TBLIS® Version 2.0

User's Guide 1.0 (September 2017)

TBLIS is a Product of Landsat ICT Solutions

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1.0 Introduction

TBLIS is a state-of-the-art laboratory information management system developed with consideration of information management needs in Tuberculosis laboratories.
TBLIS facilitates input, analysis, reporting and security of data for patients, specimen and test results. The system consists of a MySQL relational database installed on a master server and a user-friendly web interface accessed on user computers.

2.0 Scope Of The System

TBLIS handles input, analysis, reporting and security of data for patients, specimen and test results, storage and inventory through the following functionality;

- User accounts and privileges management. The system registers user accounts and different users are assigned different access rights
- Patient and patient profile management. The system maintains records of patients and compiles their specimen history (All specimen from the same patient) including results for each specimen received.
- Requester management. The system keeps information of all requesting doctors / clinicians / laboratory personnel together with their phone contacts for the purpose of relaying back results to them
- Test management. The system manages tests and their respective results for each specimen. Tests for each specimen are easily added or modified and the system has ability to automatically order tests based on preset procedure for example depending on the study the sample belongs to.
- Specimen management. The system stores data on specimen from the time they reach the laboratory. The system automatically assigns a unique and incremental identification number (Lab No) to each specimen. Time and date of sample reception and processing are also recorded.
- Specimen storage management. The system allows entry of specimen storage data and provides details of where the specimen has been stored in case that specimen is to be retrieved.

  Results report generation. The system generates a results report for each specimen received at the lab and each report contains patient details, sample details, requester and health facility details and results for each test done on the specimen.
- Analysis reports generation, The system provides preset analysis reports (auto-generated) on workload, tests done, pending test reports, quality control reports, turnaround time reports on a regular basis and results comparison reports for selected periods of time.

- Data storage and regular data backup. The system stores all data on a local server at the laboratory premises to ensure confidentiality of patient information and performs automatic backup of the data to a specified backup location on a local network.
- Data extraction. The system has functionality for exporting and importing data to and from other programs such as Microsoft Excel.
- Study and project management. The system provides for addition, modification, activation and deactivation of studies and projects with their details like study code, contact person and contact addresses.
- Audit trail. The system maintains a record of successful and failed logins including time and user; patient and sample details accessed or modified; and patient medical history and/or test results accessed.

This Document takes the user through a step by step approach of using the different components of the TBLIS.

3.0 Procedure

Below are the list of main menu;

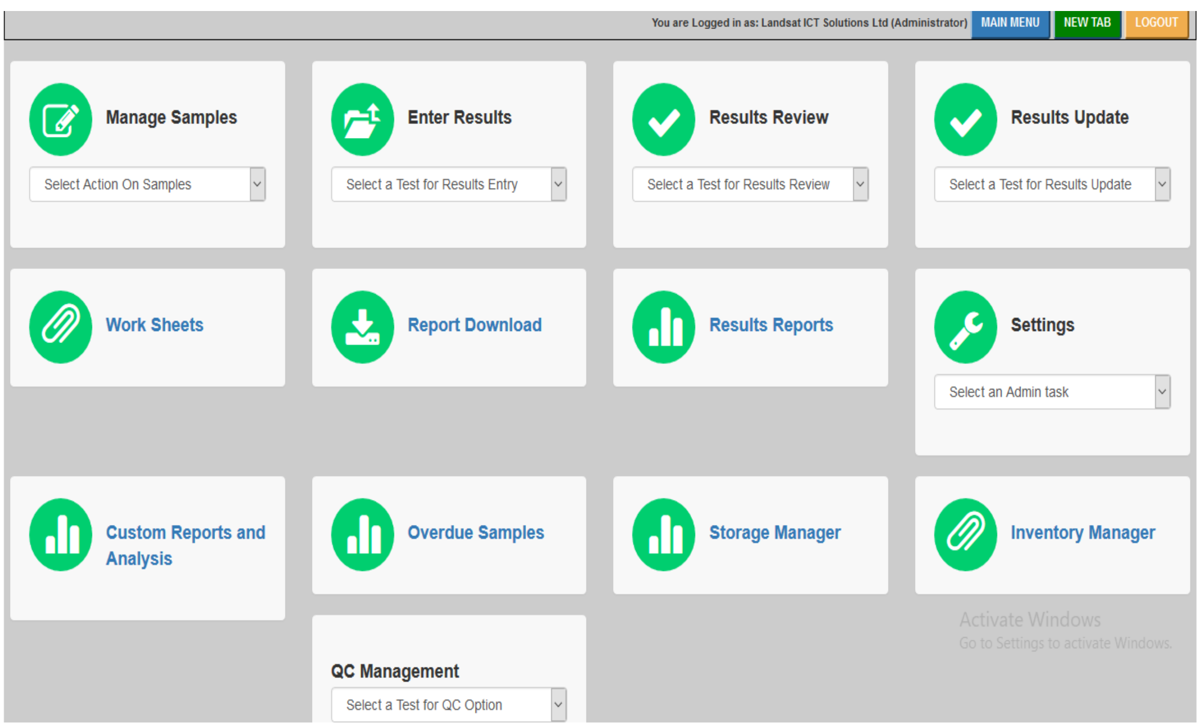
- Manage Samples
- Enter Results
- Results Update
- Worksheets
- Report Download
- Results Reports
- Settings
- Custom Reports and Analysis
- Overdue Samples
- Storage Manager
- Inventory Manager
- QC Management

