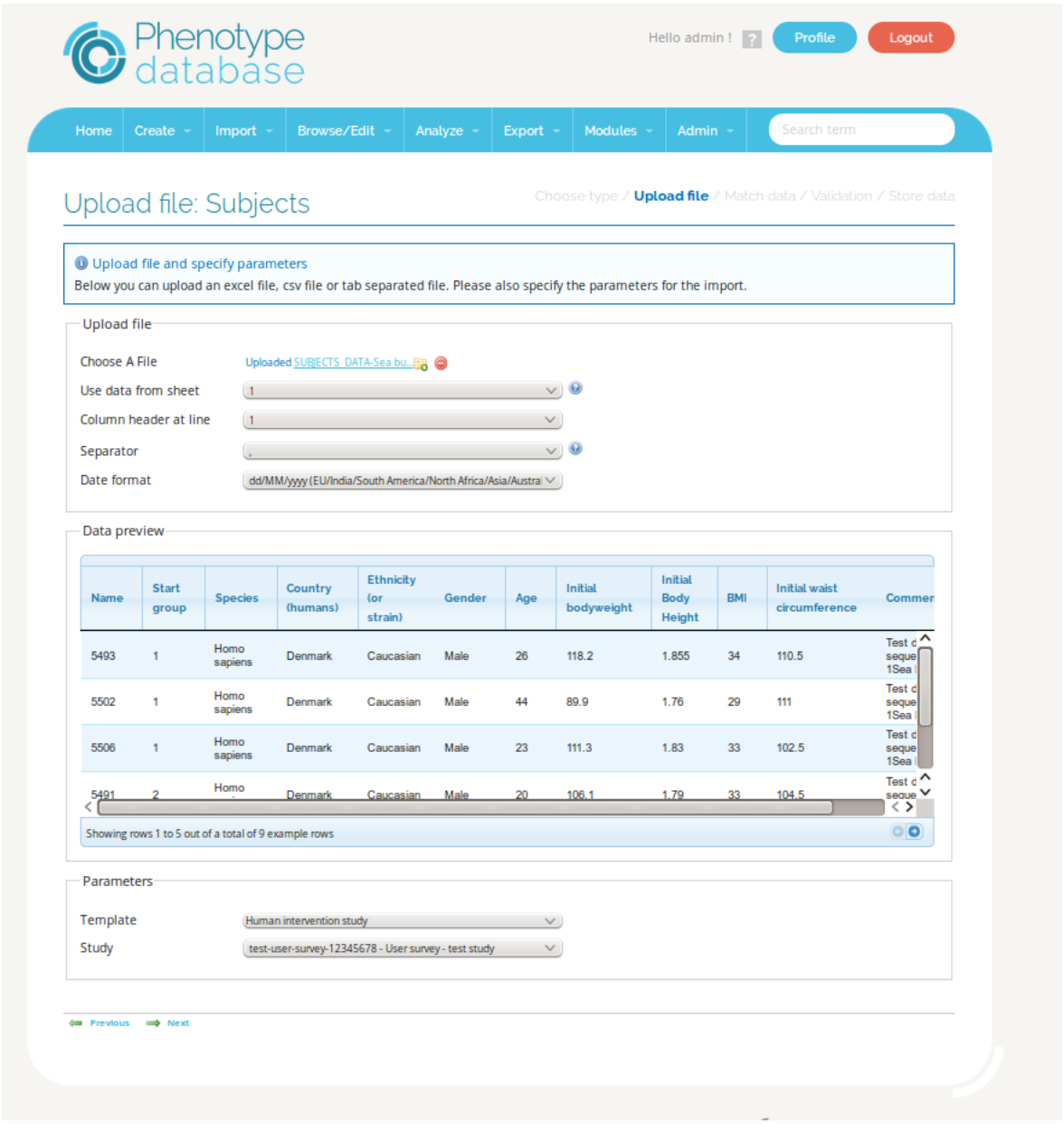


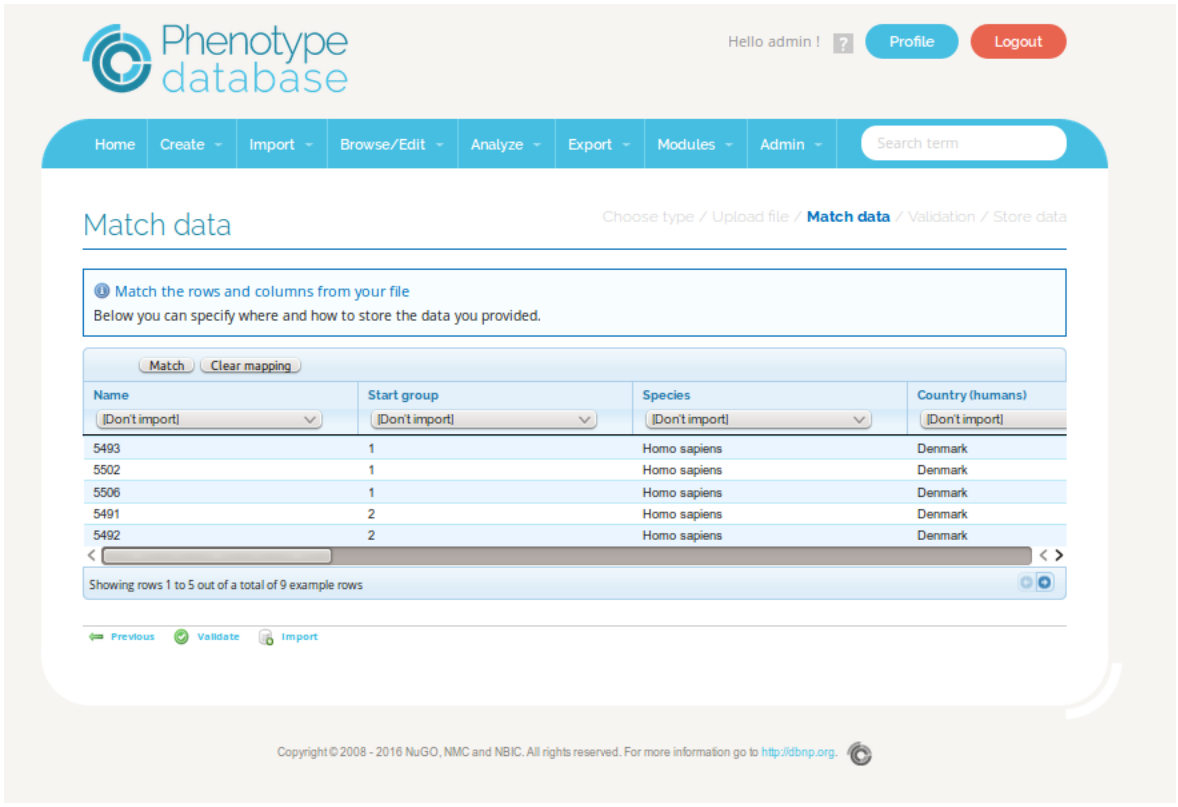
PHENOTYPE DATABASE (DBNP) – UPLOAD SUBJECTS


Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Edit study [test-user-surve...
study / subjects / design / samples / assays / assay-samples / overview
Define or import your subjects
List all subjects and enter information about them. You can also import your subjects from an excel sheet.
Previous
Next
Add
Import
Delete
Copyright © 2008 - 2016 NuGO, NMC and NBIC. All rights reserved. For more information go to http://dbnp.org.


Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Upload file: Subjects
Choose type / Upload file / Match data / Validation / Store data
Upload file and specify parameters
Below you can upload an excel file, csv file or tab separated file. Please also specify the parameters for the import.
Upload file
Choose A File
Use data from sheet
1
Column header at line
1
Separator
,
Date format
dd/MM/yyyy (EU/India/South America/North Africa/Asia/Austra
Parameters
Template
Human intervention study - 2
Study
test-user-survey-12345678 - User survey - test study
Previous
Copyright © 2008 - 2016 NuGO, NMC and NBIC. All rights reserved. For more information go to http://dbnp.org.


Import data - Mozilla Firefox
Import data
enpadasitest.science.ku.dk/gscf/importer/upload?ini
Search
Phenotype database
Hello admin !
Profile
Logout
File Upload
media > sf_H_DRIVE > Documents > 0pgaver > ENPADASI > dash-in > survey-prepare
Places
Home
Desktop
Documents
Downloads
Music
Pictures
Videos
Devices
Computer
Name
Size
Modified
dbnp Tuesday
dbnp-fs-2016-09-26 14:09
enpadasi_survey Tuesday
enpadasi_survey-1 Tuesday
opal-1 08/31/2016
revised docs Tuesday
enpadasi-logo 424 bytes 07/06/2016
ENPADASIlogo.jpg 32.5 kB 07/06/2016
enpadasi_survey.zip 4.2 MB 09/18/2016
enpadasi_survey-1.zip 2.7 MB 09/07/2016
revised docs.zip 1.8 MB 09/06/2016
SUBJECTS_DATA-enpadasitutorial_study.xlsx 23.8 kB 14:57
All Files
Open
Cancel
Template
Human intervention study
Study
abcde-code - This is the Title
Previous
Next


Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Upload file: Subjects
Choose type / Upload file / Match data / Validation / Store data
Upload file and specify parameters
Below you can upload an excel file, csv file or tab separated file. Please also specify the parameters for the import.
Upload file
Choose A File
Uploaded SUBJECTS_DATA-Sea bu...
Use data from sheet
1
Column header at line
1
Separator
,
Date format
dd/MM/yyyy (EU/India/South America/North Africa/Asia/Austral
Data preview
Name
Start group
Species
Country (humans)
Ethnicity (or strain)
Gender
Age
Initial bodyweight
Initial Body Height
BMI
Initial waist circumference
Commer
5493 1 Homo sapiens Denmark Caucasian Male 26 118.2 1.855 34 110.5
5502 1 Homo sapiens Denmark Caucasian Male 44 89.9 1.76 29 111
5506 1 Homo sapiens Denmark Caucasian Male 23 111.3 1.83 33 102.5
5491 2 Homo Denmark Caucasian Male 20 106.1 1.79 33 104.5
Showing rows 1 to 5 out of a total of 9 example rows
Parameters
Template
Human intervention study
Study
test-user-survey-12345678 - User survey - test study
Previous
Next


Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Match data
Choose type / Upload file / Match data / Validation / Store data
Match the rows and columns from your file
Below you can specify where and how to store the data you provided.
Match
Clear mapping
Name
Start group
Species
Country (humans)
[Don't import]
[Don't import]
[Don't import]
[Don't import]
5493 1 Homo sapiens Denmark
5502 1 Homo sapiens Denmark
5506 1 Homo sapiens Denmark
5491 2 Homo sapiens Denmark
5492 2 Homo sapiens Denmark
Showing rows 1 to 5 out of a total of 9 example rows
Previous
Validate
Import
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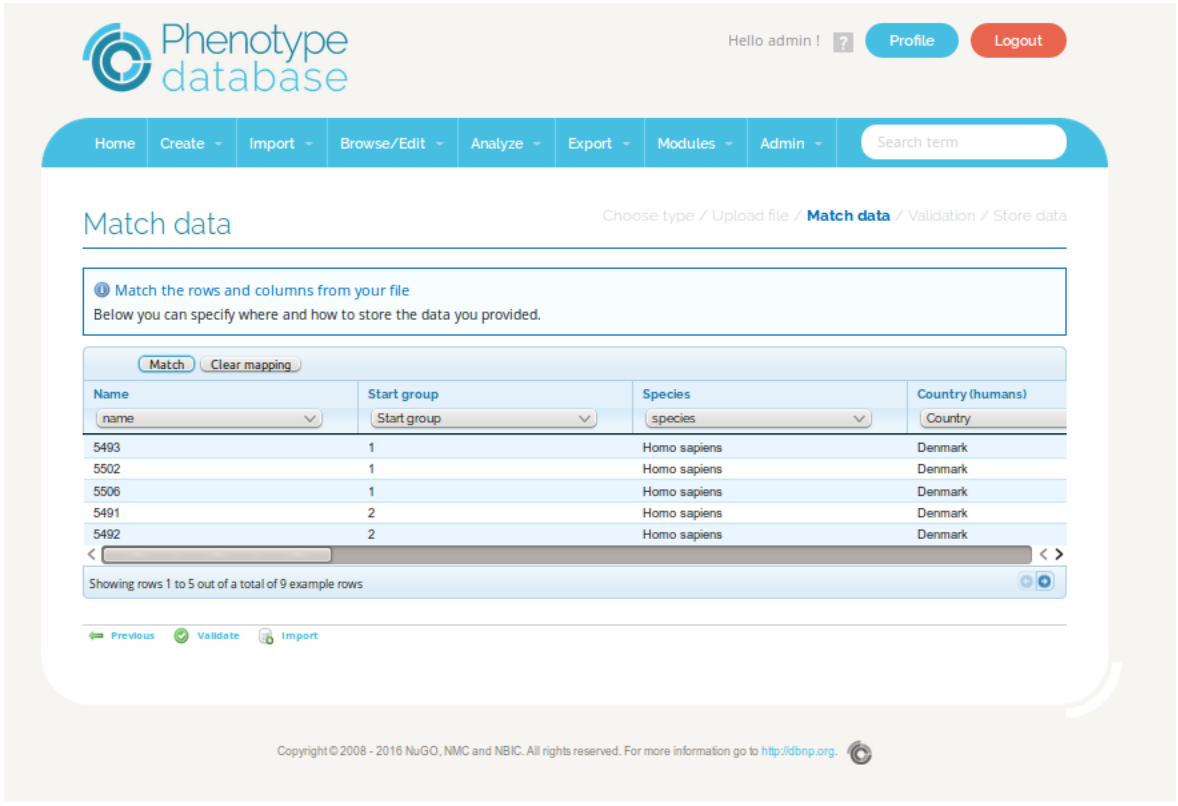
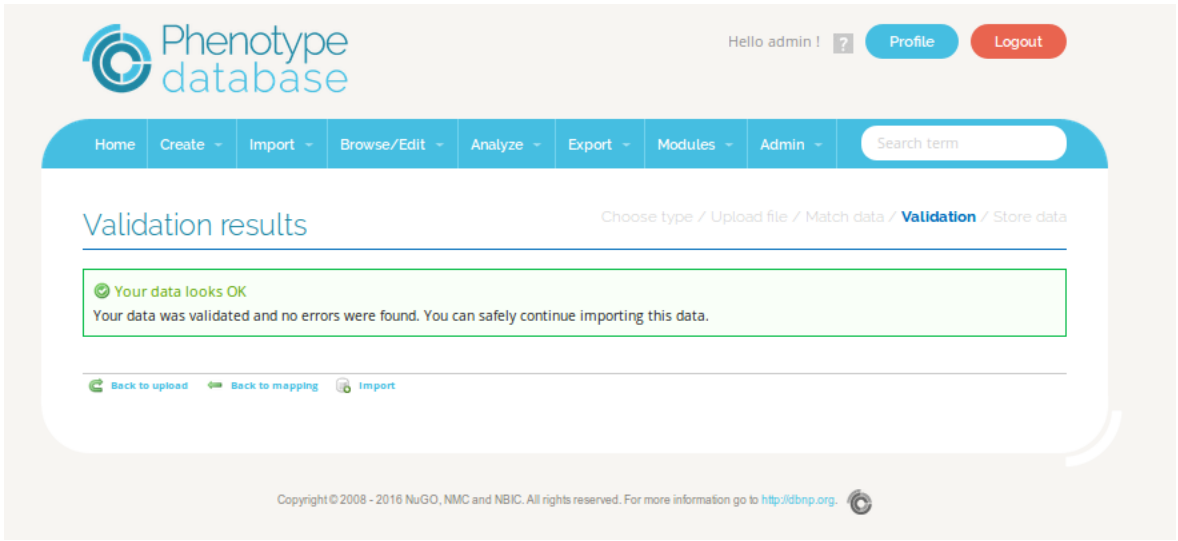

Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Match data
Choose type / Upload file / Match data / Validation / Store data
Match the rows and columns from your file
Below you can specify where and how to store the data you provided.
Match
Clear mapping
Name
Start group
Species
Country (humans)
name
Start group
species
Country
5493 1 Homo sapiens Denmark
5502 1 Homo sapiens Denmark
5506 1 Homo sapiens Denmark
5491 2 Homo sapiens Denmark
5492 2 Homo sapiens Denmark
Showing rows 1 to 5 out of a total of 9 example rows
Previous
Validate
Import
Copyright © 2008 - 2016 NuGO, NMC and NBIC. All rights reserved. For more information go to http://dbnp.org.


Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Validation results
Choose type / Upload file / Match data / Validation / Store data
Your data looks OK
Your data was validated and no errors were found. You can safely continue importing this data.
Back to upload
Back to mapping
Import
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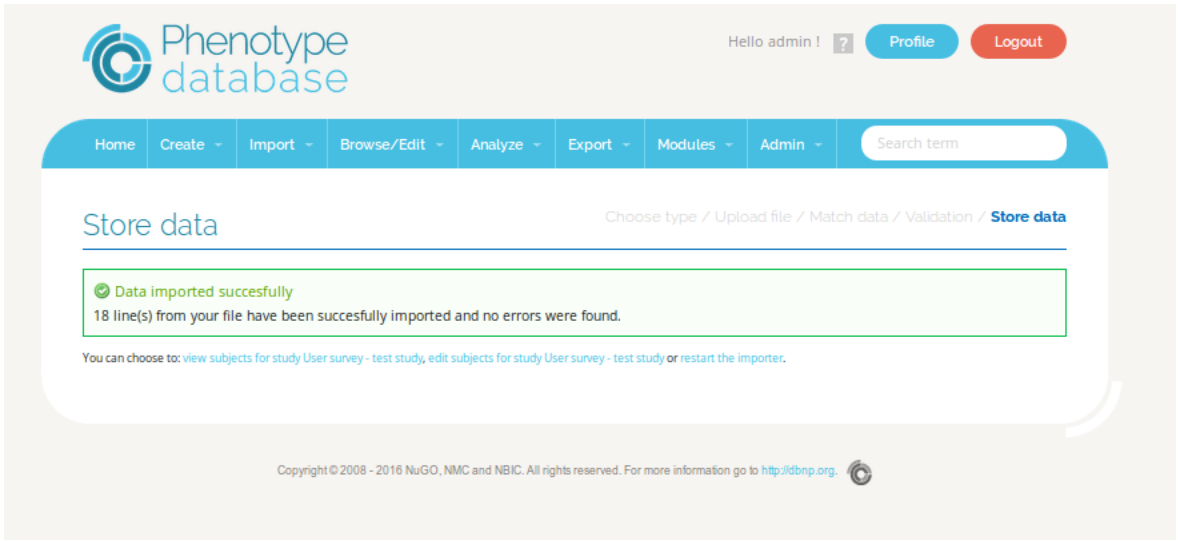
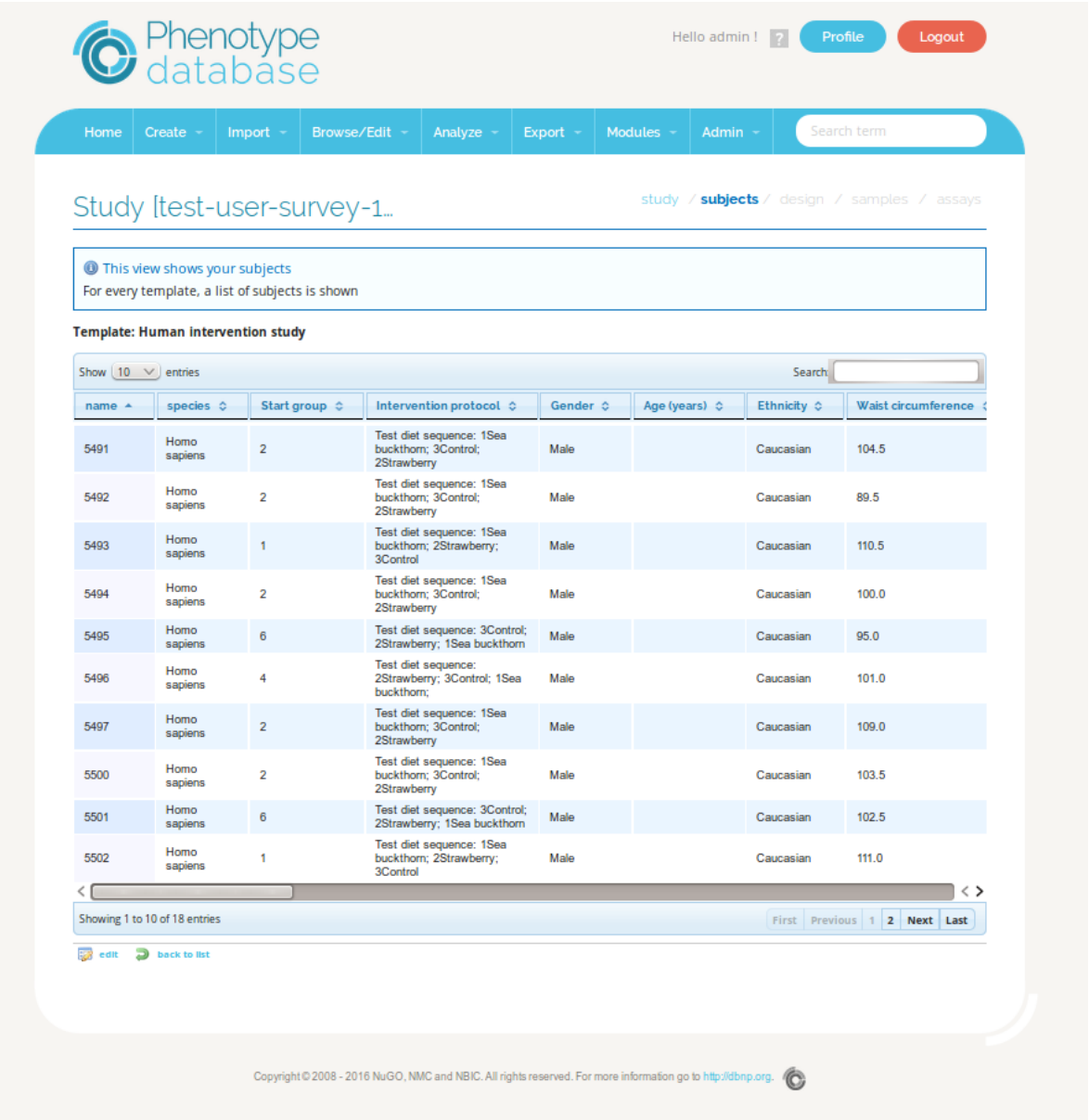

Phenotype database
Hello admin !
Profile
Logout
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Store data
Choose type / Upload file / Match data / Validation / Store data
Data imported succesfully
18 line(s) from your file have been succesfully imported and no errors were found.
You can choose to: view subjects for study User survey - test study, edit subjects for study User survey - test study or restart the importer.
Copyright © 2008 - 2016 NuGO, NMC and NBIC. All rights reserved. For more information go to http://dbnp.org.



