ICRISAT Nutritional Data System User Guide

ICRISAT **Cambridge University Engineering Department**

Contents

1 Overview of the Usermanual

This User guide was developed to support ICRISAT to transition from the current physical data collection system to the newly developed nutritional data collection application. This app is compatible with all android and ios devices, and can be downloaded and installed quite easily as explained in section FILL-LATER. The app can electronically store the individual's eating data and will also automatically complete the back end calculations used to find an individuals daily nutritional intake, and so should help simplify the workflow of the surveyors. This guide will allow the users to be use the app well and effectively and will go through the following steps:

- Setting up the
- Converting all the current files used for calculations into a form compatible with the app
- Editing, viewing and deleting data from the new data files
- Using the application to conduct the nutritional survey
- Viewing the output data which can be used to analyse the eating habits of a village

2 Project Folder

This guide should currently be in a folder containing the following files:
If any file is missing then please contact padmaja@icrisat.com to get any of the needed files.

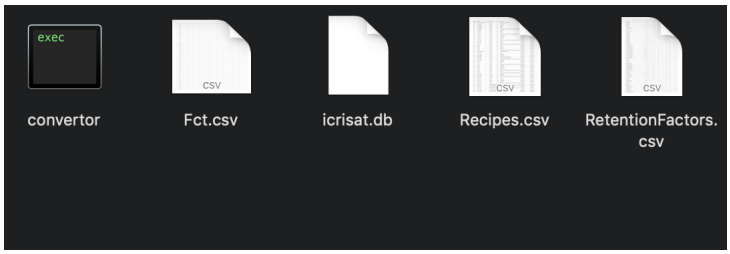
3 Converting the Data onto the phone

3.1 Introduction

Currently all the information used for the nutritional calculations are saved in three different files: Recipes.csv, fct.csv and retentionfactors.csv and conversionfactors.csv All these files are of csv type but unfortunately the app can only currently read SQL databases and hence the current csv files cannot be used with the app. Therefore this first section will guide you in how to easily convert the csv files into the db files and then how to drop it into the app so that it can be compiled with the updated information.

3.2 Conversion

Three prototype files are provided in the directory, however there may be files with ICRISAT which are updated and should be used instead for the app. Converting the files is easy and requires you to drag and drop the 3 csv files into the folder- It is essential that they are of the exact same names and also that all files are present in the folder. Once the csv files are all updated and in the folder, double click the converter exe file, and the db file should appear.



4 Compiling the app

Now that we have the correct database files, the next step of updating the app is compiling the app with the relevant data files. In order to do this drop the file into the FILL-LATER directory, and then open the application click compile app and you should have an apk file. To upload the apk file onto your android device please consult the following web page:

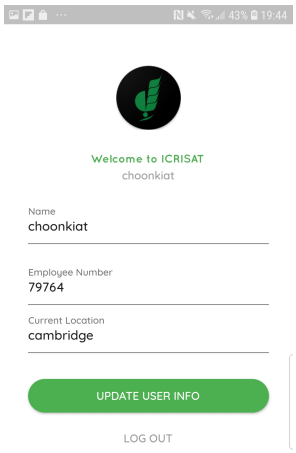
5 Using the Mobile App

5.1 Introduction

The mobile app is the interface which should be used to collect the nutritional information. The data collection process was designed specifically to match the previous D1 collection forms and this part of the guide will explain how to collect the D1 data on the app