4.0 Accessing the database

The database can be accessed by double clicking the icon on the desktop and this is created at the time of installing the database. The system will open in the default browser as set and all the browsers can work very well without compromising the system but Firefox browser is the recommended one.

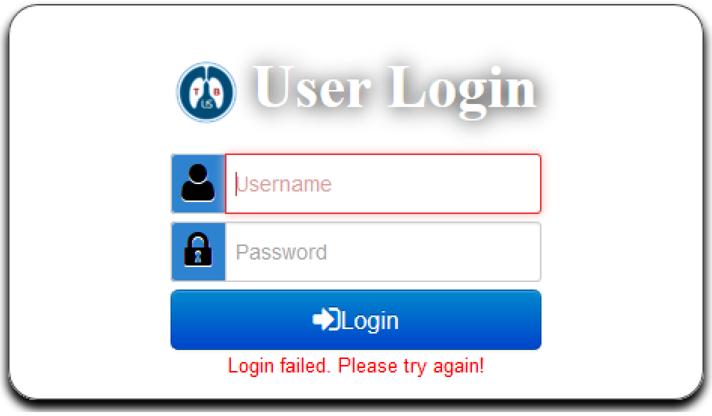
The system will open up in the interface below and you will be required to enter the username and password as assigned by the data administrator.

After Logging in with correct username and password, the database opens the menu Page as seen in the screenshot below and this manual will be different according to user roles.



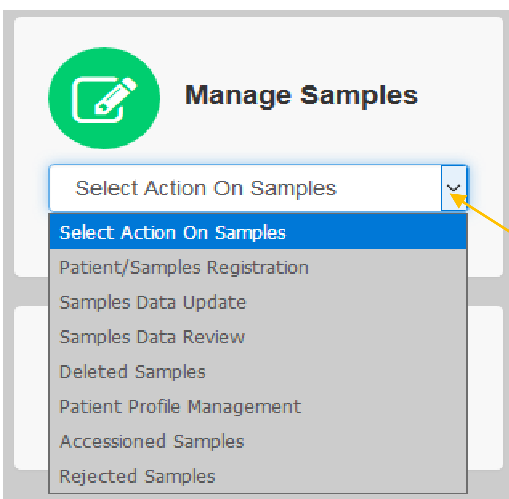
4.1 Login failure.

Once you login onto the system with wrong credentials you will not be able to login. In this situation you will need to contact your data administrator to update your login details and then you will be able to login. The interface below will show up if you login with wrong details.