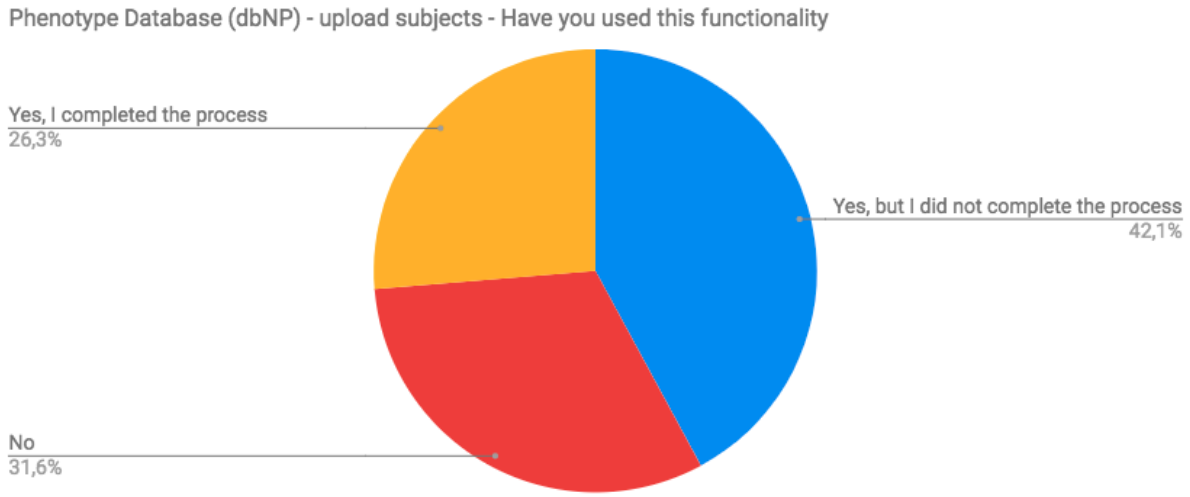
These images show the process to upload subjects to the Phenotype Database (dbNP)

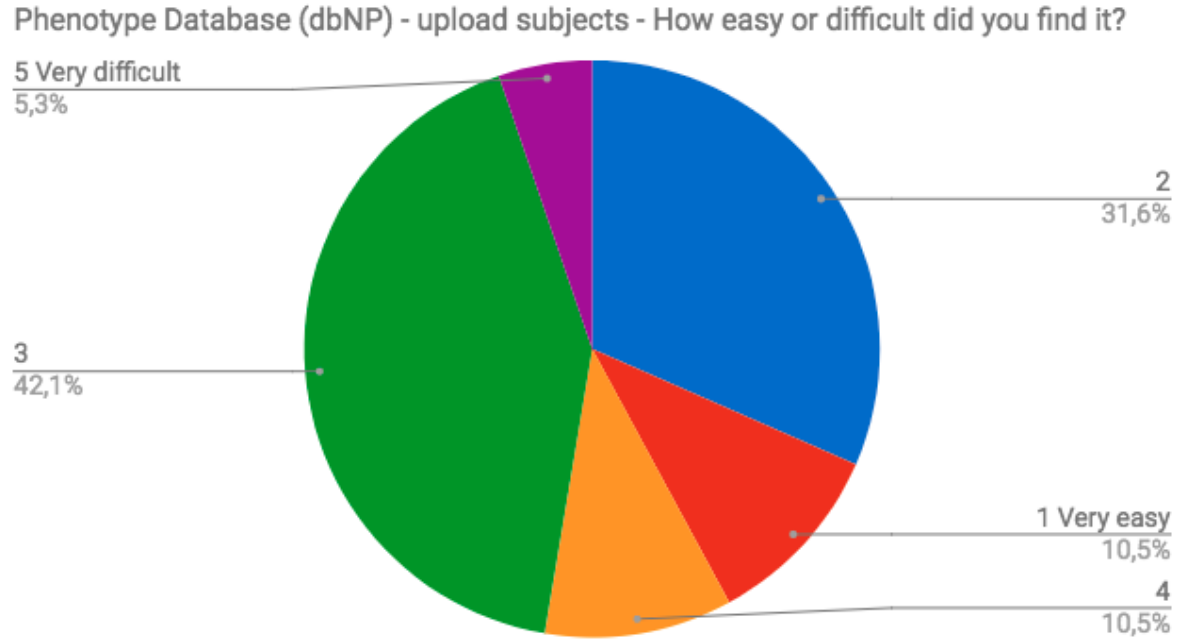
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

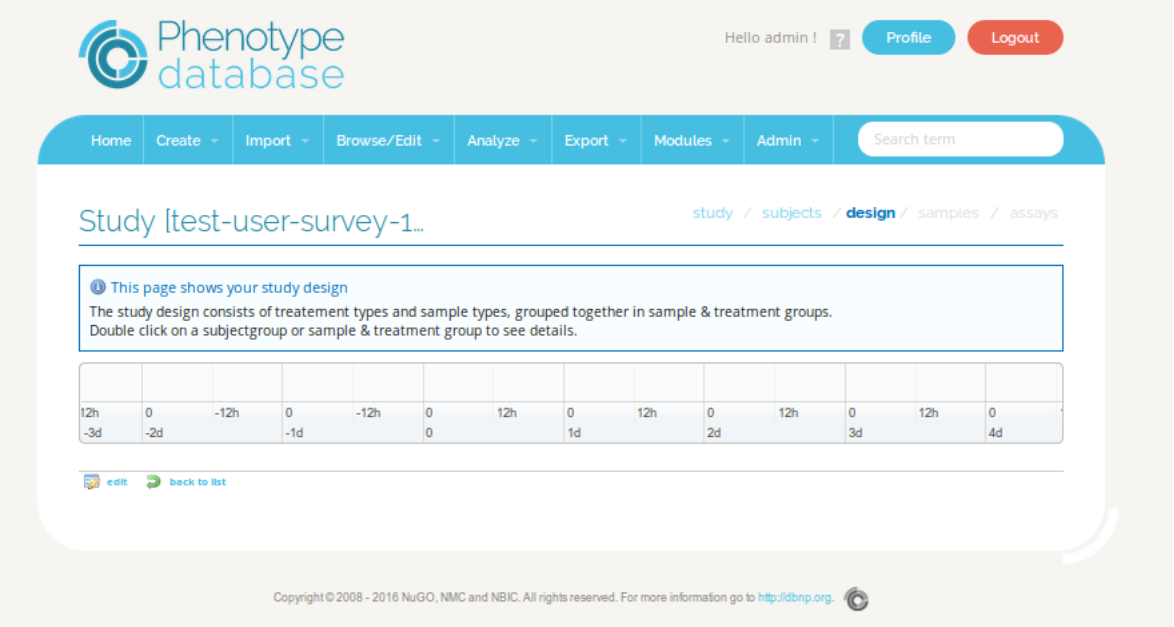
How easy or difficult is it to upload subject to the Phenotype Database (dbNP)?

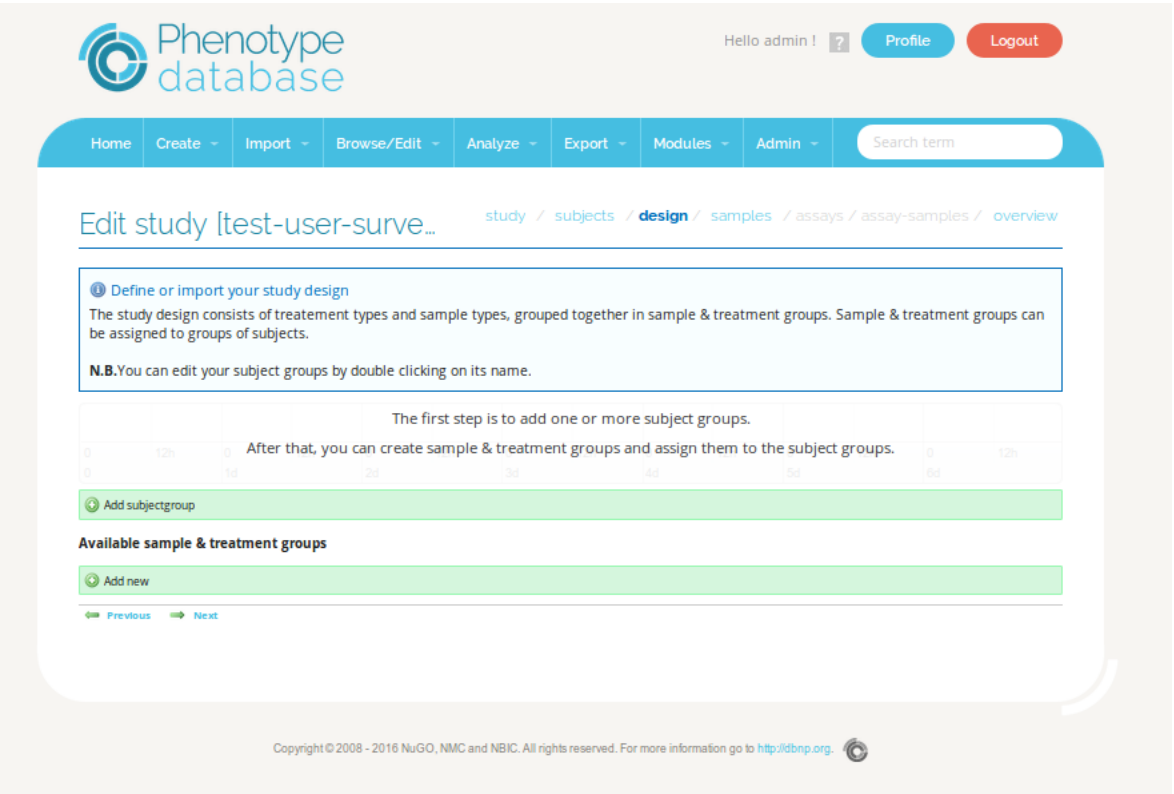
- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult

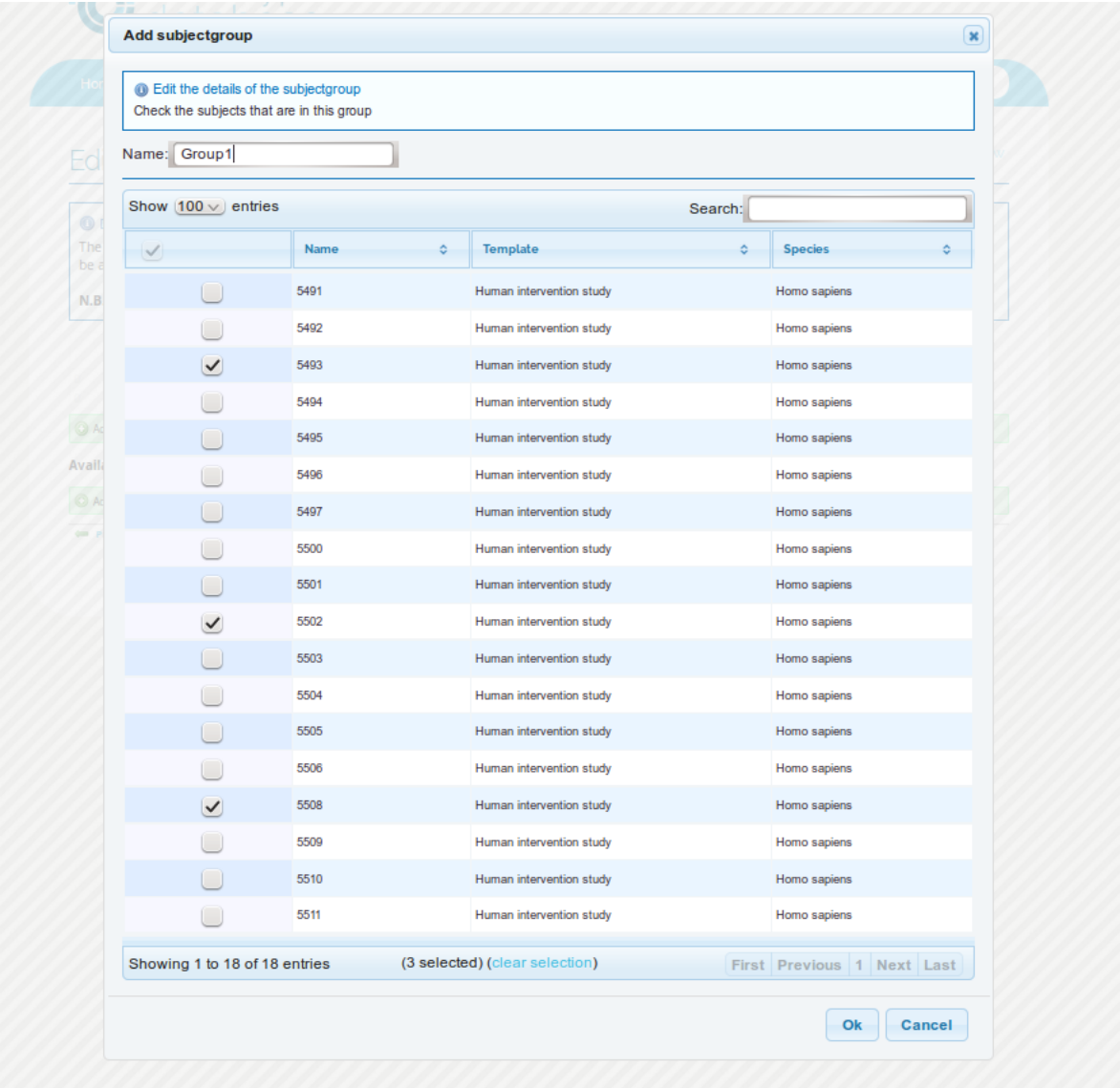

Phenotype Database (dbNP) - upload subjects - Have you used this functionality
Yes, I completed the process
26,3%
Yes, but I did not complete the process
42,1%
No
31,6%

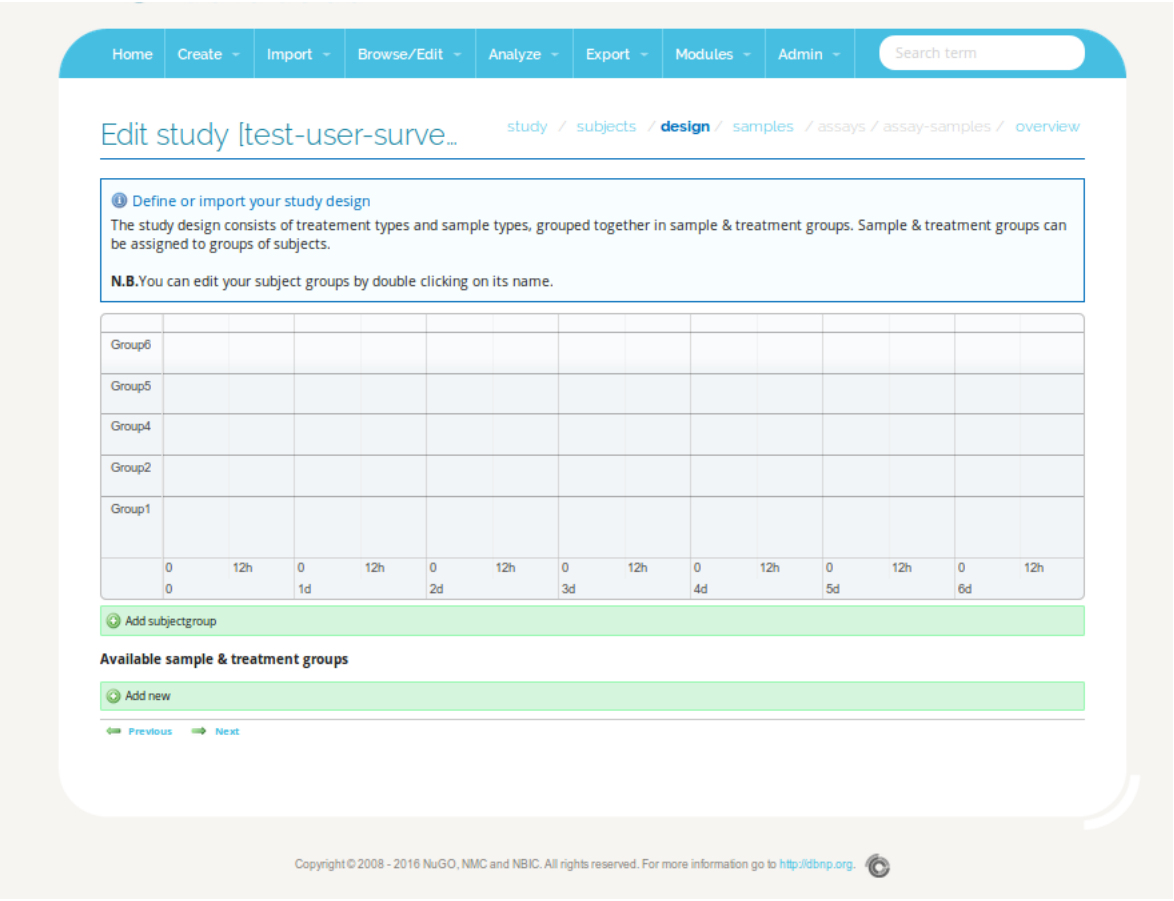

Phenotype Database (dbNP) - upload subjects - How easy or difficult did you find it?
5 Very difficult
5,3%
2
31,6%
3
42,1%
1 Very easy
10,5%
4
10,5%

PHENOTYPE DATABASE (DBNP) – STUDY DESIGN, ADD SUBJECT GROUPS






Add subjectgroup
Edit the details of the subjectgroup
Check the subjects that are in this group
Name: Group1
Show 100 entries
Search:
Name
Template
Species
5491 Human intervention study Homo sapiens
5492 Human intervention study Homo sapiens
5493 Human intervention study Homo sapiens
5494 Human intervention study Homo sapiens
5495 Human intervention study Homo sapiens
5496 Human intervention study Homo sapiens
5497 Human intervention study Homo sapiens
5500 Human intervention study Homo sapiens
5501 Human intervention study Homo sapiens
5502 Human intervention study Homo sapiens
5503 Human intervention study Homo sapiens
5504 Human intervention study Homo sapiens
5505 Human intervention study Homo sapiens
5506 Human intervention study Homo sapiens
5508 Human intervention study Homo sapiens
5509 Human intervention study Homo sapiens
5510 Human intervention study Homo sapiens
5511 Human intervention study Homo sapiens
Showing 1 to 18 of 18 entries
(3 selected) (clear selection)
First Previous 1 Next Last
Ok
Cancel


Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Edit study [test-user-surve...
study / subjects / design / samples / assays / assay-samples / overview
Define or import your study design
The study design consists of treatement types and sample types, grouped together in sample & treatment groups. Sample & treatment groups can be assigned to groups of subjects.
N.B.You can edit your subject groups by double clicking on its name.
Group6
Group5
Group4
Group2
Group1
0 12h 0 12h 0 12h 0 12h 0 12h 0 12h 0 12h
0 1d 2d 3d 4d 5d 6d
Add subjectgroup
Available sample & treatment groups
Add new
Previous
Next
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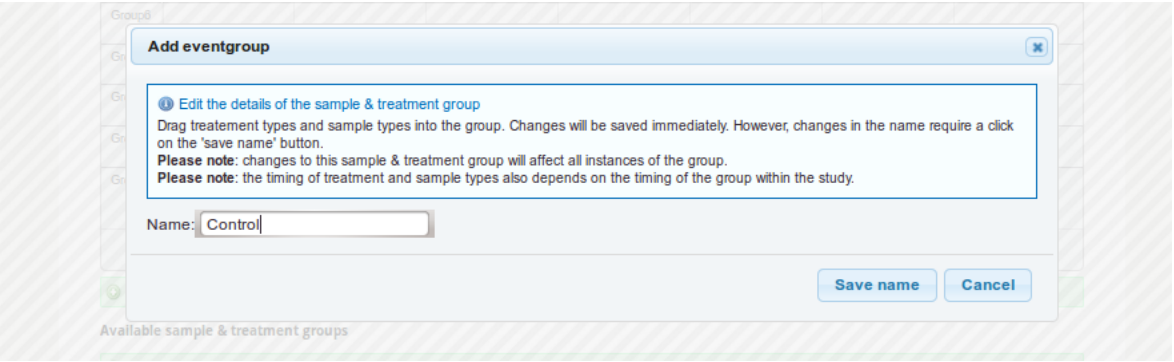
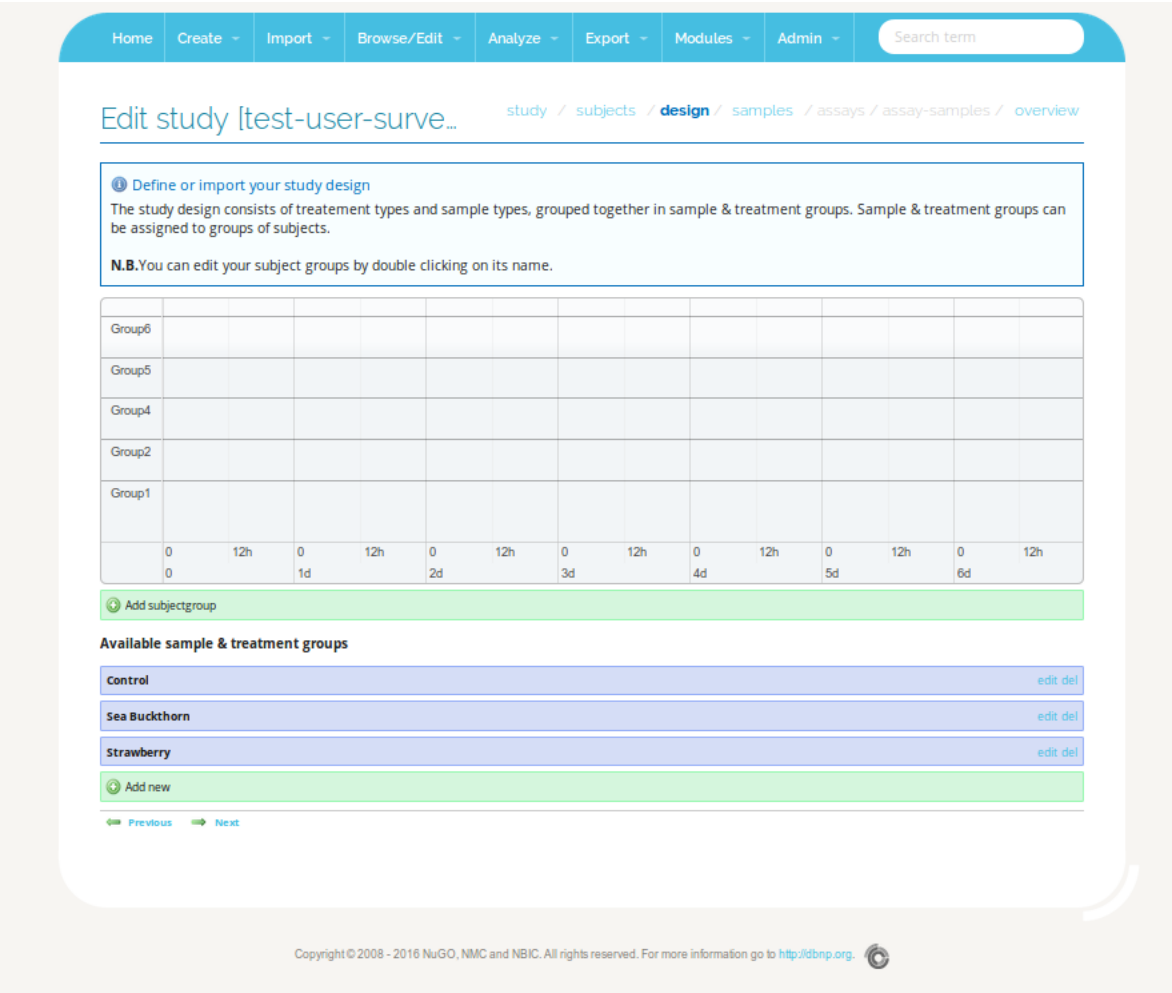