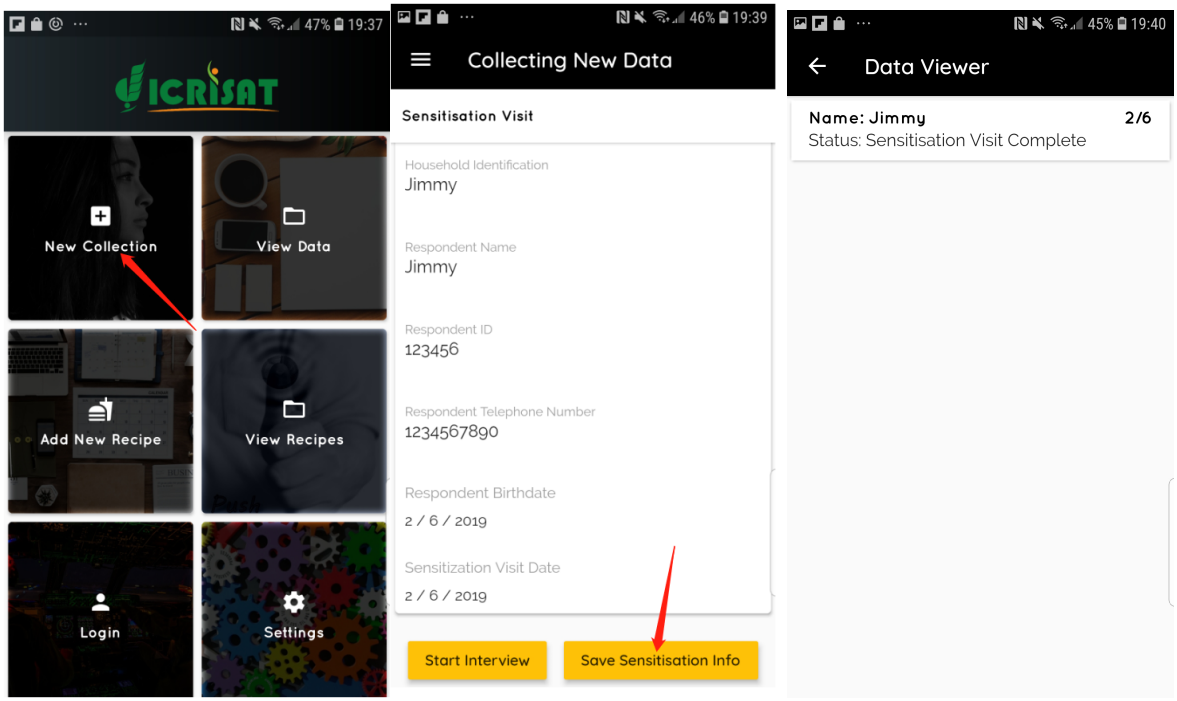
5.1.1 Login

This is the page which



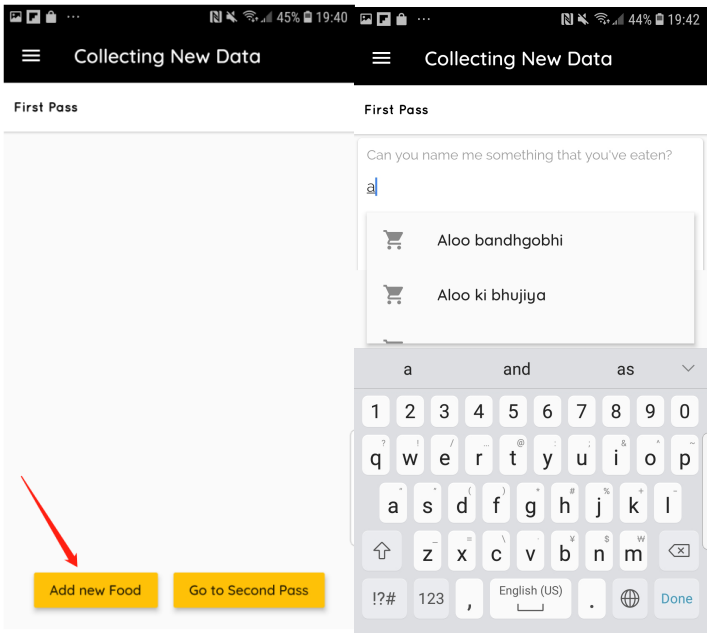
5.1.2 New Collection

This is to collect new data.



5.1.3 View Data

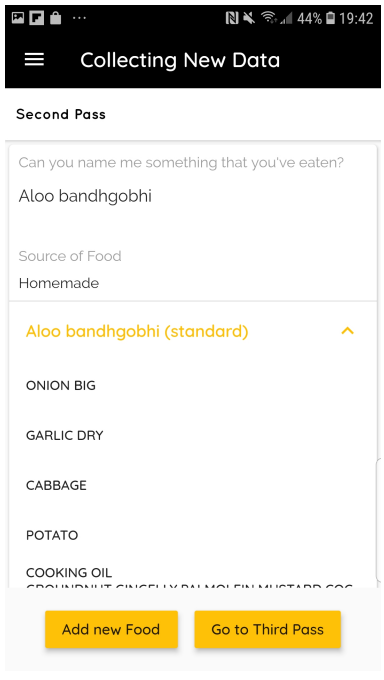
The figures below show the first three passes to input data. In the first pass, the collection starts by pressing the button 'Add new Food', After that, a drop down menu will show up when the user types the name of the food. The corresponding part in the current form is shown below the first pass screenshot.