5.0 Manage Samples

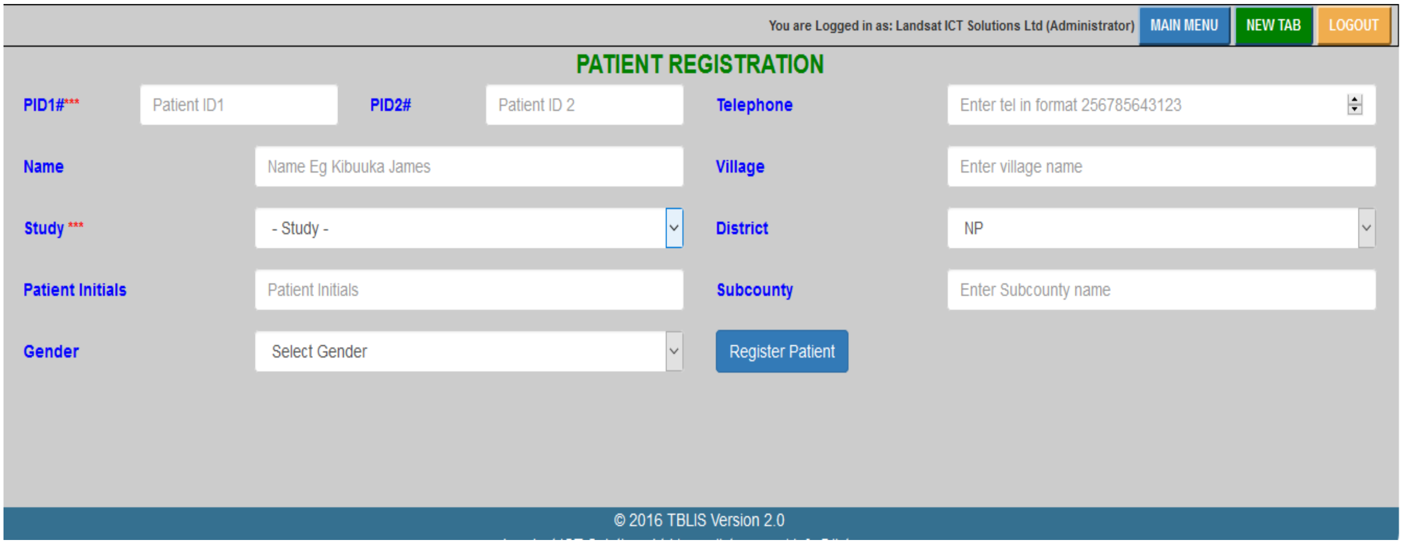
On the database menu click the Manage Samples drop down icon to have a list of items that can be done under Manage Samples. And for each item you select by clicking on it and this will take you to an interface that will help you capture data.