Add eventgroup
Edit the details of the sample & treatment group
Drag treatement types and sample types into the group. Changes will be saved immediately. However, changes in the name require a click on the 'save name' button.
Please note: changes to this sample & treatment group will affect all instances of the group.
Please note: the timing of treatment and sample types also depends on the timing of the group within the study.
Name: Control
Save name
Cancel
Available sample & treatment groups



These images show the process to study design, add subject groups to a study design in the Phenotype Database (dbNP)

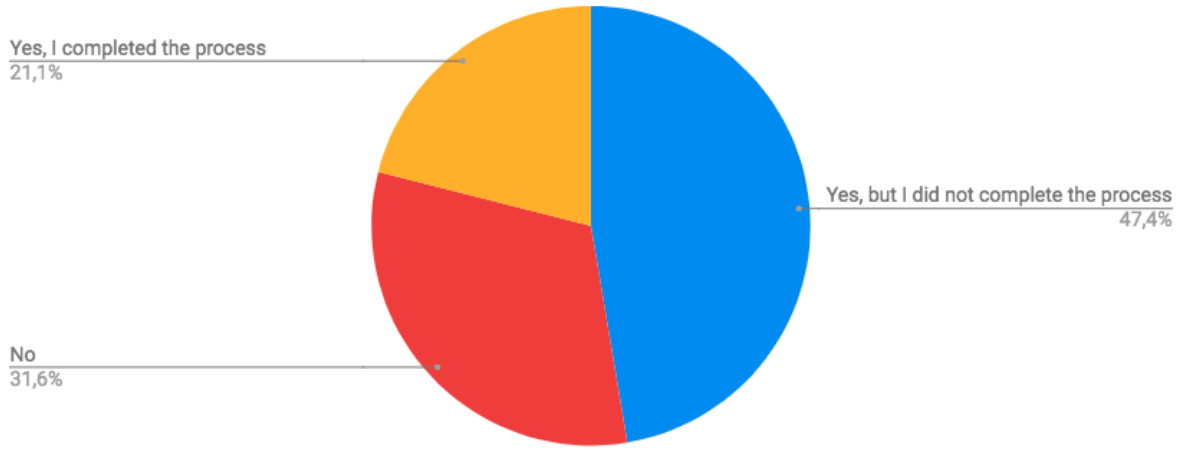
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

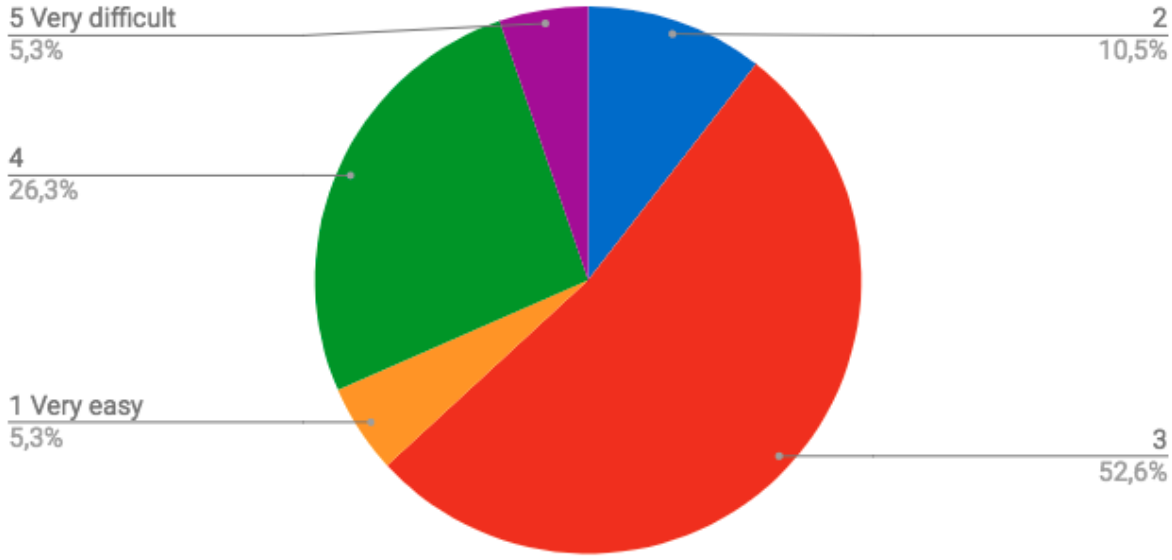
How easy or difficult is it to add subject groups to a study design in the Phenotype Database (dbNP)?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult

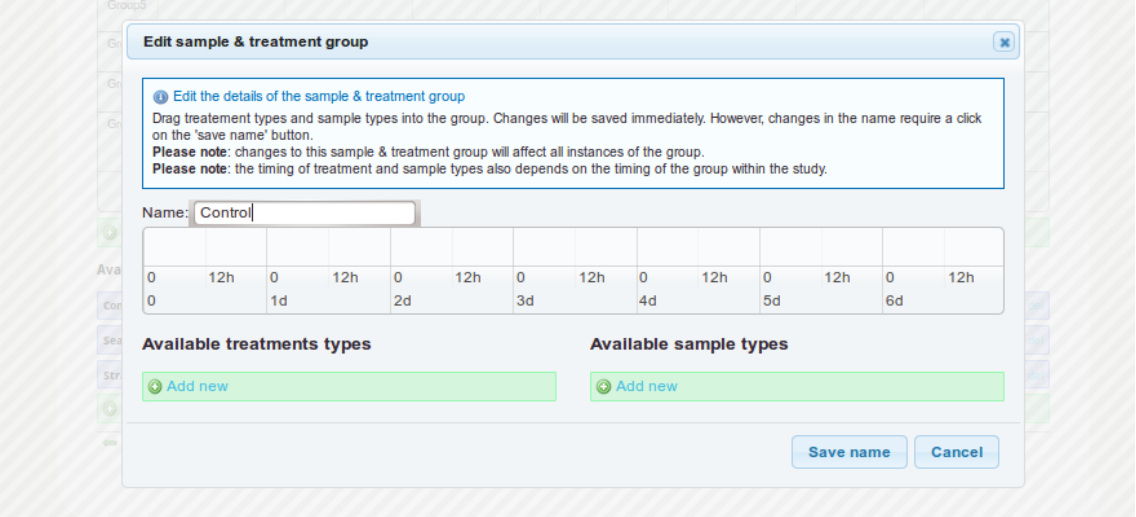
Phenotype Database (dbNP) - study design, add subject groups - Have you used this functionality

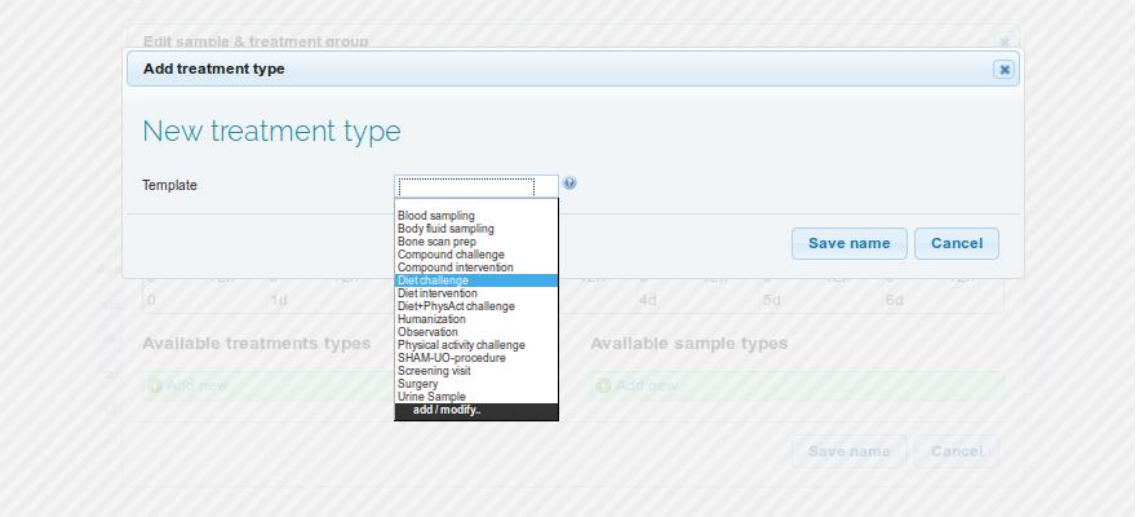


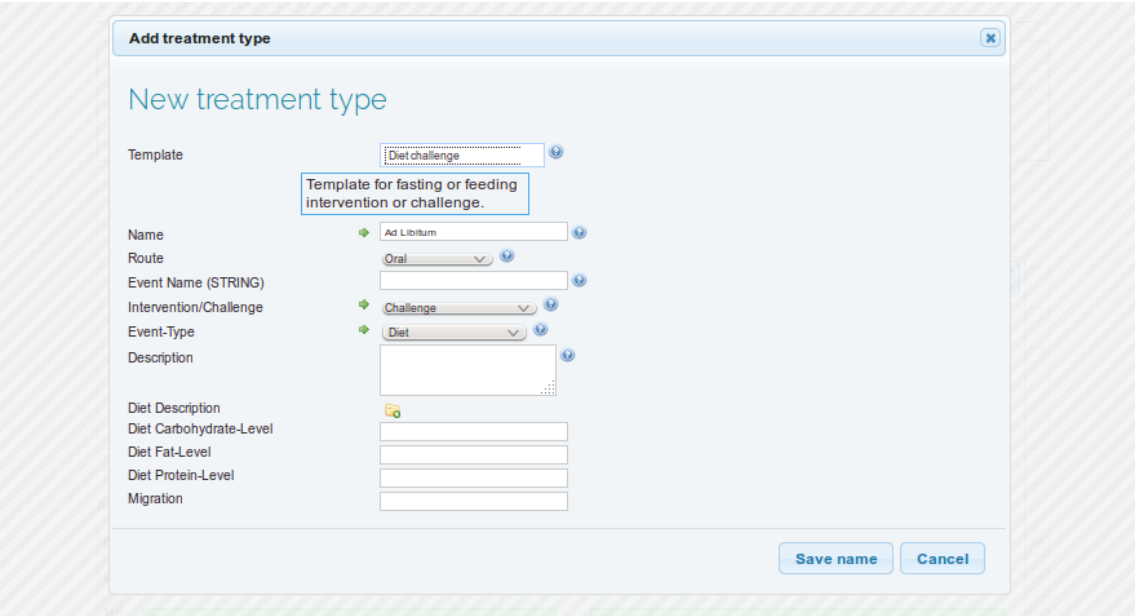
Phenotype Database (dbNP) - study design, add subject groups - How easy or difficult did you find it?

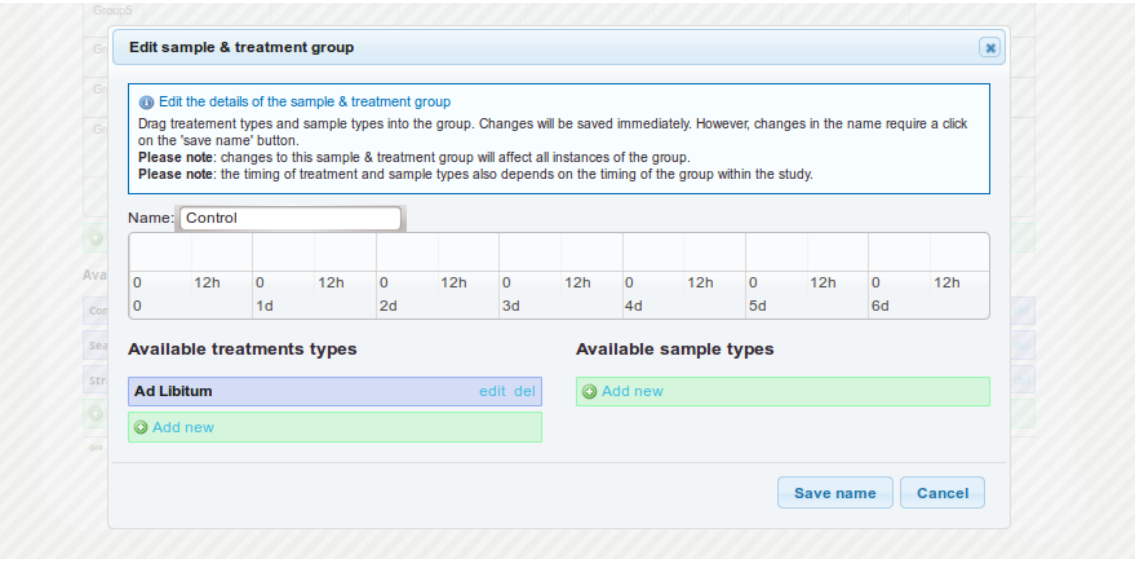


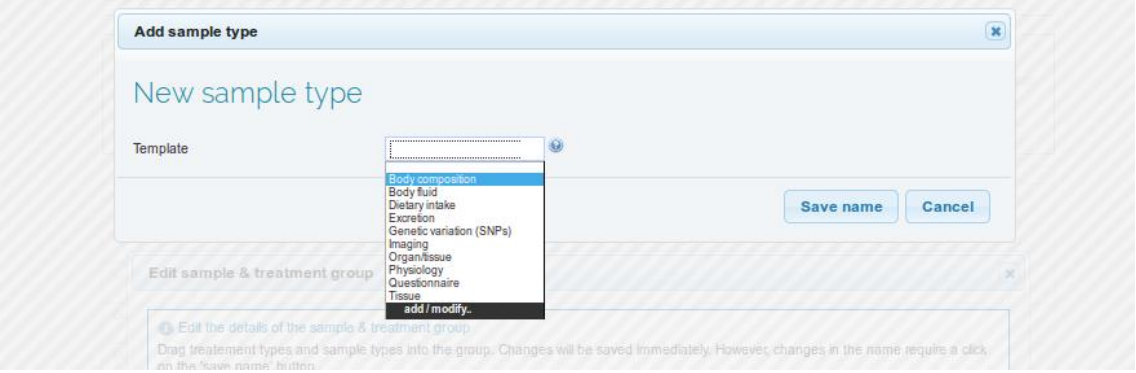
PHENOTYPE DATABASE (DBNP) – ADD TREATMENT TYPES AND SAMPLE TYPES

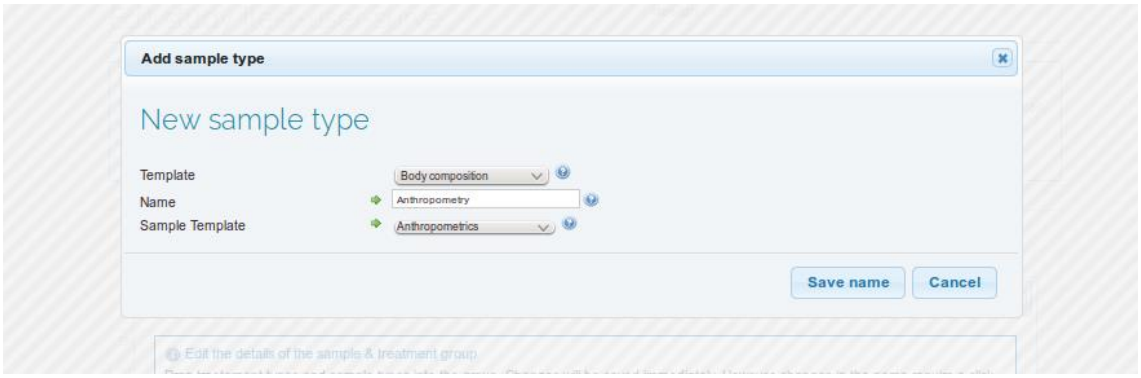


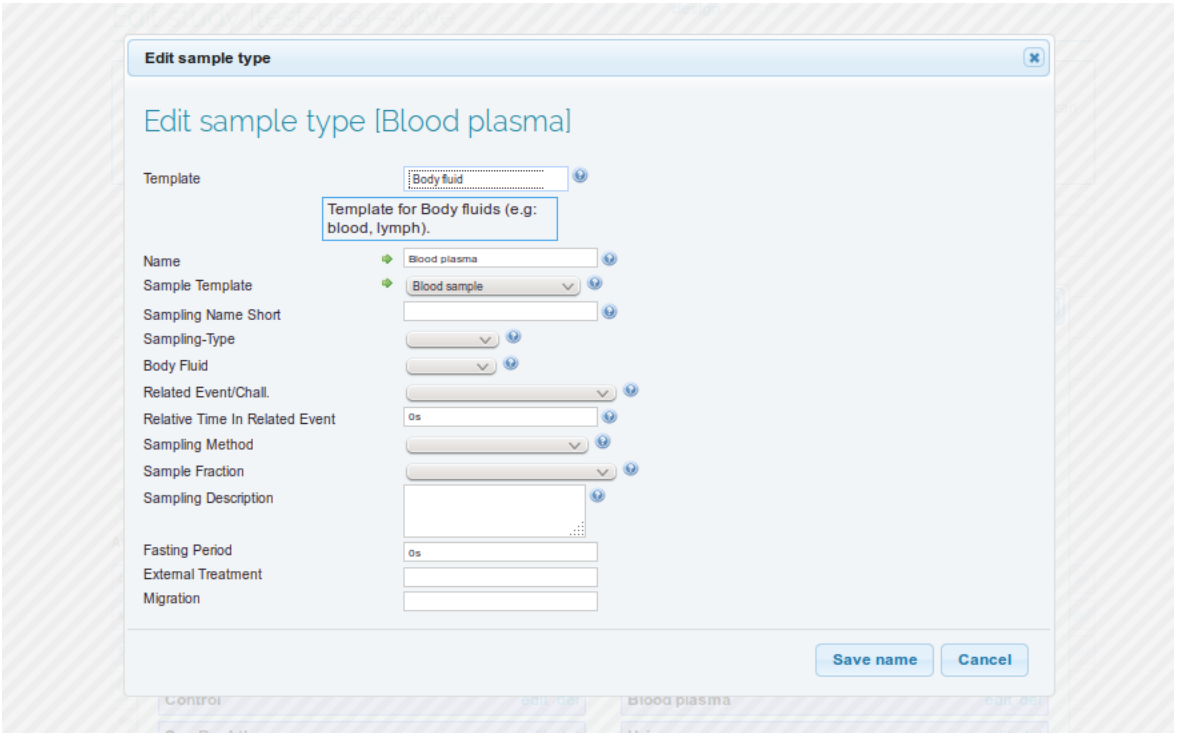


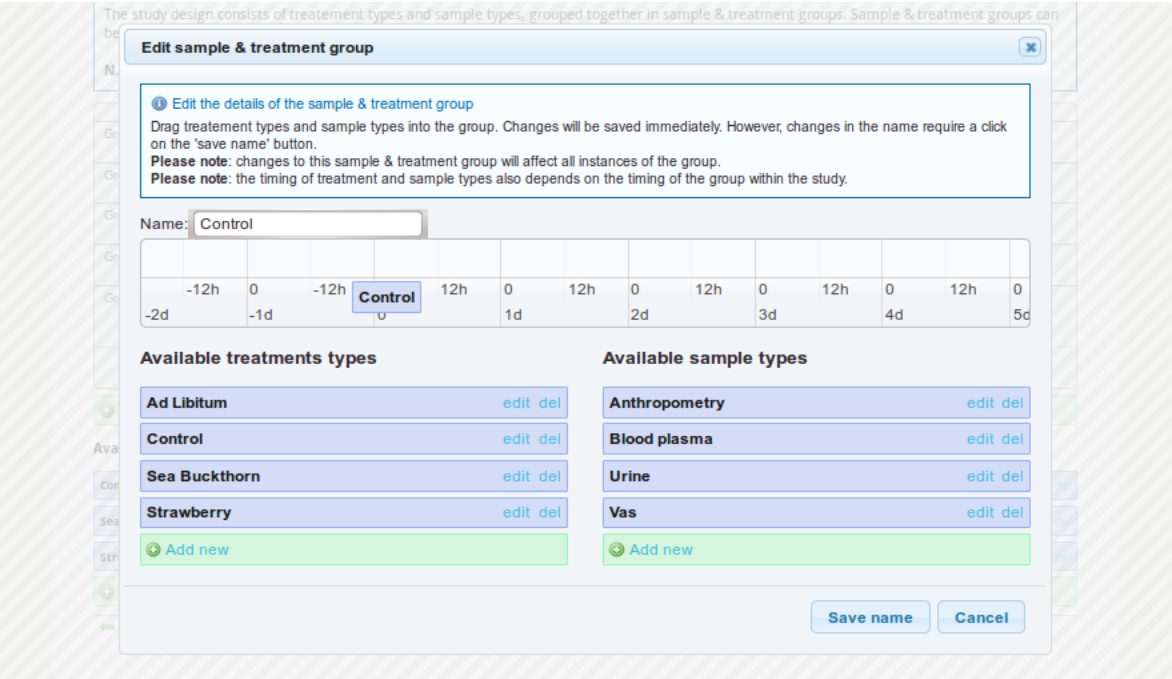

Add treatment type
New treatment type
Template
Diet challenge
Template for fasting or feeding intervention or challenge.
Name
Ad Libitum
Route
Oral
Event Name (STRING)
Intervention/Challenge
Challenge
Event-Type
Diet
Description
Diet Description
Diet Carbohydrate-Level
Diet Fat-Level
Diet Protein-Level
Migration
Save name
Cancel