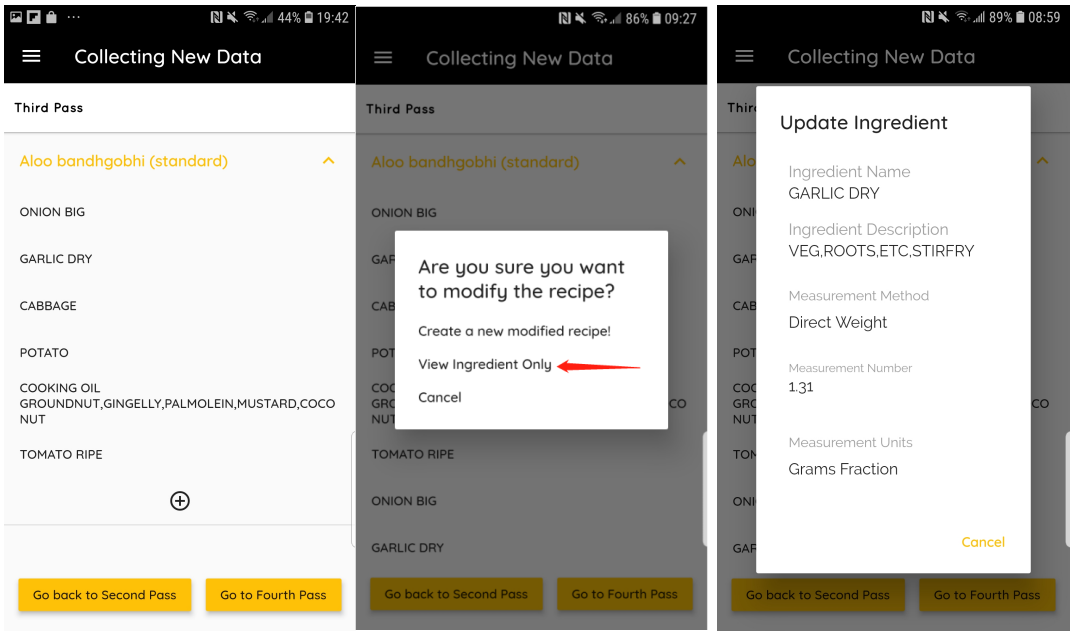
HHID |__|__|__|__|__|__|__|__|__|__|							Respondent ID |__|__|__|				
FIRST PASS			SECOND PASS				THIRD PASS				
	A		B	Use Probe List	C		D			E	
Sl. No	Time period	Food item or name of the dish	Source of food	Description of food item or dish	Form when eaten	Recipe#	Measurement method	Measurement	Grams or milliliters	Size	Number

After the first pass, the second part is to collect the recipe of the food added in the first pass, which is as shown in the second pass of the current form. The default setting is to show a standard recipe which can fill in all of the information required in second pass automatically, but if the recipe needs to be modified, user can also change the recipe easily refer to section 4.1.5.

HHID |__|__|__|__|__|__|__|__|__|__|							Respondent ID |__|__|__|				
FIRST PASS			SECOND PASS				THIRD PASS				
	A		B	Use Probe List	C		D			E	
Sl. No	Time period	Food item or name of the dish	Source of food	Description of food item or dish	Form when eaten	Recipe#	Measurement method	Measurement	Grams or milliliters	Size	Number

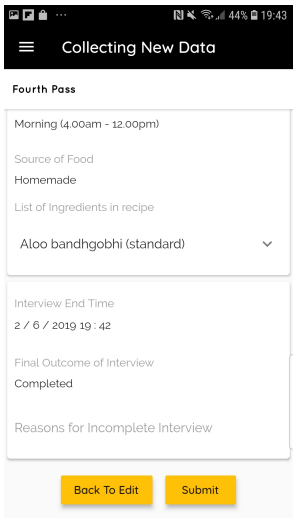


The third pass is to collect the amount of the ingredient based on the recipe collected from the second pass. If the user taps the ingredient, and then choose 'View Ingredient Only', the app will return the Measurement Method, Number and Units and Ingredient Description, which links the data collected to the retention factor table. The corresponding part in the current form is shown below the screenshot.



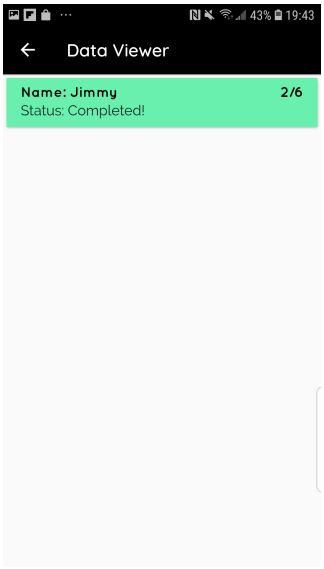
HHID |__|__|__|__|__|__|__|__|__|__|							Respondent ID |__|__|__|				
FIRST PASS			SECOND PASS				THIRD PASS				
	A		B	Use Probe List	C		D			E	
Sl. No	Time period	Food item or name of the dish	Source of food	Description of food item or dish	Form when eaten	Recipe#	Measurement method	Measurement	Grams or milliliters	Size	Number

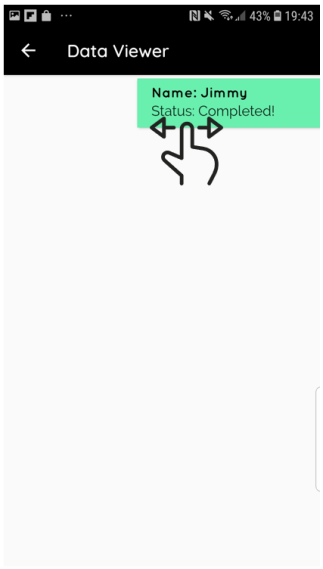
Also, there is a fourth pass given to confirm user's choices



5.1.4 View Data

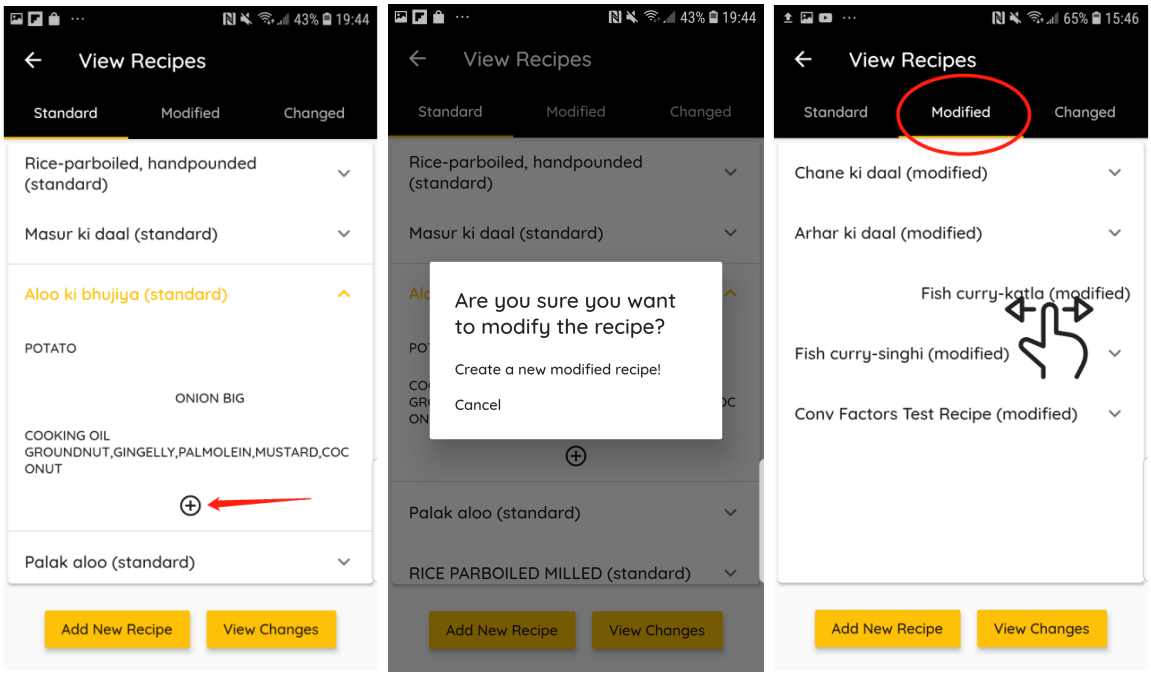
This is to view data. You can also delete the unwanted data by simply swiping the file out.