Edit sample & treatment group
Edit the details of the sample & treatment group
Drag treatement types and sample types into the group. Changes will be saved immediately. However, changes in the name require a click on the 'save name' button.
Please note: changes to this sample & treatment group will affect all instances of the group.
Please note: the timing of treatment and sample types also depends on the timing of the group within the study.
Name: Control
0 12h 0 12h 0 12h 0 12h 0 12h 0 12h 0 12h
0 1d 2d 3d 4d 5d 6d
Available treatments types
Ad Libitum edit del
Add new
Available sample types
Add new
Save name
Cancel


Add sample type
New sample type
Template
Body composition
Body fluid
Dietary intake
Excretion
Genetic variation (SNPs)
Imaging
Organ/tissue
Physiology
Questionnaire
Tissue
add / modify..
Save name
Cancel


Add sample type
New sample type
Template
Body composition
Name
Anthropometry
Sample Template
Anthropometrics
Save name
Cancel


Edit sample type
Edit sample type [Blood plasma]
Template
Body fluid
Template for Body fluids (e.g: blood, lymph).
Name
Blood plasma
Sample Template
Blood sample
Sampling Name Short
Sampling-Type
Body Fluid
Related Event/Chall.
Relative Time In Related Event
0s
Sampling Method
Sample Fraction
Sampling Description
Fasting Period
0s
External Treatment
Migration
Save name
Cancel



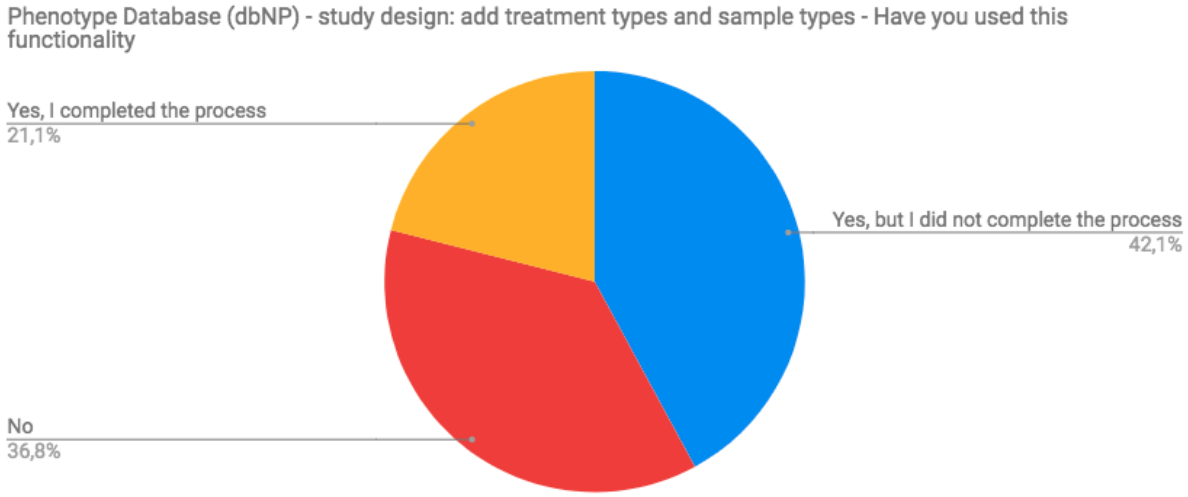
These images show the process to add treatment types and sample types to a study design in the Phenotype Database (dbNP)

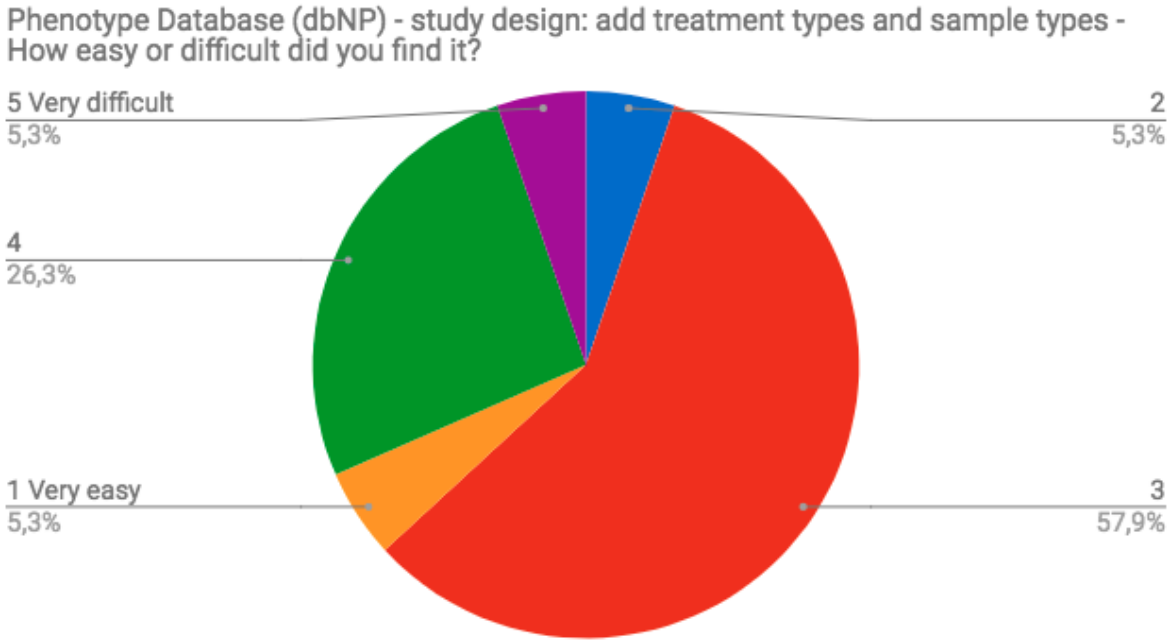
Have you used this functionality?

- No
- Yes, but I did not complete the process
- Yes, I completed the process

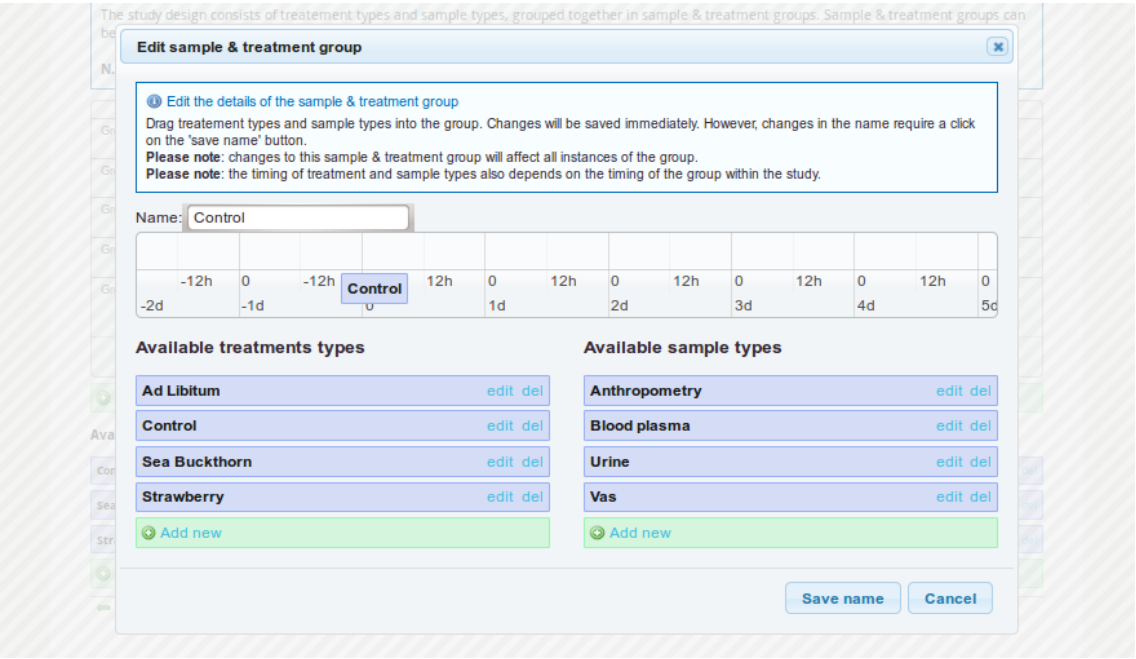
How easy or difficult is it to add treatment types and sample types to a study design in the Phenotype Database (dbNP)?

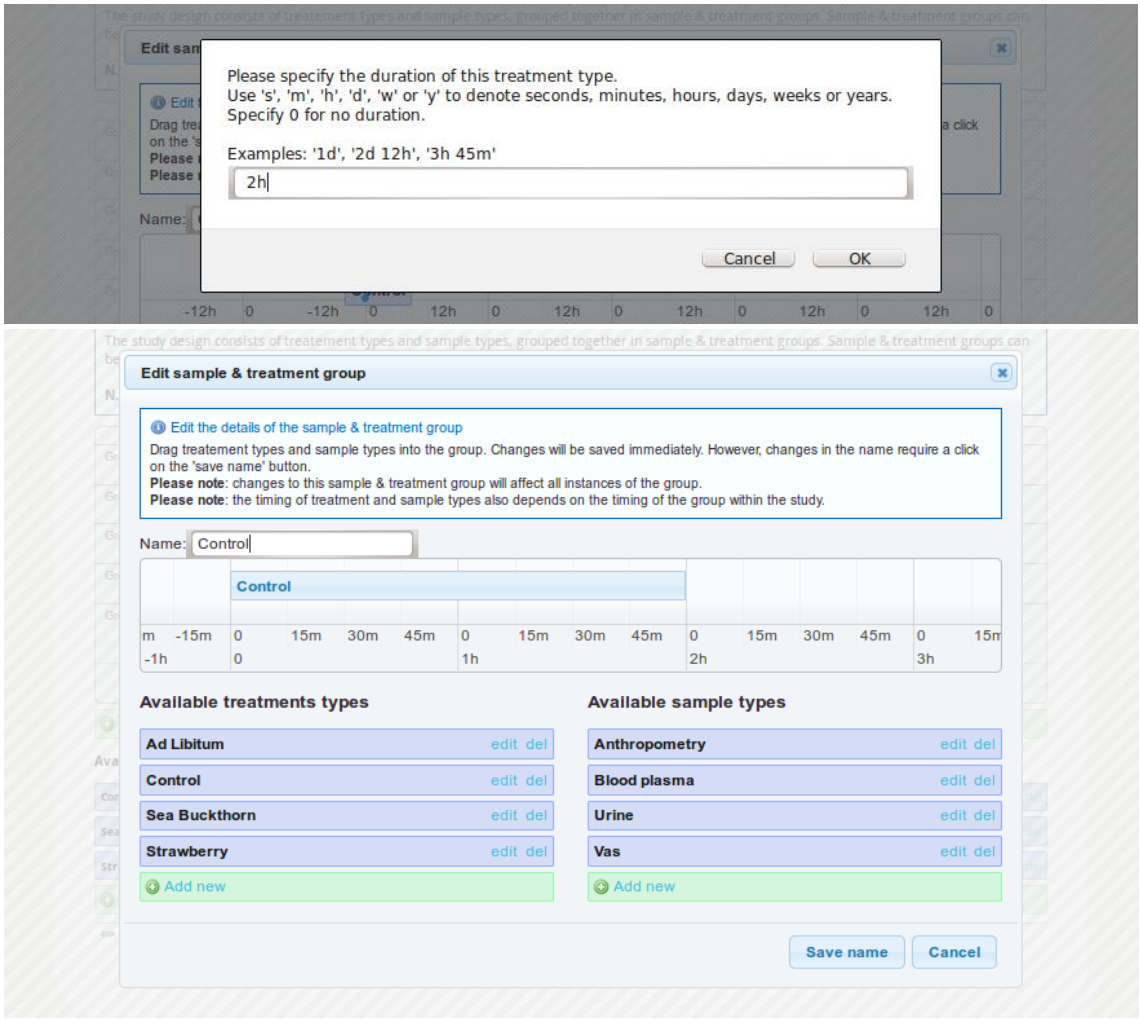
- 1 Very easy
- 2
- 3
- 4
- 5 Very difficult

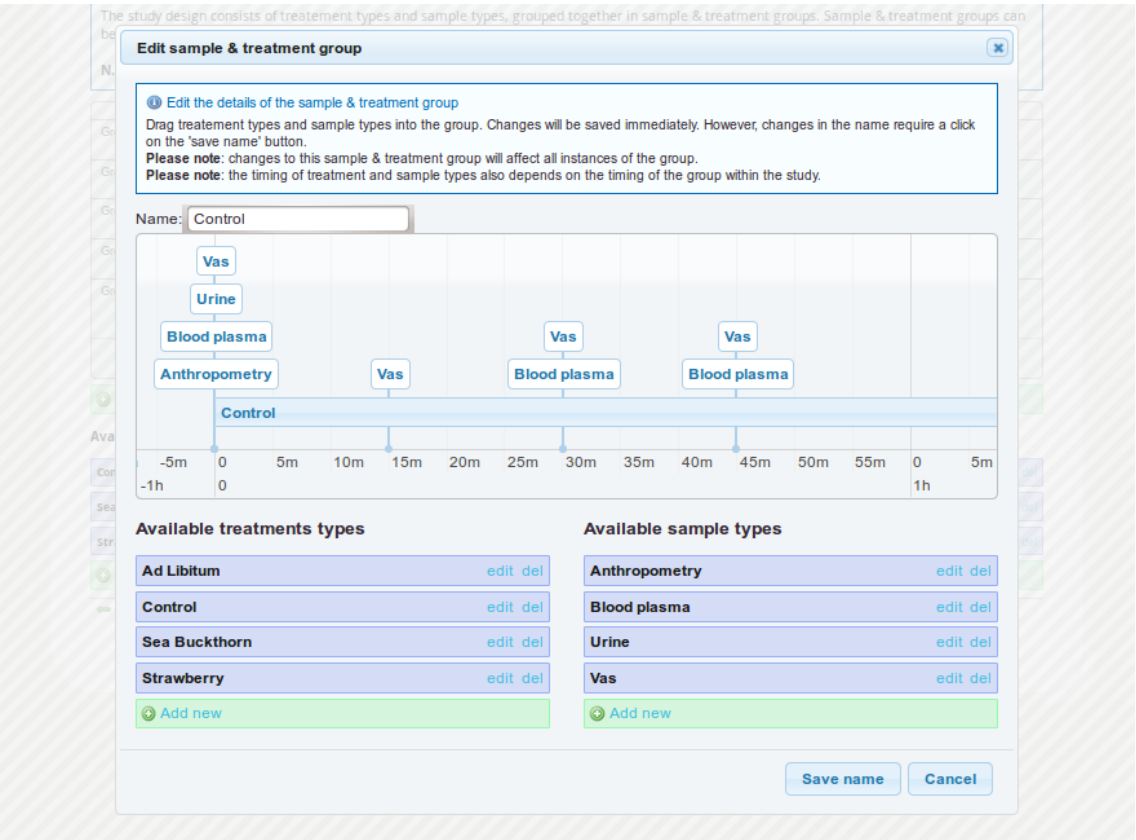


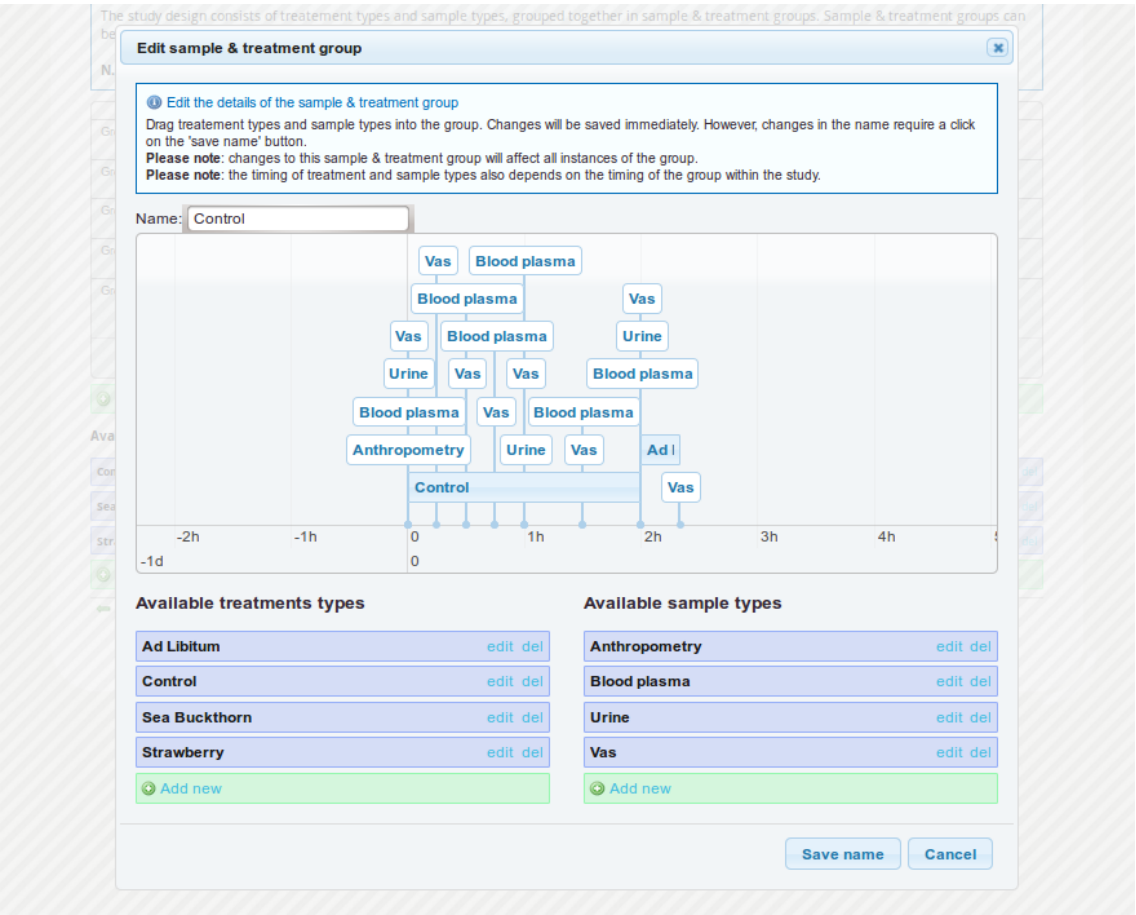


PHENOTYPE DATABASE (DBNP) – CREATE STUDY DESIGN FOR A SINGLE SUBJECT GROUP




Please specify the duration of this treatment type.
Use 's', 'm', 'h', 'd', 'w' or 'y' to denote seconds, minutes, hours, days, weeks or years.
Specify 0 for no duration.
Examples: '1d', '2d 12h', '3h 45m'
2h
Cancel
OK
Edit sample & treatment group
Edit the details of the sample & treatment group
Drag treatement types and sample types into the group. Changes will be saved immediately. However, changes in the name require a click on the 'save name' button.
Please note: changes to this sample & treatment group will affect all instances of the group.
Please note: the timing of treatment and sample types also depends on the timing of the group within the study.
Name: Control
Control
Available treatments types
Ad Libitum edit del
Control edit del
Sea Buckthorn edit del
Strawberry edit del
Add new
Available sample types
Anthropometry edit del
Blood plasma edit del
Urine edit del
Vas edit del
Add new
Save name
Cancel


Edit sample & treatment group
Edit the details of the sample & treatment group
Drag treatement types and sample types into the group. Changes will be saved immediately. However, changes in the name require a click on the 'save name' button.
Please note: changes to this sample & treatment group will affect all instances of the group.
Please note: the timing of treatment and sample types also depends on the timing of the group within the study.
Name: Control
Vas
Urine
Blood plasma
Anthropometry
Vas
Vas
Blood plasma
Vas
Blood plasma
Control
-5m 0 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m 55m 0 5m
-1h 0 1h
Available treatments types
Ad Libitum edit del
Control edit del
Sea Buckthorn edit del
Strawberry edit del
Add new
Available sample types
Anthropometry edit del
Blood plasma edit del
Urine edit del
Vas edit del
Add new
Save name
Cancel