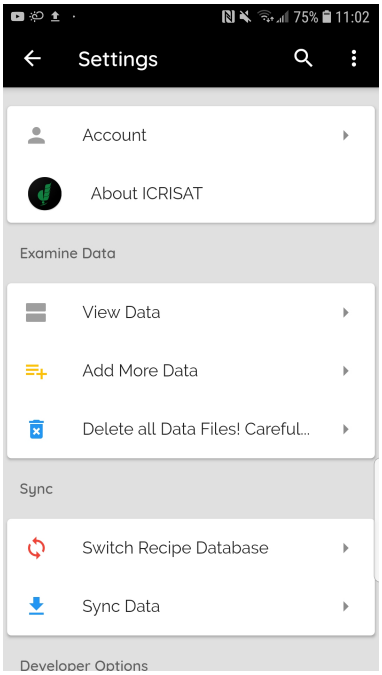
5.1.5 Recipes

This is to view recipes. You can also modify the standard recipe by tapping the '+' sign, such that your own version of recipe will be stored at the 'Modified' section. Similarly, to delete the unwanted modified recipe, you can simply swipe the recipe out.



5.1.6 Settings

The Setting of the app allows the user to review the data and the account. Once a server is created by ICRISAT, it can also sync the data between the server by simply tapping 'Sync Data'.



6 Reading the SQL files

6.1 Introduction

Previously all the data files were of csv files which can be easily opened and edited using Microsoft Excel. However the new files of SQL format cannot be read and edited as easily, and generally require
phpMyAdmin is one of the most popular applications for MySQL database management. It is a free tool written in PHP. Through this software you can create, alter, drop, delete, import and export MySQL database tables. You can run MySQL queries, optimize, repair and check tables, change collation and execute other database management commands.

6.2 Features

The main phpMyAdmin features are:

- Intuitive web interface
- Support for most MySQL features:
  - browse and drop databases, tables, views, fields and indexes
  - create, copy, drop, rename and alter databases, tables, fields and indexes server, databases and tables, with proposals on server
  - configuration
  - execute, edit and bookmark any SQL-statement, even batch-queries manage stored procedures and triggers
- Import data from CSV and SQL
- Export data to various formats: CSV, SQL, XML, PDF, ISO/IEC 26300 - OpenDocument Text and Spreadsheet, Word, LATEX and others
- Creating complex queries using Query-by-example (QBE)
- Searching globally in a database or a subset of it
- Transforming stored data into any format using a set of predefined functions, like displaying BLOB-data as image or download-link

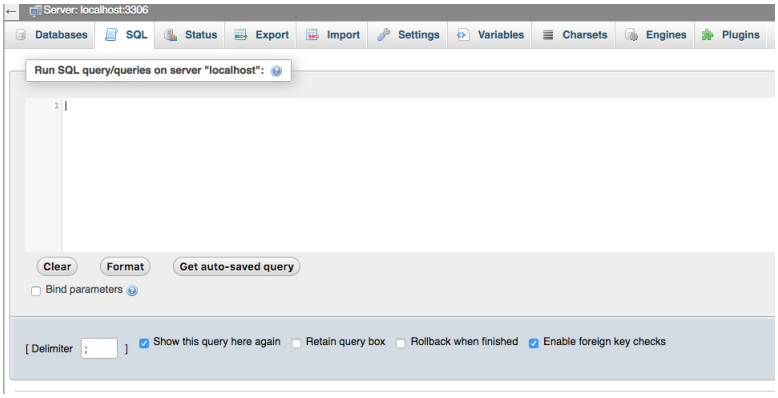
6.3 Administration

6.3.1 Databases

In the Databases tab you will find a list with all the databases which can be managed through the cPanel user.
Once you click on a chosen database name, you can start managing that database.
You will see a table with the used collations, the number of the tables and the rows, the size of the data and the indexes, the total size and the overhead.

6.3.2 SQL

Using this tab you can perform a MySQL query towards the MySQL server. Just type in the query and click the Go button and the phpMyAdmin tool will execute the query and provide the results from it.

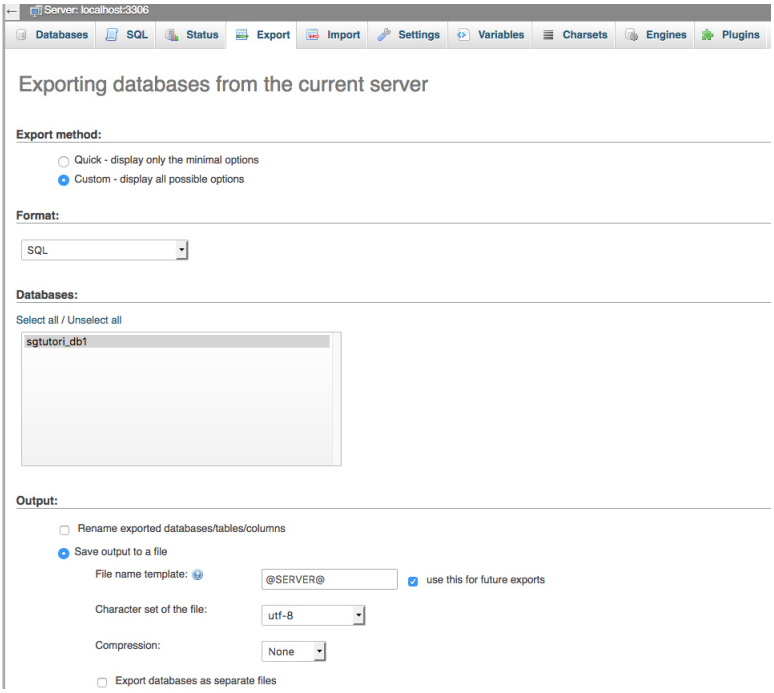


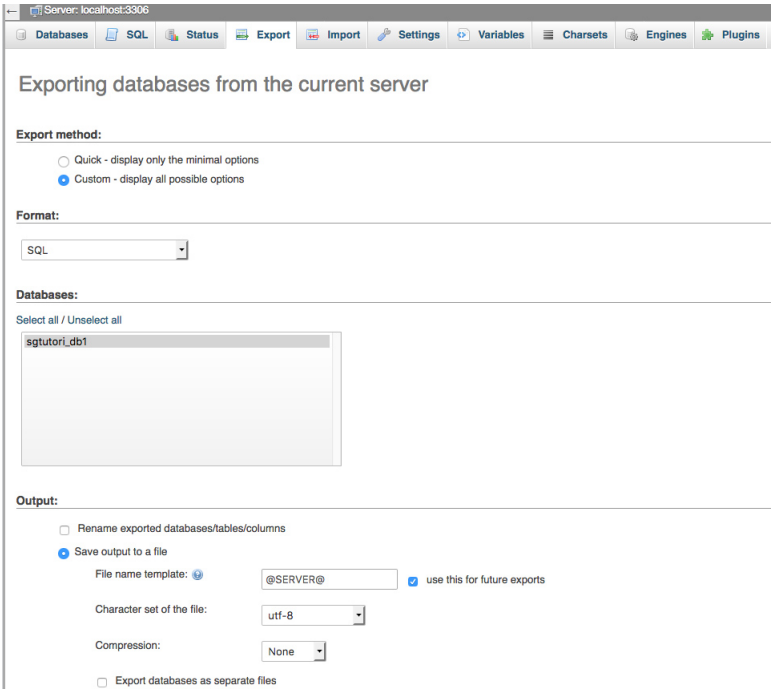
6.3.3 Export

In the Export tab you can export your database tables content in different formats (CSV, SQL, PDF, Microsoft Excel, Microsoft Word, XML, and many more). You can select all the database tables or just pick some of them. You can add custom comments in the header of the exported content. You can decide whether to export just the database structure, the data or both of them. You can export the database tables in a file and compress it or you can visualize the queries directly on the screen.

6.3.4 Import

In the Import tab you can import database tables from a file, saved on your local computer.
You can browse for the file to import and pick its character set from the drop-down menu.
If the file is too big, the MySQL server timeout can be reached. In such a case you can interrupt the import action. Then you can continue with the data import defining the number of the queries to be skipped from the file beginning. In this way you will skip the imported queries and continue from the point of the interruption.
Additionally you can pick the SQL server mode of the imported file. You can find more details in the Server SQL Modes documentation.