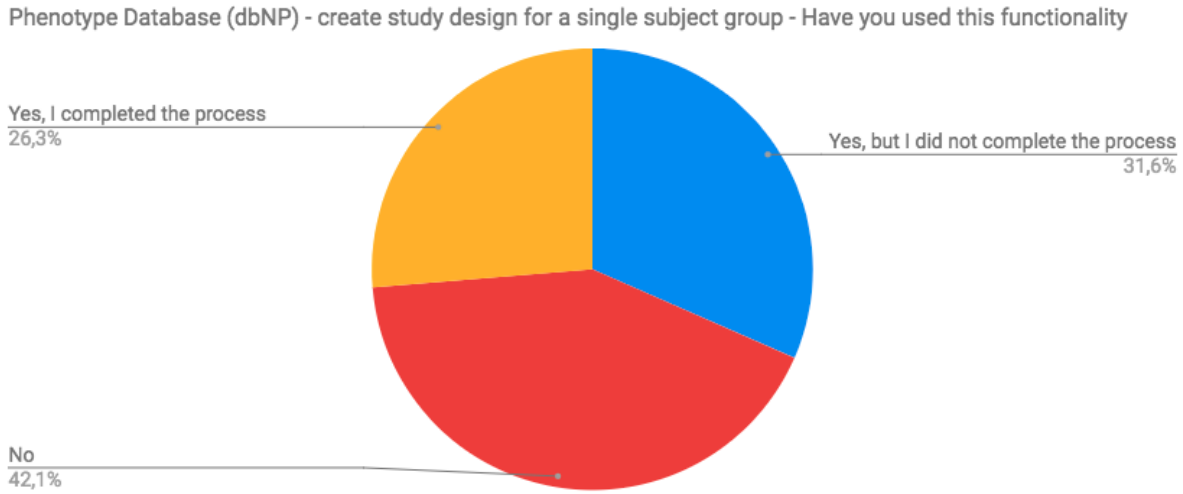
These images show the process to create a study design for a single subject group in the Phenotype Database (dbNP)

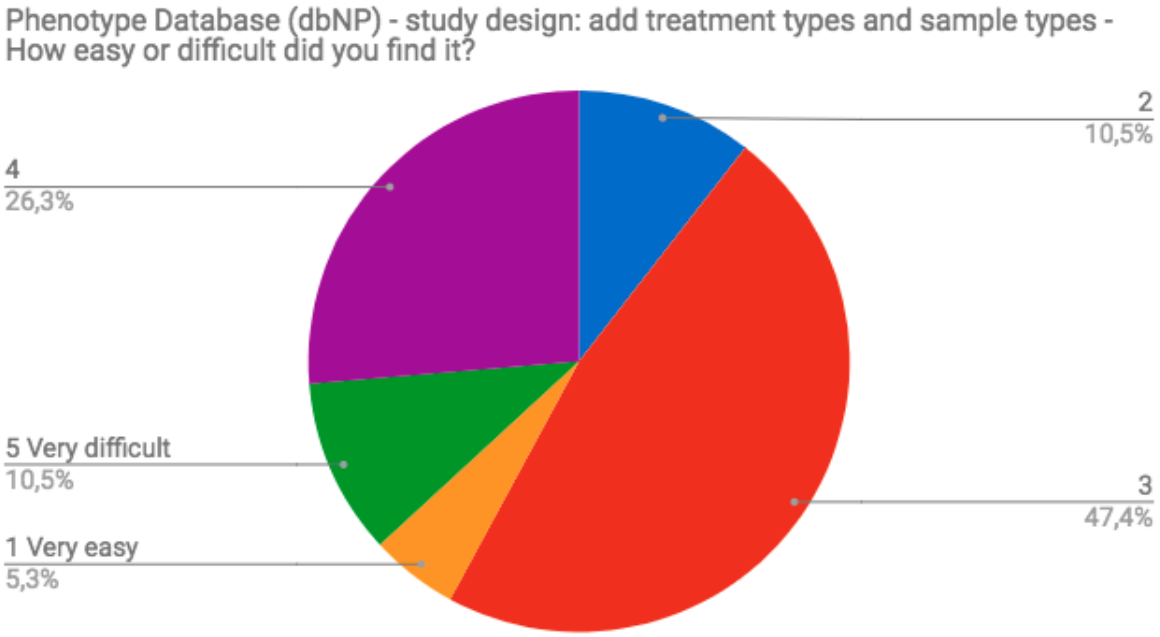
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

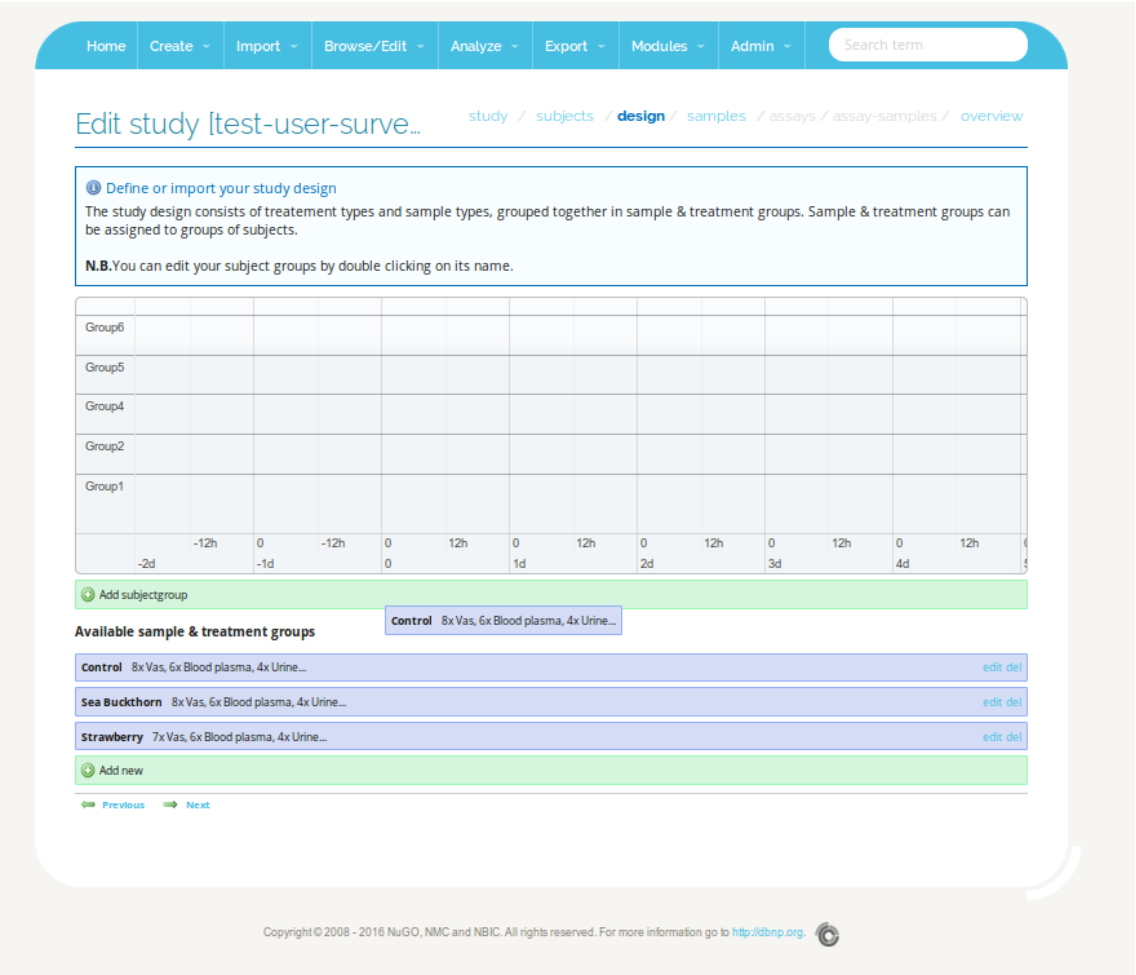
How easy or difficult is it to create a study design for a single subject group in the Phenotype Database (dbNP)?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult





PHENOTYPE DATABASE (DBNP) – CREATE OVER-ALL STUDY DESIGN


Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Edit study [test-user-surve...
study / subjects / design / samples / assays / assay-samples / overview
Define or import your study design
The study design consists of treatement types and sample types, grouped together in sample & treatment groups. Sample & treatment groups can be assigned to groups of subjects.
N.B.You can edit your subject groups by double clicking on its name.
Group6
Group5
Group4
Group2
Group1
-12h
0
12h
-2d
-1d
0
1d
2d
3d
4d
Add subjectgroup
Control 8x Vas, 6x Blood plasma, 4x Urine...
Available sample & treatment groups
Control 8x Vas, 6x Blood plasma, 4x Urine...
edit del
Sea Buckthorn 8x Vas, 6x Blood plasma, 4x Urine...
edit del
Strawberry 7x Vas, 6x Blood plasma, 4x Urine...
edit del
Add new
Previous
Next
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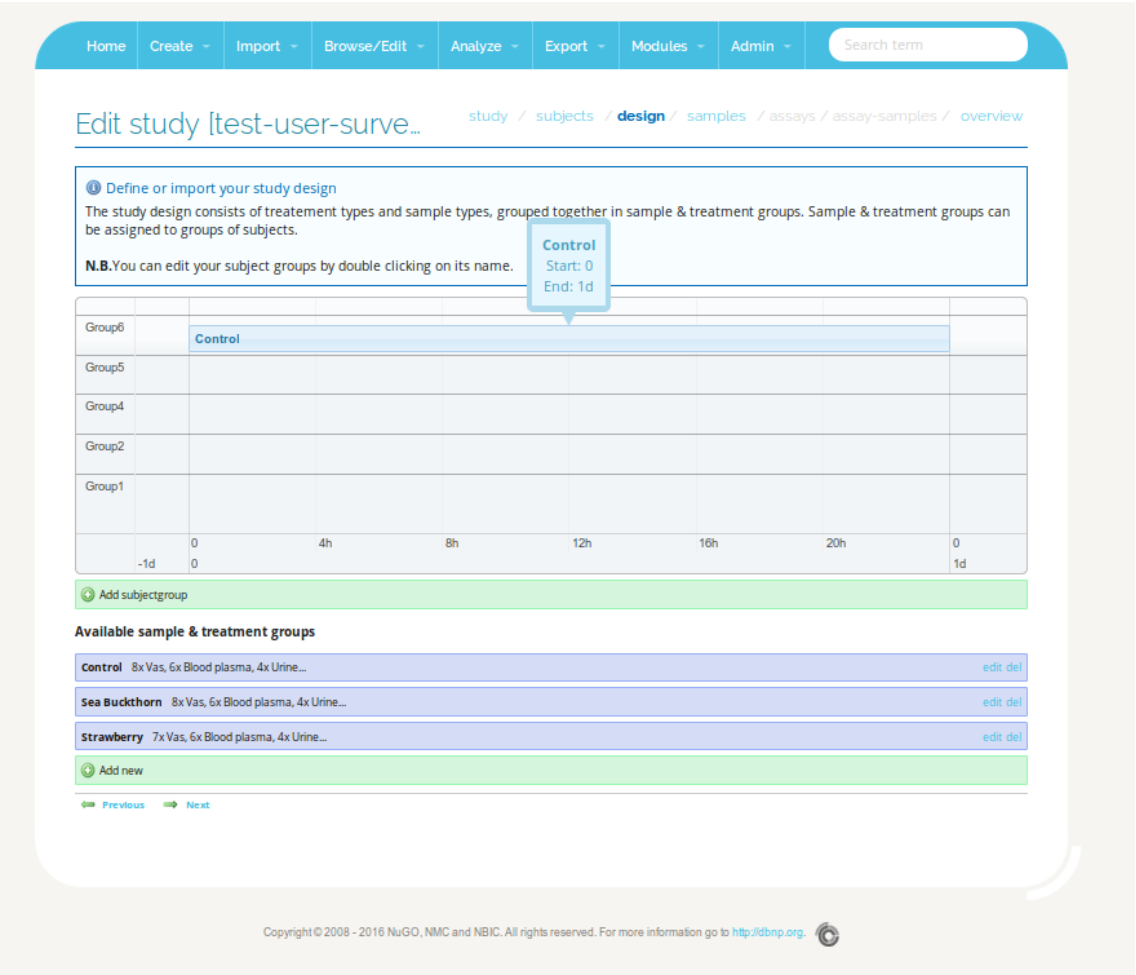
Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Edit study [test-user-surve...
study / subjects / design / samples / assays / assay-samples / overview
Define or import your study design
The study design consists of treatement types and sample types, grouped together in sample & treatment groups. Sample & treatment groups can be assigned to groups of subjects.
N.B.You can edit your subject groups by double clicking on its name.
Control
Start: 0
End: 1d
Group6
Control
Group5
Group4
Group2
Group1
-1d
0
0
4h
8h
12h
16h
20h
0
1d
Add subjectgroup
Available sample & treatment groups
Control 8x Vas, 6x Blood plasma, 4x Urine...
edit del
Sea Buckthorn 8x Vas, 6x Blood plasma, 4x Urine...
edit del
Strawberry 7x Vas, 6x Blood plasma, 4x Urine...
edit del
Add new
Previous
Next
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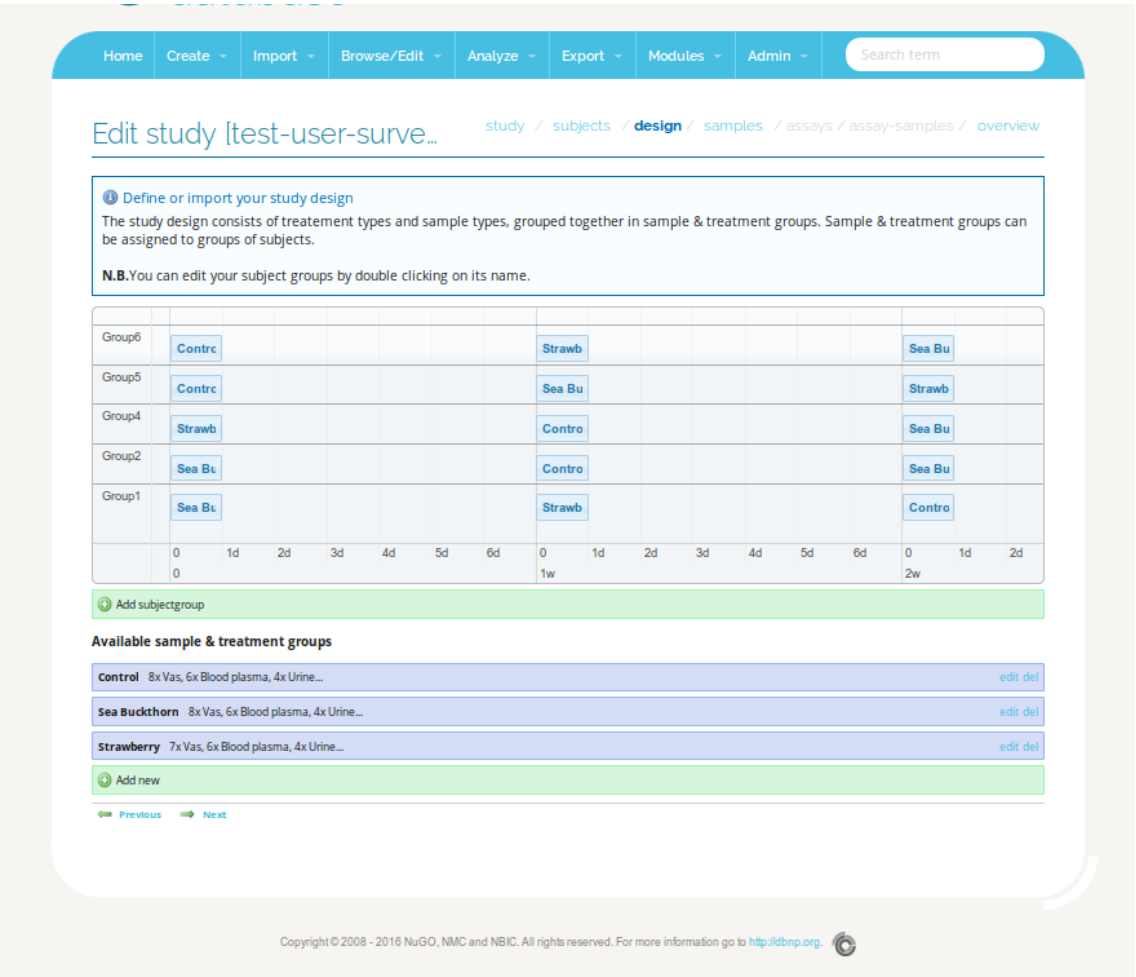


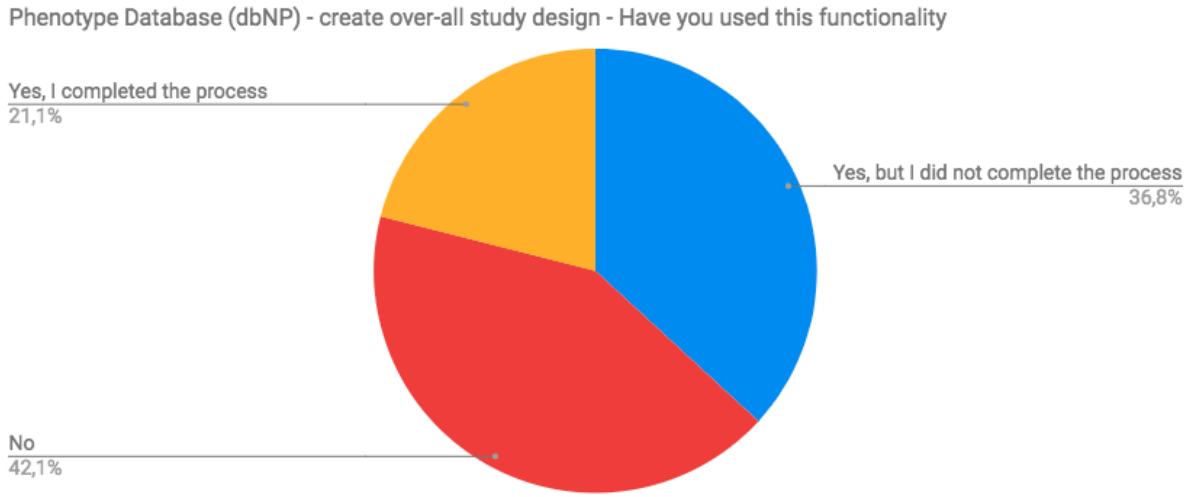
These images show the process to create the over-all study design in the Phenotype Database (dbNP)

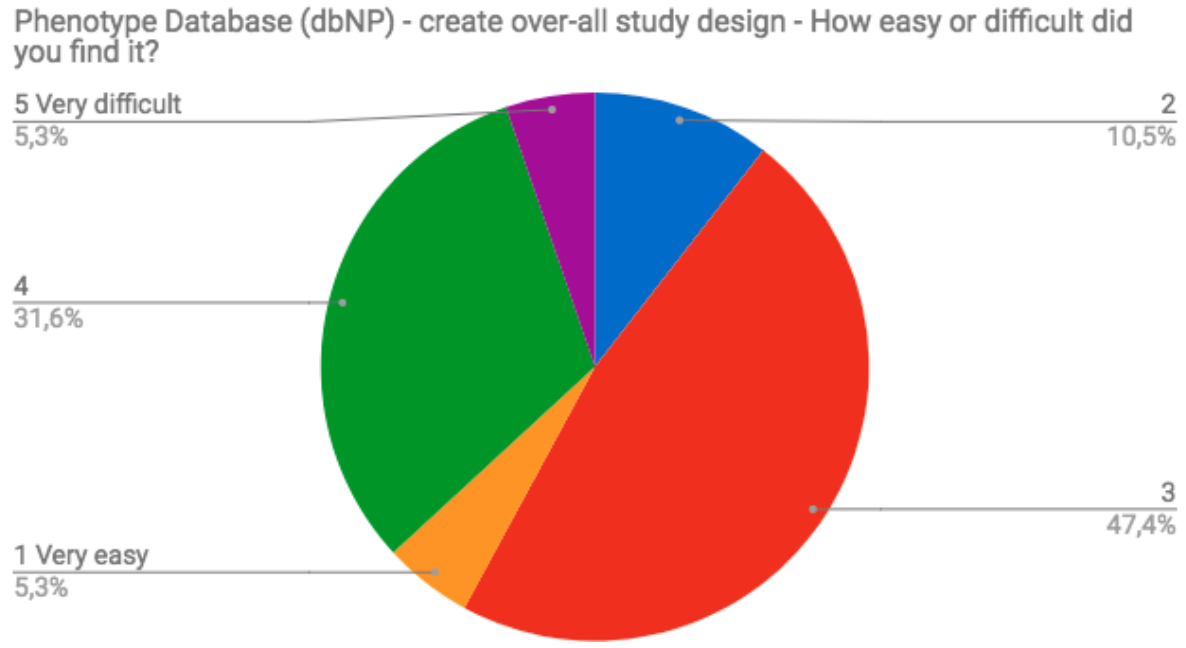
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

How easy or difficult is it to create the over-all study design in the Phenotype Database (dbNP)?

- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult





PHENOTYPE DATABASE (DBNP) – GENERATE SAMPLES

Home
Create
Import
Browse/Edit
Analyze
Export
Modules
Admin
Search term
Edit study [test-user-surve...
study / subjects / design / samples / assays / assay-samples / overview
Generate samples
Click 'Generate samples' to initiate the sample generation based on your study design.
Previous
Next
Generate samples
Regenerate sample names
Import
Delete
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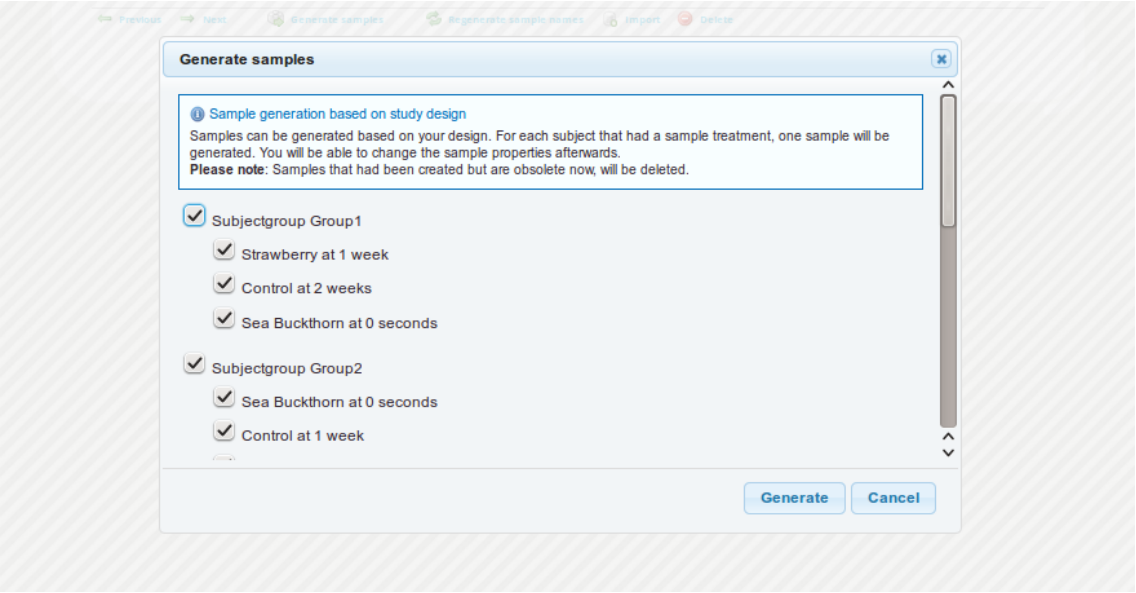
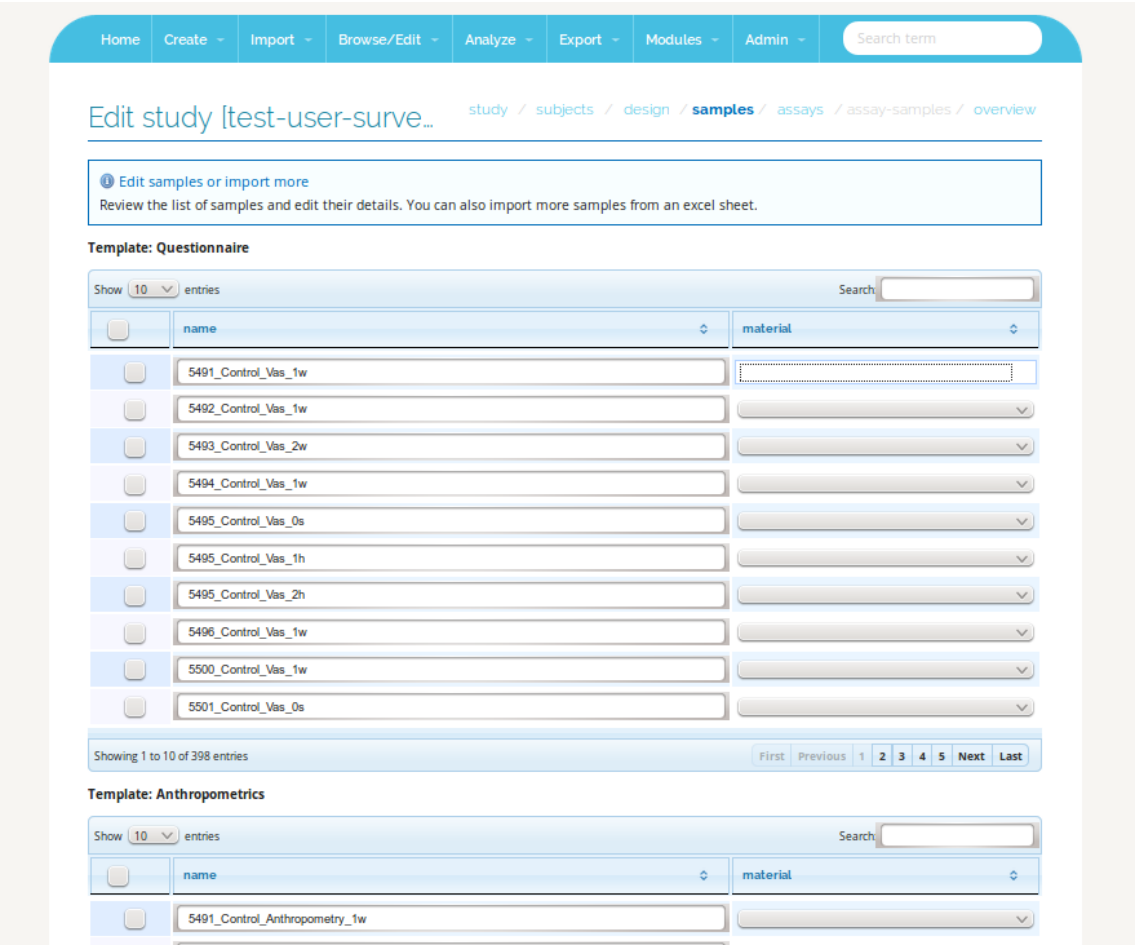

Generate samples
Sample generation based on study design
Samples can be generated based on your design. For each subject that had a sample treatment, one sample will be generated. You will be able to change the sample properties afterwards.
Please note: Samples that had been created but are obsolete now, will be deleted.
Subjectgroup Group1
Strawberry at 1 week
Control at 2 weeks
Sea Buckthorn at 0 seconds
Subjectgroup Group2
Sea Buckthorn at 0 seconds
Control at 1 week
Generate
Cancel



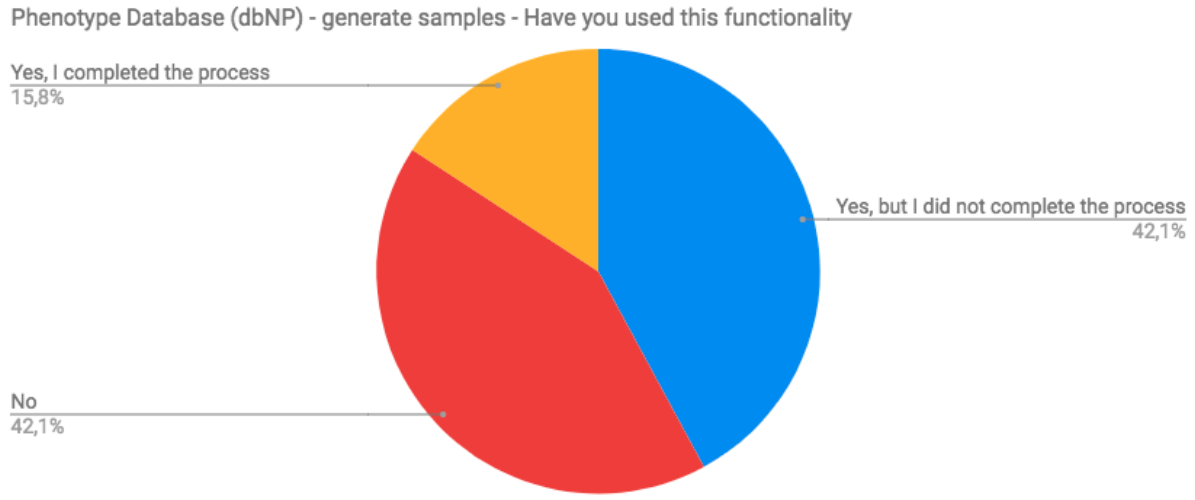
These images show the process to generate samples in the Phenotype Database (dbNP)

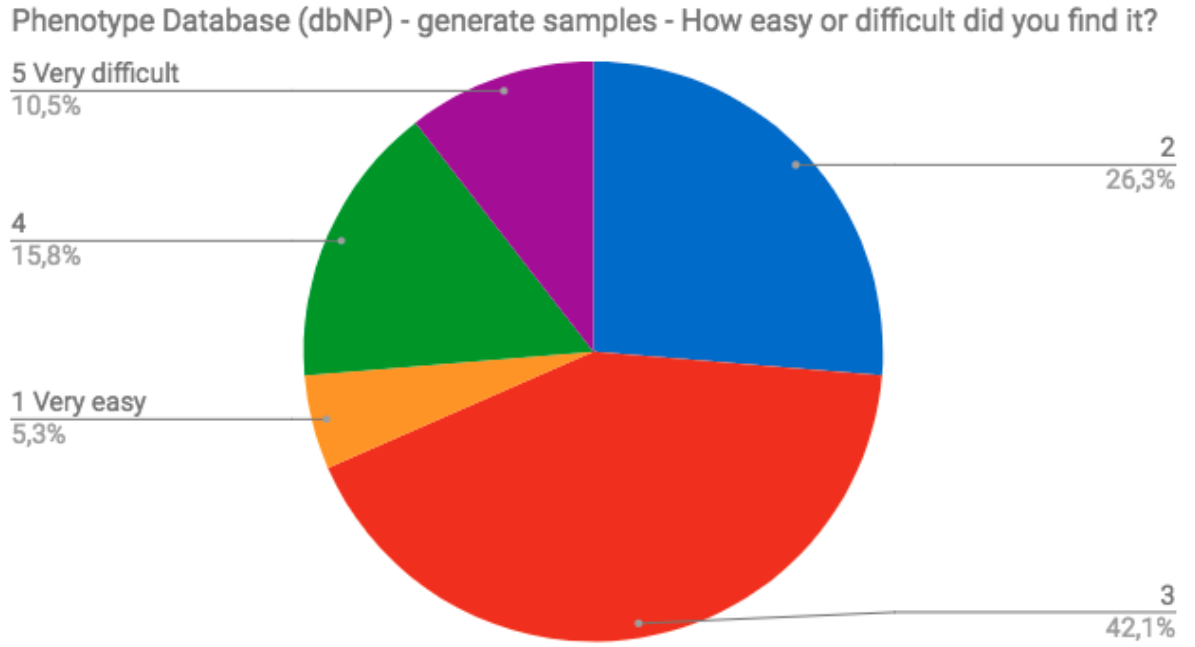
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

How easy or difficult is it to generate samples in the Phenotype Database (dbNP)?

- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult



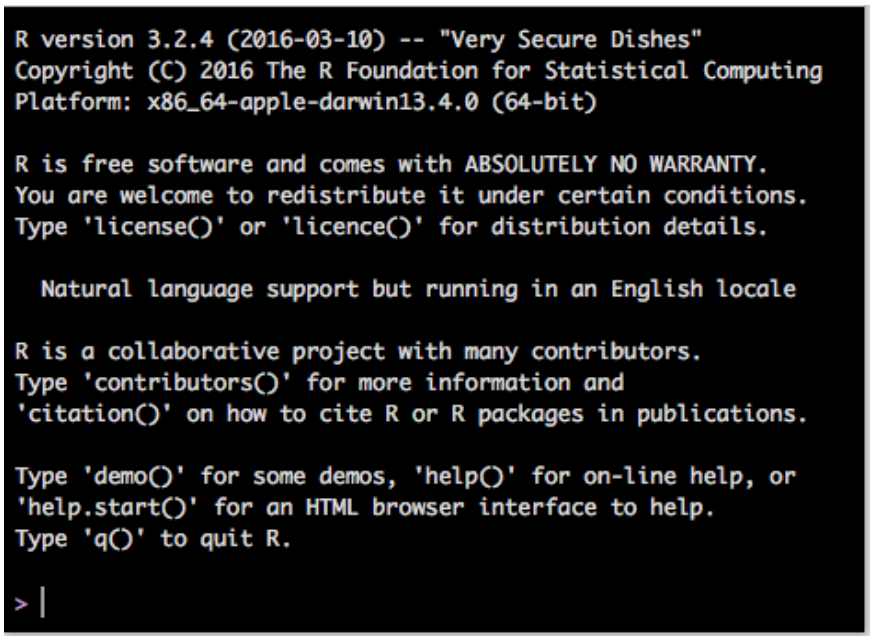


PHENOTYPE DATABASE (DBNP) – DO YOU HAVE ANY COMMENTS ON THE PHENOTYPE DATABASE (DBNP) SERVER?

It is difficult to understand the meaning of the concepts "sample treatment", "treatments types" and "sample types". But, above all, to apprehend all the differences between many templates.
Quite lengthy process in comparison to DataShield and Mica. However more visual than a harmonization script.
we not used the dbnp and have no experience with it
It's about 1 and 1/2 years ago that I used the database. It was during the meeting in Barcelona. So I don't

remember very well.
no
Provide easier and clearer templates. Sometimes treatment and sample templates can overlap. To use dbNP, all its instances should have the same synchronized templates and a clear user-guide on how to create the study design.
No

DASH-IN TEXT BASED FEDERATED ANALYSES – INSTALLING AND RUNNING THE OPAL/DATASHIELD R PACKAGES



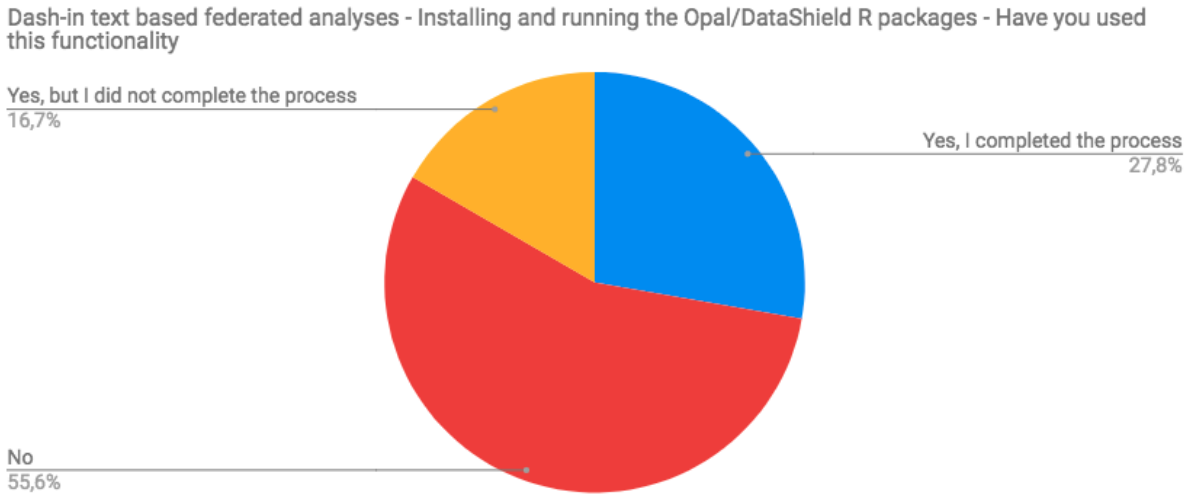
In case you want to launch a federated analysis you need to have already running the R environment. Within an active R session the installation of the DataShield client (the piece of software that enables to access the data and run the analysis) is performed in a console environment issuing the commands listed above.

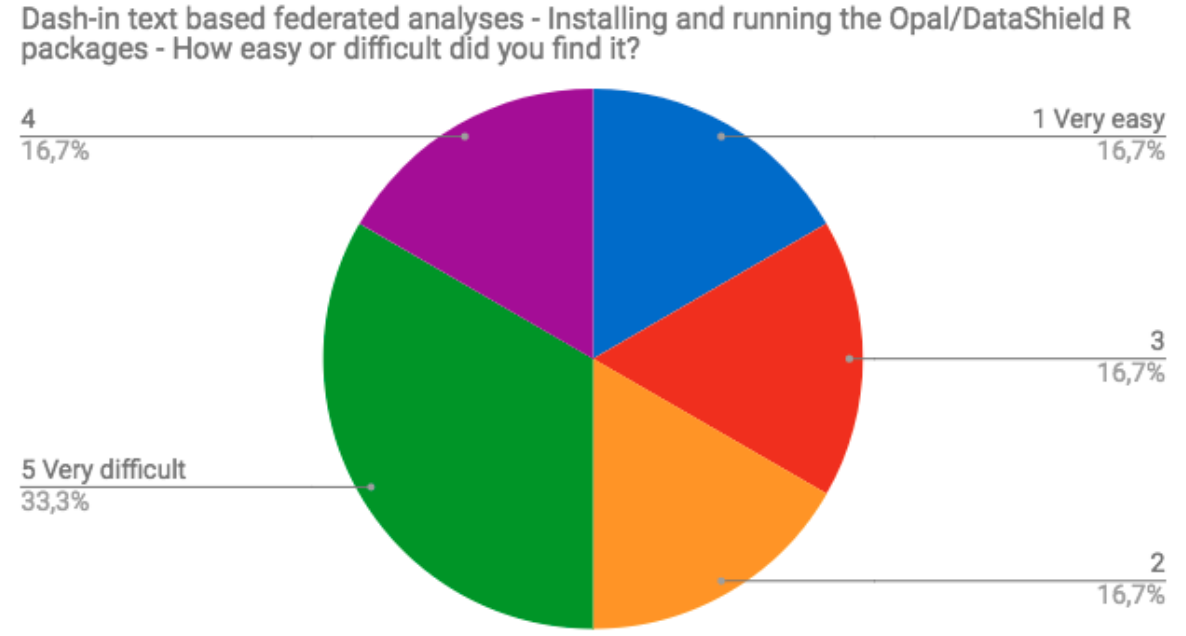
Have you installed the functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

How easy or difficult is the installation of R and the Datashield pre-requisites?

- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult


Dash-in text based federated analyses - Installing and running the Opal/DataShield R packages - Have you used this functionality
Yes, but I did not complete the process
16,7%
Yes, I completed the process
27,8%
No
55,6%


Dash-in text based federated analyses - Installing and running the Opal/DataShield R packages - How easy or difficult did you find it?
4
16,7%
1 Very easy
16,7%
3
16,7%
5 Very difficult
33,3%
2
16,7%

DASH-IN TEXT BASED FEDERATED ANALYSES – RUN A FEDERATED ANALYSIS

```
> # load libraries
  library(opal)
  library(dsBaseClient)
  library(dsStatsClient)
  library(dsGraphicsClient)
  library(dsModellingClient)

  # load the login file
  my_login<-read.table('../logins.txt', sep="", header=TRUE)

  # log in to the remote servers
  opals <- datashield.login(logins=my_login, assign=TRUE, symbol = 'D')

  # analyse the outcome variable DIS_DIAB (diabetes status)
  # and the covariates PM_BMI_CONTINUOUS (continuous BMI), LAB_HDL (HDL cholesterol)
  # and GENDER (gender), with an interaction between the latter two.
  ds.glm(formula=D$DIS_DIAB ~ D$PM_BMI_CONTINUOUS + D$LAB_HDL * D$GENDER, family='binomial')
```

```
Iteration 1...
CURRENT DEVIANCE:      5772.52971970323
Iteration 2...
CURRENT DEVIANCE:      1316.4695853419
....
SUMMARY OF MODEL STATE after iteration 9
Current deviance 534.369101004808 on 4159 degrees of freedom
Convergence criterion TRUE (1.38346480863211e-12)
beta: -6.90641416691308 0.142256253558181 -0.96744073975236 -1.40945273343361 0.646007073975006
Information matrix overall:
                 (Intercept) PM_BMI_CONTINUOUS    LAB_HDL   GENDER1 LAB_HDL:GENDER1
(Intercept)          52.47803         1624.8945   71.78440  16.77192        25.91140
PM_BMI_CONTINUOUS  1624.89450        51515.6450 2204.90085 503.20484       774.18028
LAB_HDL              71.78440         2204.9008  109.48855  25.91140        42.87626
GENDER1              16.77192          503.2048   25.91140  16.77192        25.91140
LAB_HDL:GENDER1      25.91140          774.1803   42.87626  25.91140        42.87626
                          [,1]
(Intercept)       -3.610710e-10
PM_BMI_CONTINUOUS -9.867819e-09
LAB_HDL           -6.308052e-10
GENDER1           -2.910556e-10
LAB_HDL:GENDER1   -5.339693e-10
Current deviance: 534.369101004808
$formula
[1] "D$DIS_DIAB ~ D$PM_BMI_CONTINUOUS + D$LAB_HDL * D$GENDER"
$family
Family: binomial
Link function: logit

$coefficients
                   Estimate Std. Error    z-value      p-value low0.95CI.LP
(Intercept)       -6.9064142 1.08980103 -6.3373166 2.338013e-10  -9.04238494
PM_BMI_CONTINUOUS  0.1422563 0.02932171  4.8515676 1.224894e-06   0.08478676
```

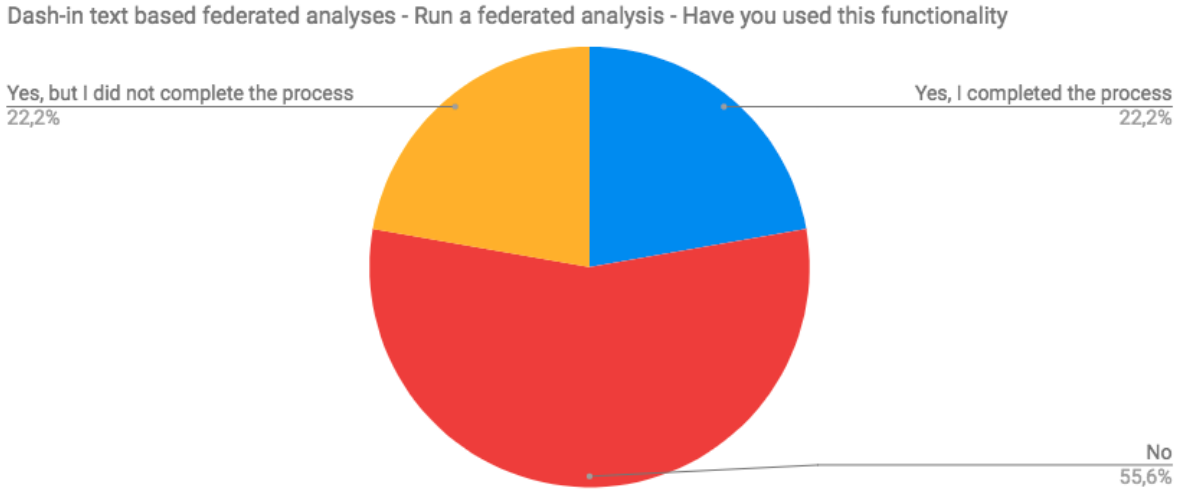
To run a federated analysis it is required to enter a set of commands. The bare minimum set of commands are presented in the first screen while the second screen shows the results. The type of analysis involves a Generalized Linear Model regression using the binomial link function.