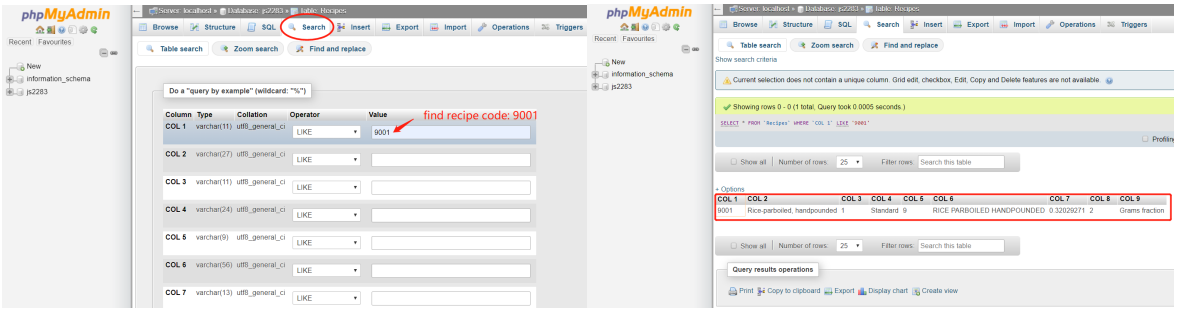




6.4 Database Management

6.4.1 Search

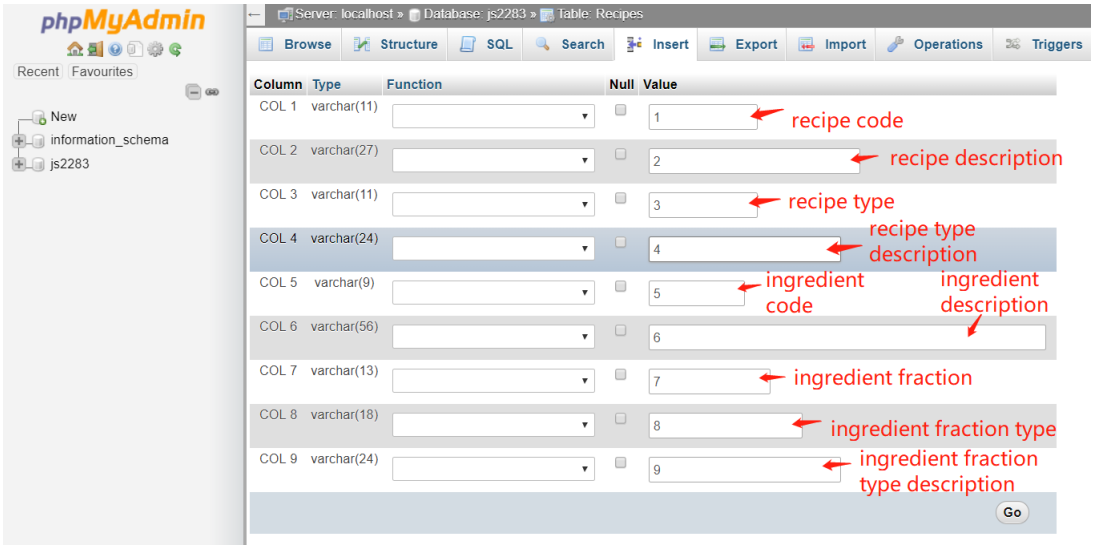
With the Search button you can generate a search query for the chosen table.
You can use the Query by example functionality to perform a search. Just use to different fields to structure your search query and click the Go button to execute it.
For example, if you want to visualize all the records with a field value that starts with "a" you should first select the fields which you want to show. Pick the LIKE operator from the drop-down menu and enter in the corresponding field value "a%" (% stands



for a wildcard string). Click on the Go button to see the result.

6.4.2 Insert

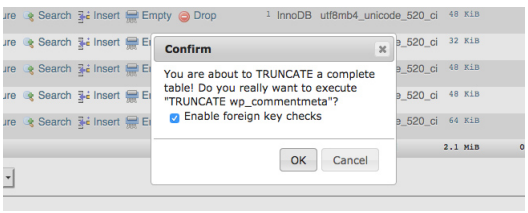
Using the Insert button you can insert records in your database table. Once you fill in



the corresponding values click on the Go button and the new record will be inserted.

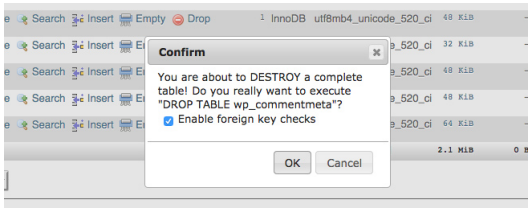
6.5 Empty

The Empty button allows you to empty a database table, removing the data and keeping the empty table.