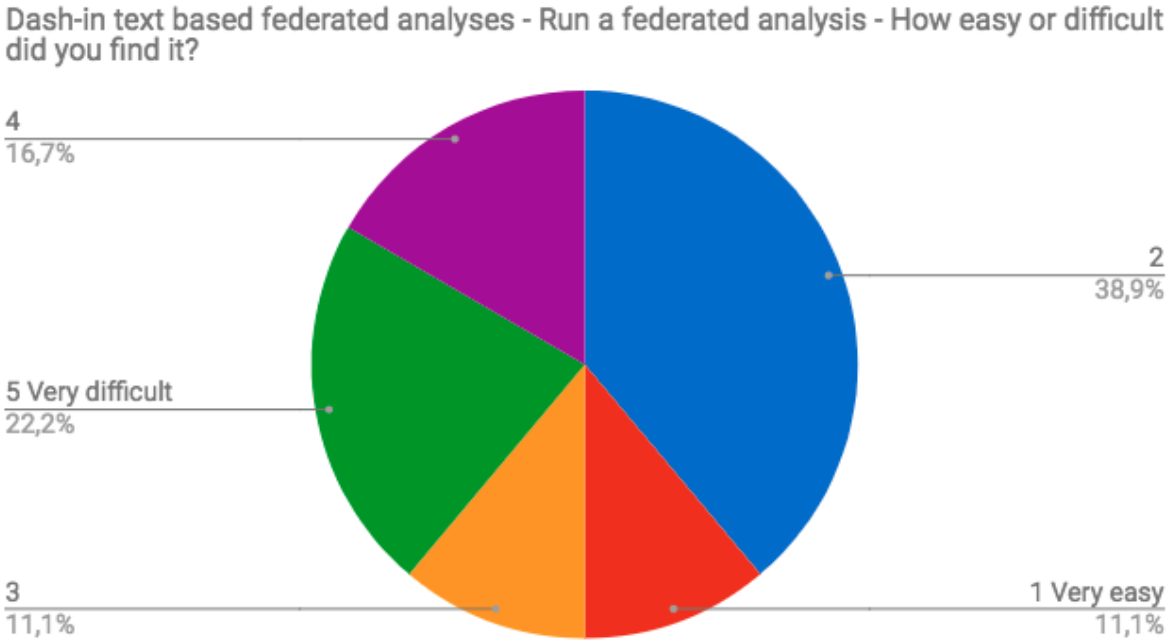
Have you used this functionality?

- ◯ No
- ◯ Yes, but I did not complete the process
- ◯ Yes, I completed the process

How easy or difficult are the analyses of this kind?

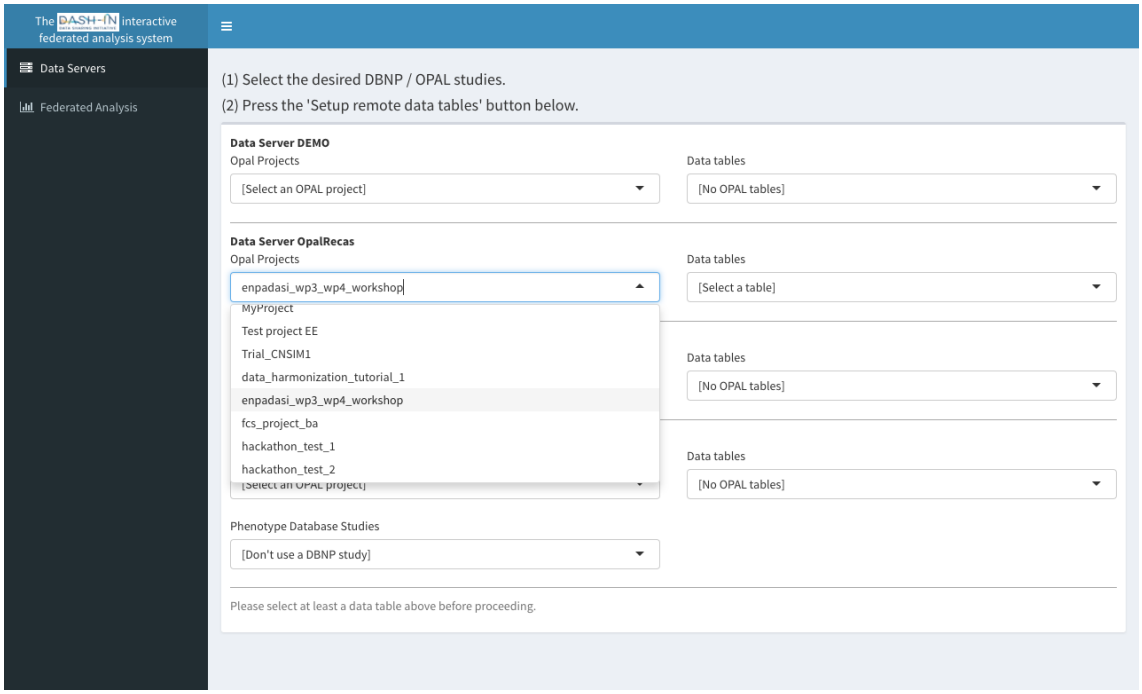
- ◯ 1 Very easy
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 Very difficult



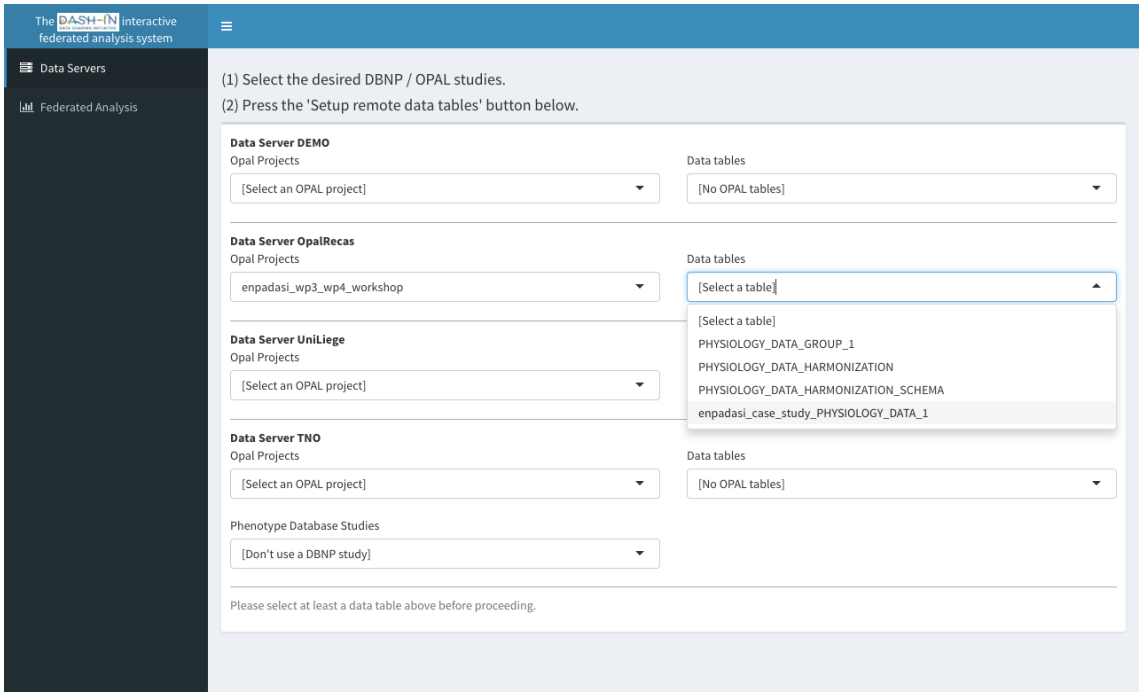


No, the process it perfect like it is now
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a standalone application (like excel) could be considered
Yes, a simple web page allowing to select data and explore results could be considered
Yes, a simple web page allowing to select data and explore results could be considered
unable to install the opal packages on mac osx.
Most of the commands in the previous pages do not work. Impossible for a non-expert to succeed in using these tools (R command lines to connect and to analyze OPAL and DbNP datas).
A combination of both a web application and the normal R procedures is appropriate. Those more familiar with commands and scripts, can do it the traditional way. Others who are used to for example SPSS might like a visual interface.
I'm sorry to say, but I find it weird to be forced to assess the difficulties related to a "functionality" that I have not used at all!
no
Tutorials to connect to PhenotypeDatabase R-Client, OPAL Datashield.
no

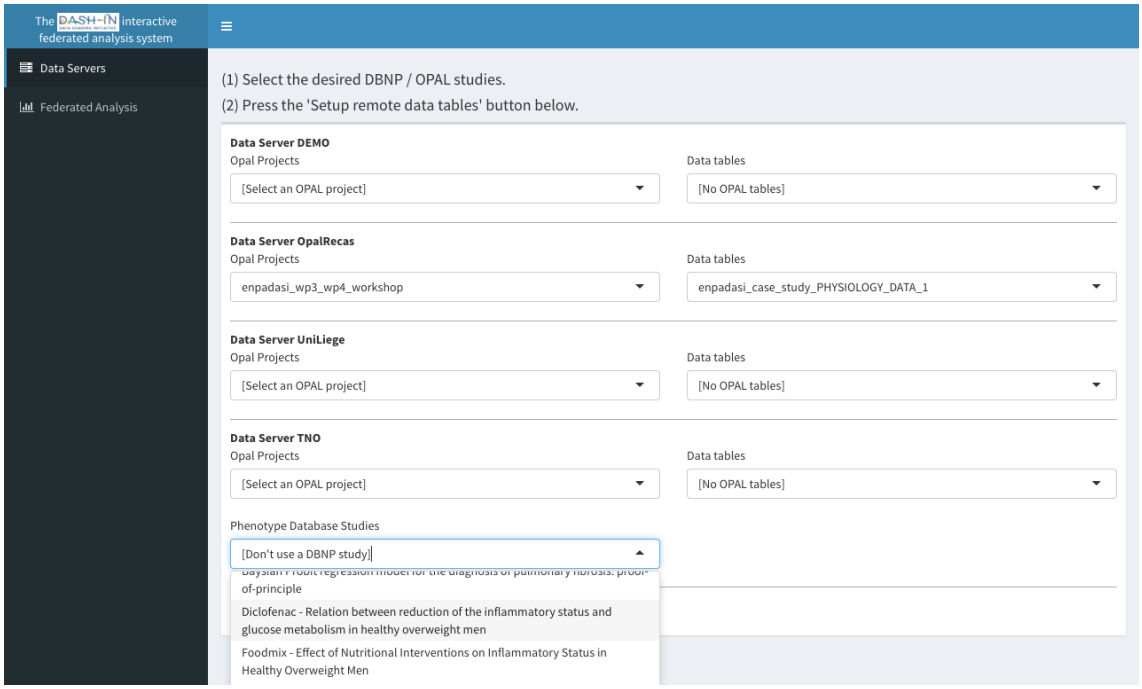
DASH-IN – SETTING UP DATA SOURCES



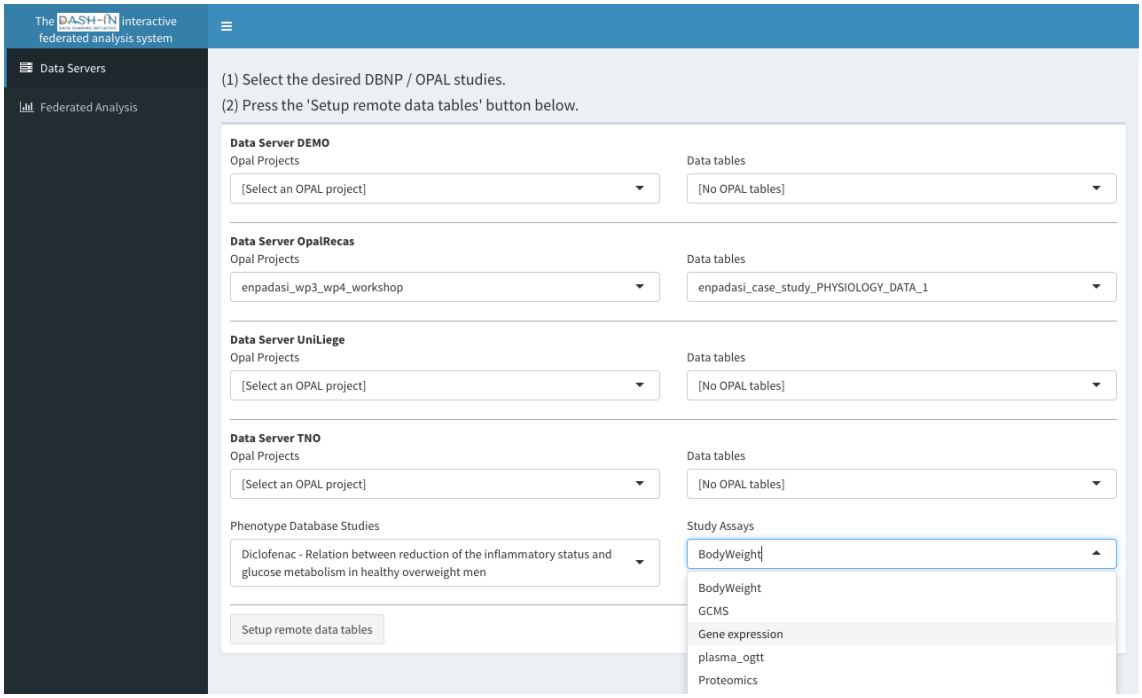
Selection of the Projects into OPAL servers.



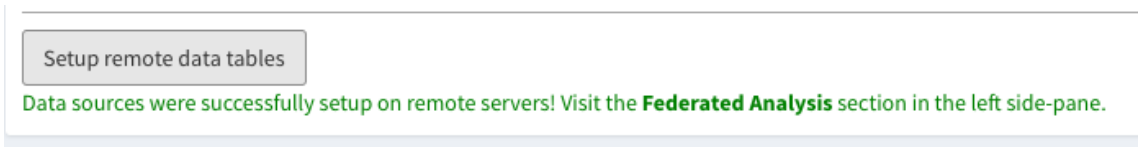
Selection of tables from OPAL projects



Selection of Phenotype database data hosted within DASH-IN-enabled Phenotype Database computers.



Selection of the study Assays associated to Phenotype Database DASH-IN enabled machines.



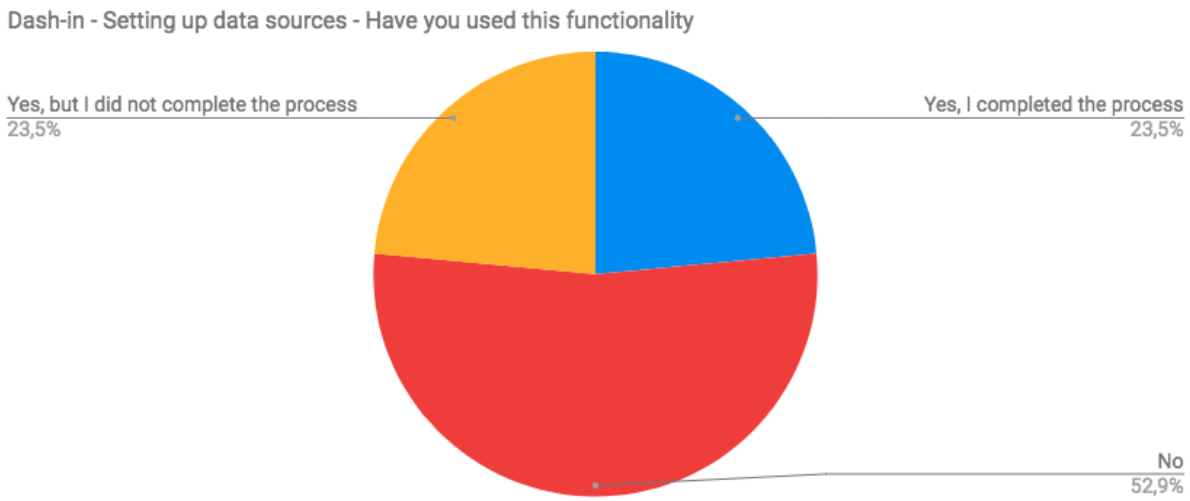
After having selected all OPAL and Phenotype Database pressing the button “Setup remote data tables” will prepare the DASH-IN technical infrastructure to make federated analysis on different tables hosted on different server but without moving or disclosing any single information out of each hosting server.

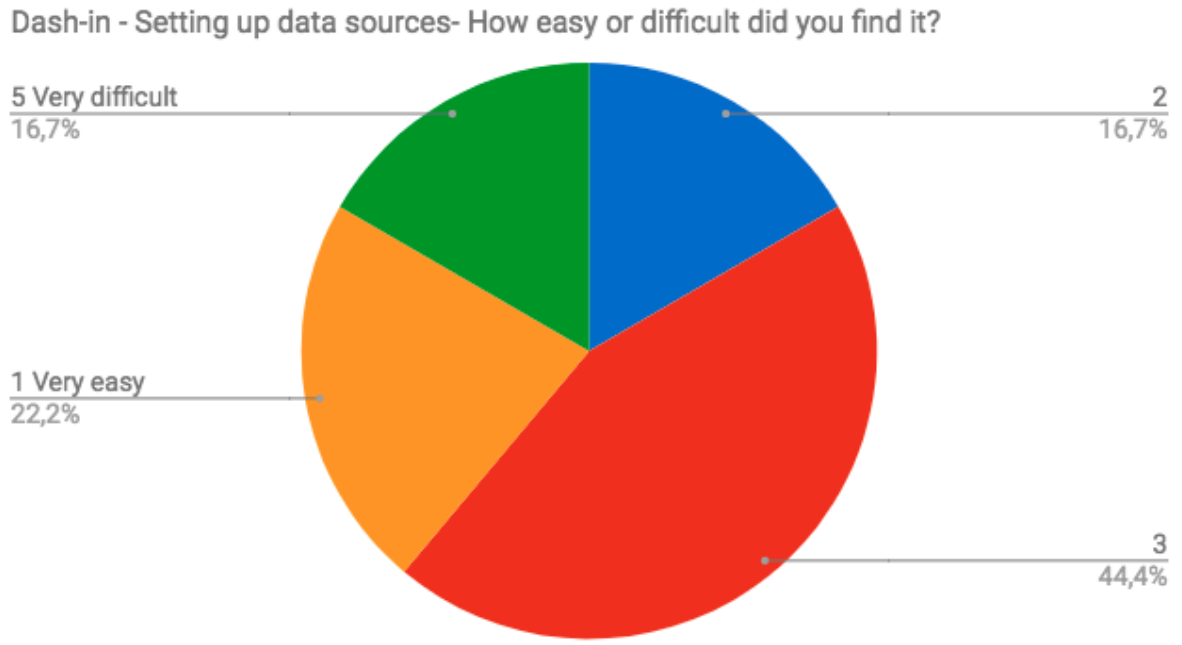
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

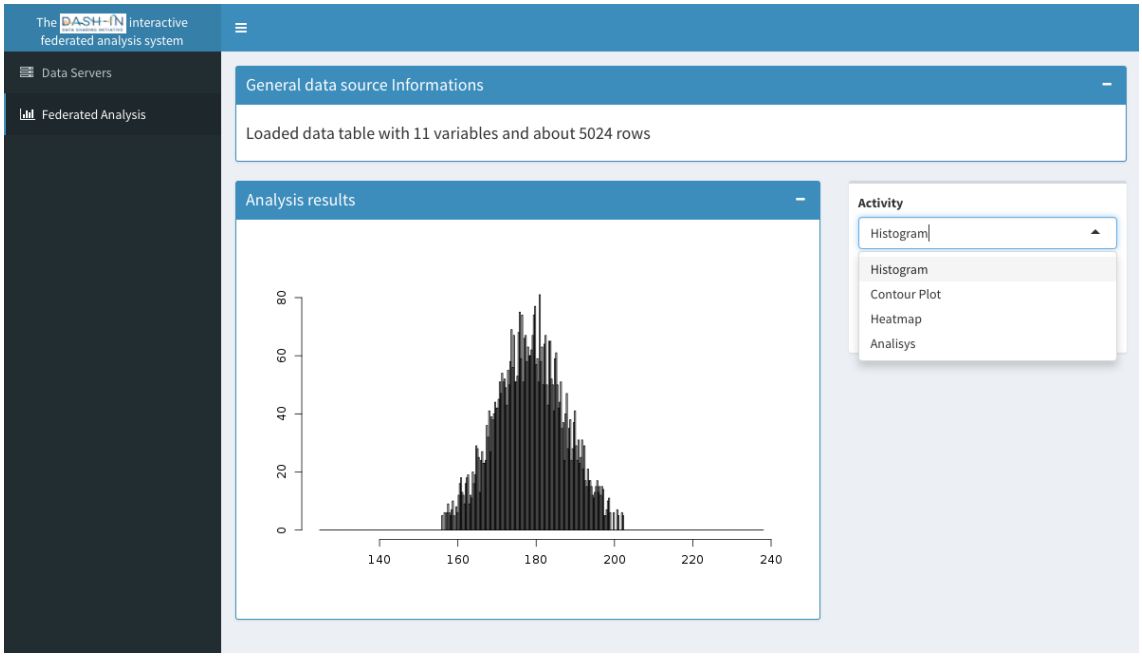
How easy or difficult is it to generate federated analyses?

- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult

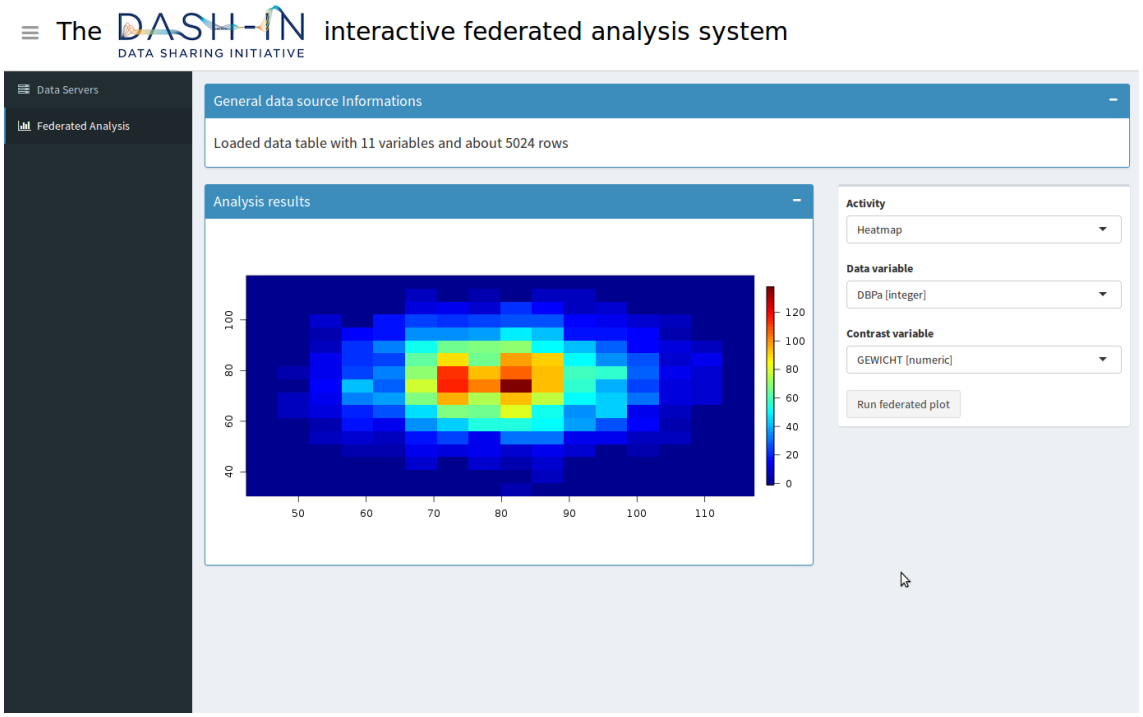




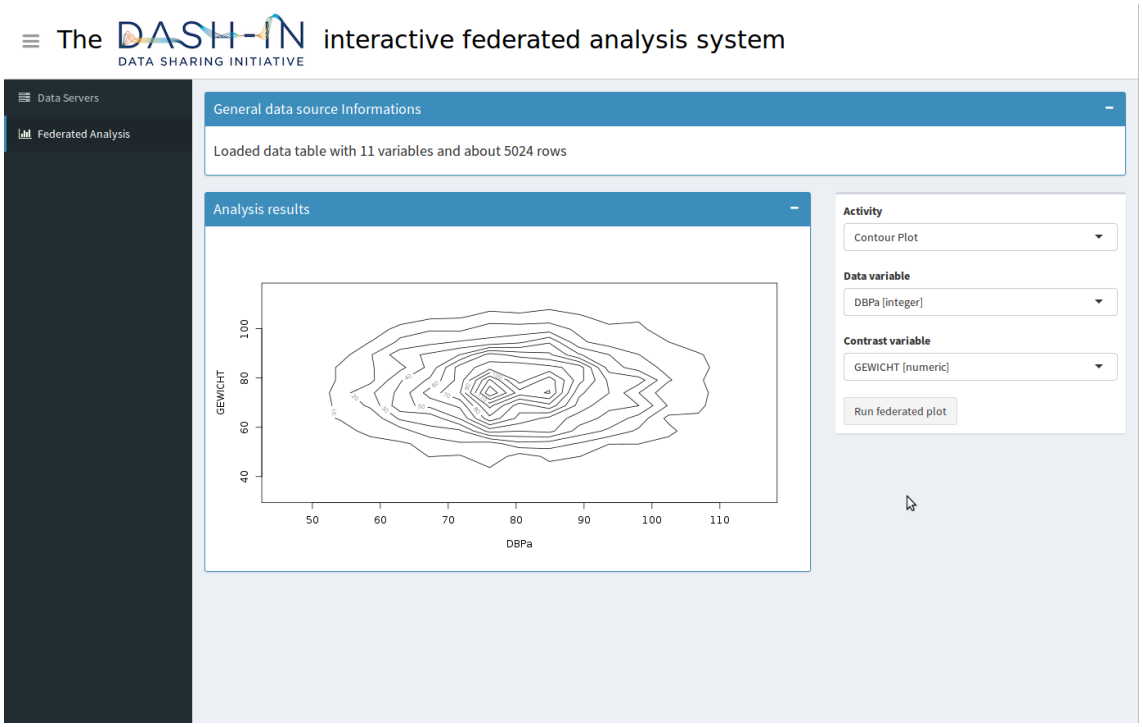
DASH-IN – FEDERATED GRAPHICS



A number of analytical activities from federated data are easily available to the final researcher including **Histograms**, **Contour Plots**, **Heatmaps**, and **Analysis** for phenotype-trait associations (the latter shown in next pages).



Federated heatmaps



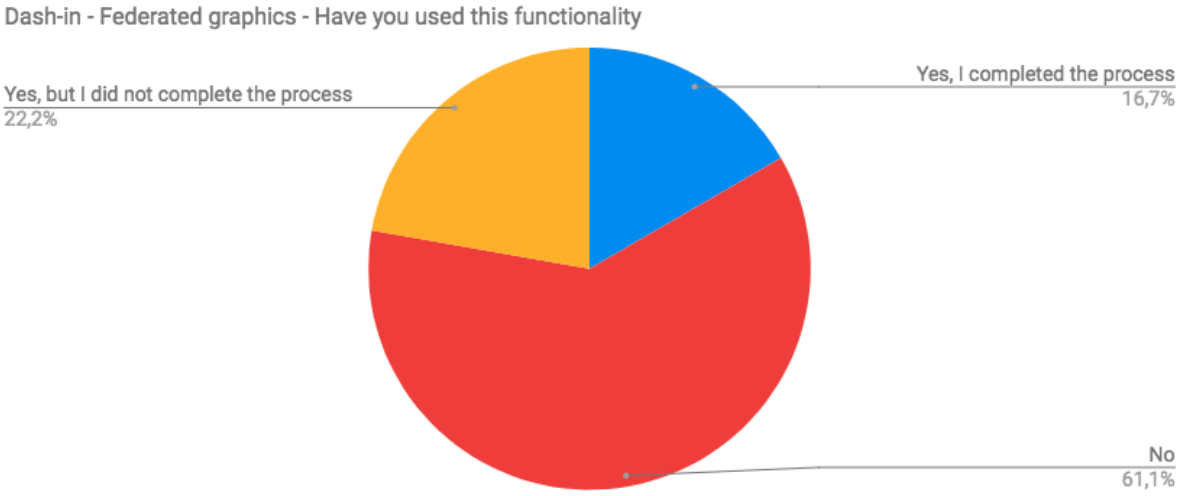
Federated contour plots

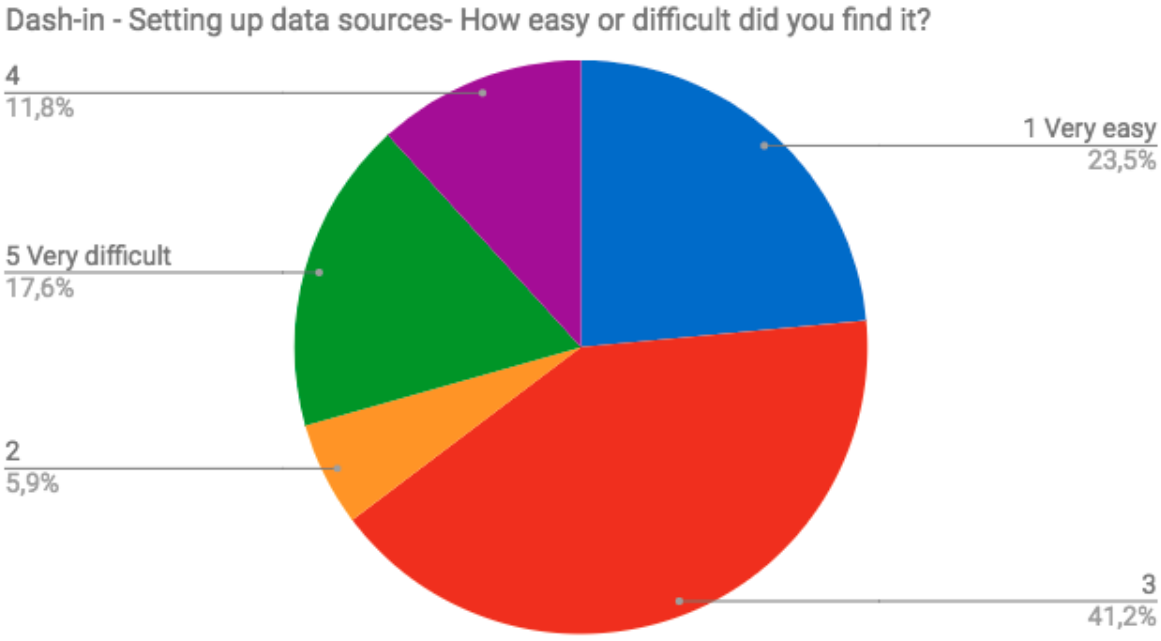
Have you used this functionality?

- ○ No
- ○ Yes, but I did not complete the process
- ○ Yes, I completed the process

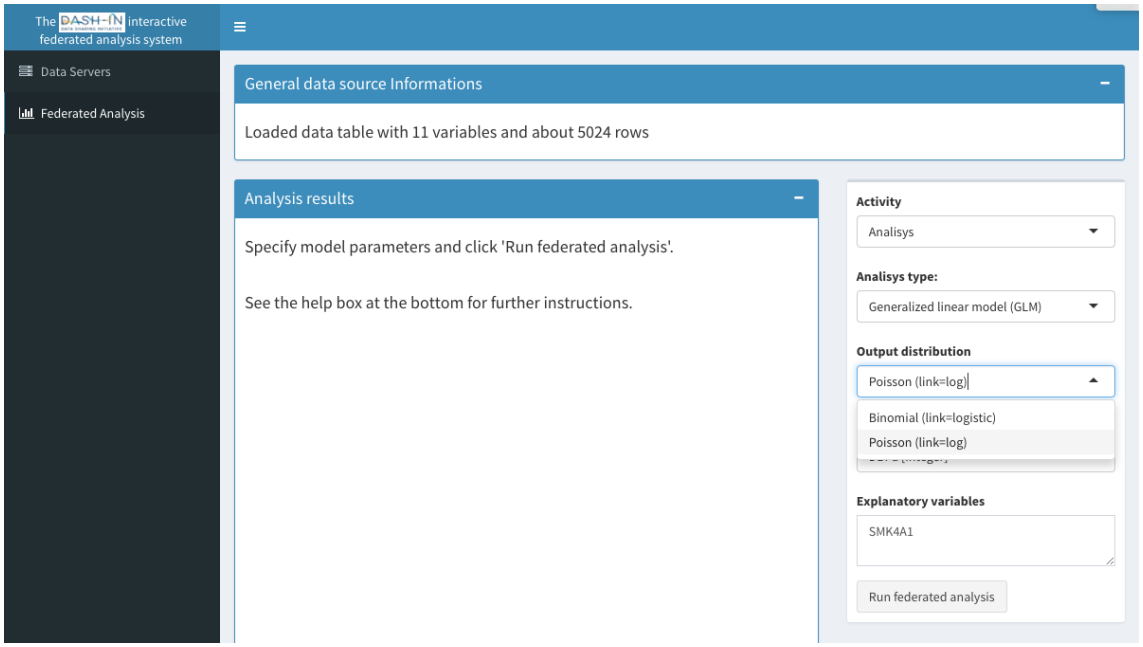
How easy or difficult is it to generate federated graphics?

- ○ 1 Very easy
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Very difficult

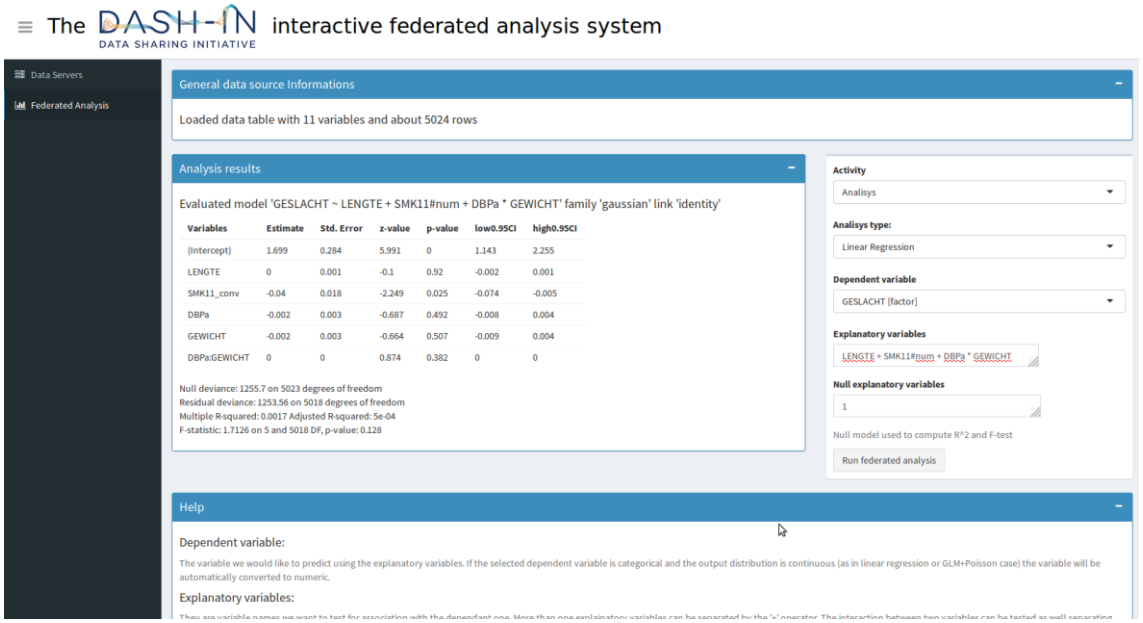




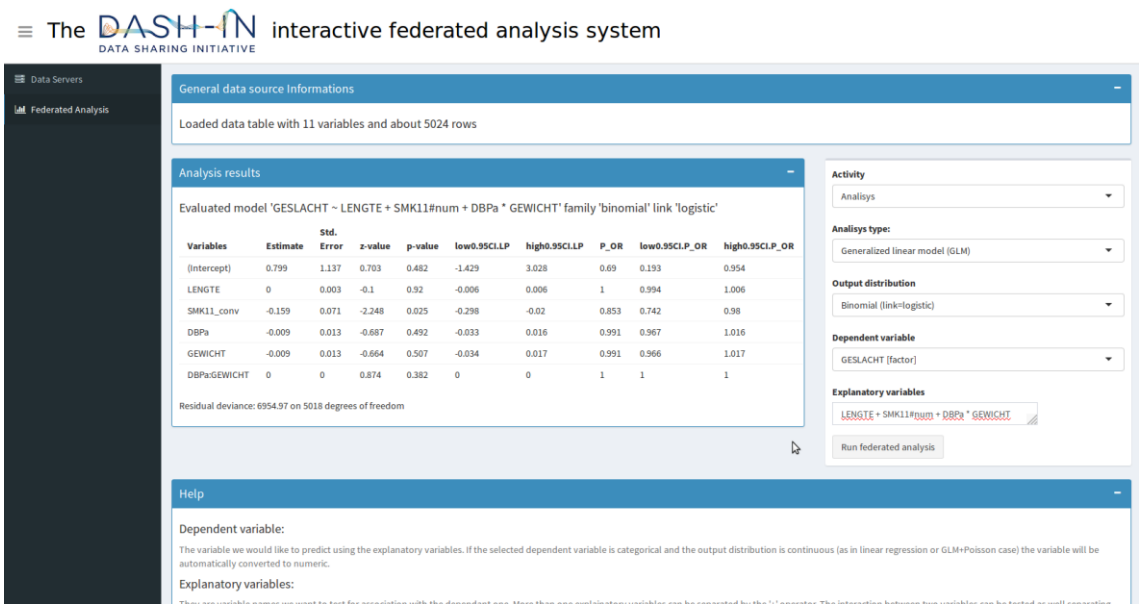
DASH-IN – FEDERATED ANALYSES



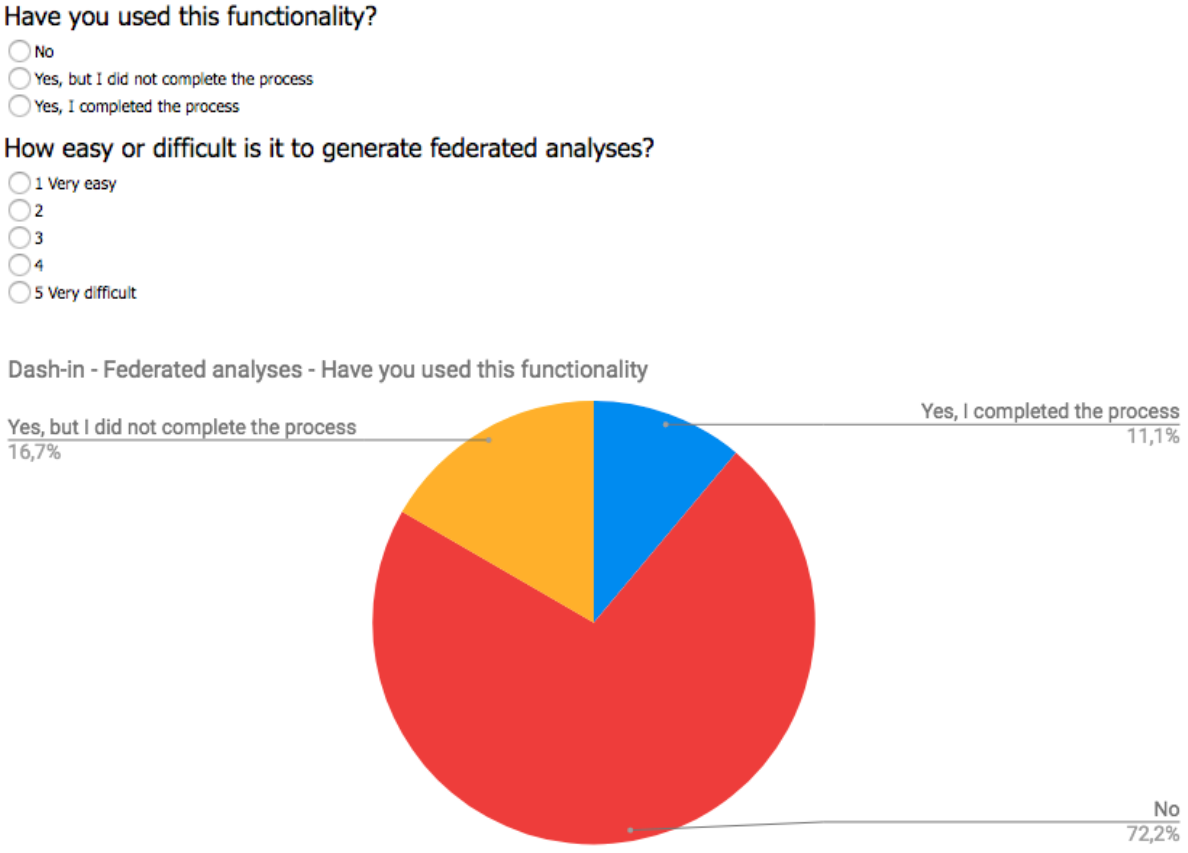
The Analysis toolbox offers linear regressions and generalized linear models for the binomial and Poisson distributions. The analytical results are the aggregation of statistics computed at each hosting institution increasing the power while at the same time ensuring complete data privacy and confidentiality as the data never leaves the hosting data servers.

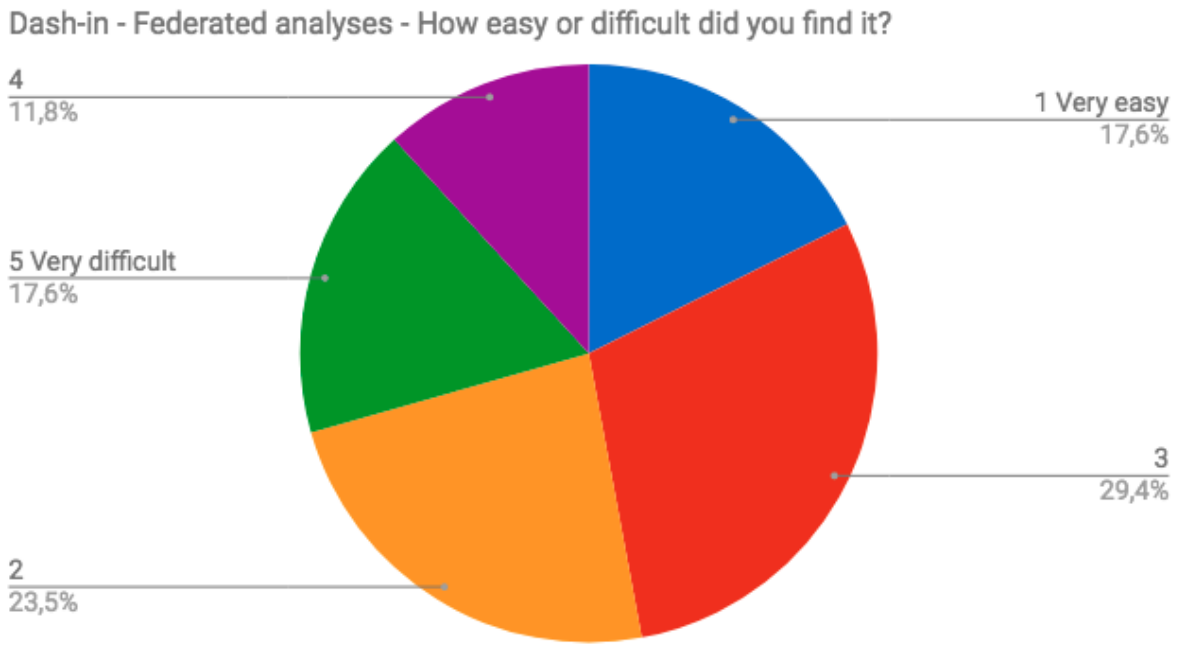


Federated linear regressions



Federated GLM modeling the output as a binomial distribution (logit link function)





DASH-IN – DO YOU HAVE ANY COMMENTS ON THE WEB BASED DASH-IN FEDERATED ANALYSES?

Federated Analyses section in the left side pane remained always empty.
Does not work so far. Just after connection (Analysis) : Error: An error has occurred. Check your logs or contact the app author for clarification. There is No DbNP available. Where could I found the list of studies of all partners ?
not used
I received error messages: "An error has occurred. Check your logs or contact the app author for clarification." 2. I wasn't able to find (and analyze) any DBNP studies 3. I still find it weird to be forced to assess potential difficulties related to a "functionality" that I could not use at all!
no
Some tasks are not immediate.
1) in the "Data Server" section, when selecting the data sever source and table, after clicking "Setup remote data tables" a progress bar and a progress status appear at the top of the page. It could be useful to have it just next to the button to monitor the upload process, and to have feedback that something is indeed ongoing 2) Got an error on all data servers "Error: An error has occurred. Check your logs or contact the app author for clarification.". This error did not prevent me from doing the analysis
Need Tutorials
it would be better if all the analysis steps and result could be recorded and downloaded.
A local explanation is suggested.