6.5.1 Drop

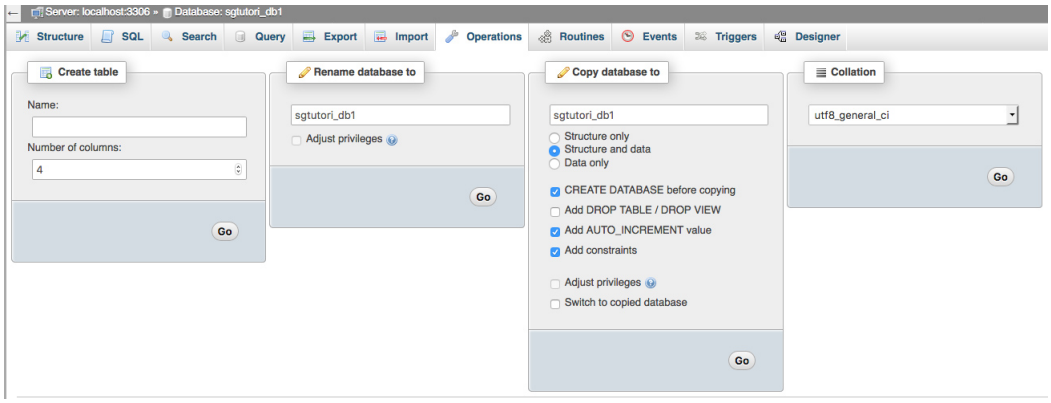
With the Drop button you can delete the whole table and all the records stored in it.



6.6 Operations

6.6.1 Database Operations

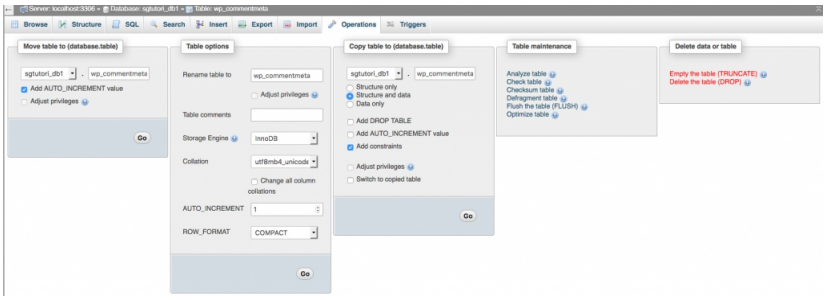
First you need to open the phpMyAdmin tool from your cPanel, then go to the Databases tab. Select a database and navigate to the Operations tab. A new page opens on which you can find all the possible operations which you can use on a database. The first section is named Create table. It allows you to create a new table under the



current database. Enter the table name and the number of the fields. Then click on the Go button to start the creation of the new table. After that, the process is the same as the one described in our tutorial.
The second section is named Rename database to. Renaming a database can not be performed directly through the phpMyAdmin area due to lack of privileges for the user. If you want to rename the database, you should create a new MySQL database, export the database tables and import them in the new one. Then you should delete the old database through cPanel -¿ MySQL Databases.
The same is the case with the Copy database to section. The difference with the above one is that you should not delete the source database.
The last section allows you to change the database Collation. Pick the preferred one from the drop-down menu and confirm the modification by clicking on the Go button.

6.6.2 Database Table Operations

To perform the corresponding operations on a database table, you should select the desired table in phpMyAdmin and click on the Operations tab. The Move table to section allows you to move the table with a new name under the current database or to move it under a different database.
In the Table options section you can rename the table, insert comments, change the storage engine and the collation.



Using the Copy table to section you can copy the table with a new name under the current database or it can be duplicated in another database.
Under the Table Maintenance section you will find different options which will help you to maintain your database table:

- Analyze table - analyses and stores the key distribution for the table. Then the MySQL server uses the stored key distribution for JOIN operations and for decisions which index to be used in a table query
- Check table - checks the table and the views associated with it for errors and problems
- Repair table - repairs a possibly corrupted table
- Optimize table - the action should be performed when you delete or modify many records from the table. It will reclaim the used space, defragment the data file removing the overhead and sort the indexes
- Flush the table - clears and reloads the internal cache related to the table