Click on the icon to have a drop down list

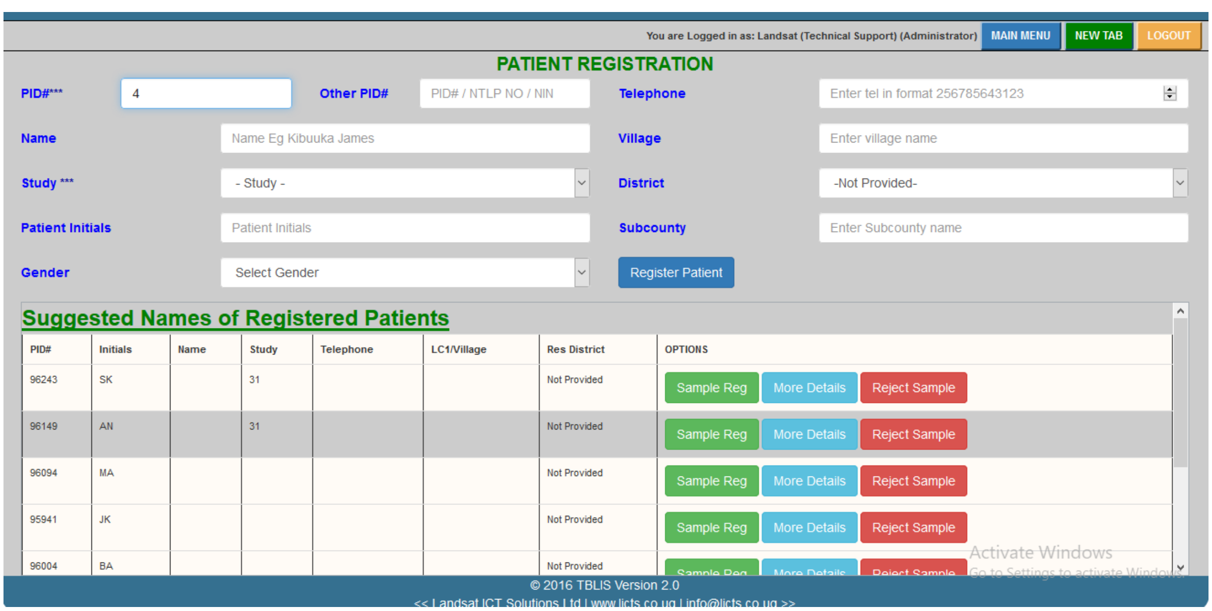
5.1 Patient Registration

Select any of the choices on the dropdown list and you will have a different interfaces and actions. This can be illustrated as below;



Note: The fields that have red stars *** are must enter fields and should never be left blank. If information for these fields are not provided, fill in the field with "Not provided". The lab tech can also enter must enter fields on patient and sample registration interfaces and the rest can be completed by the data team or later by h/s after accessioning all the samples received that day.

It is equally important to note that as you begin typing in the PID or patient name, the database will display similar names at the bottom under "Suggested Names of Registered Patients" as shown below.



The purpose of this is to ensure that if the patient exists in the database, the user should not register that patient again. Click on the sample Reg button 

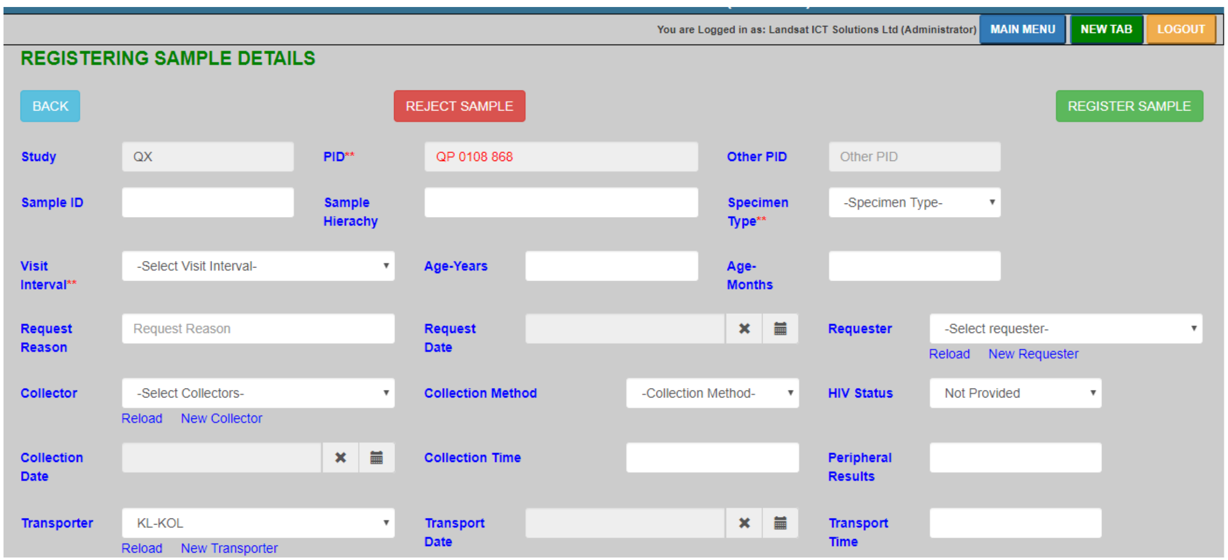
to register a new sample

under that patient and you can as well update patient details by clicking on more details button 

. If the patient is new there will be no result in the search window and for this case go ahead and register the patient. Once you click on register patient, you will be redirected to the sample registration form and please complete all fields marked with red starts to complete. The process can also be completed at later stage after entering mandatory fields and select few details accessioned and then you can complete later. The purpose of filling only the mandatory fields is to make sure that the sample can be processed when at least there is some information about it.

5.2 Accessioning Samples

In the sample registration form, enter all mandatory fields that are marked with ** , clinical information, specimen information, order for tests requested for on the request form, date and time of sample receipt as well as appearance and volume indicated on the request form shown.

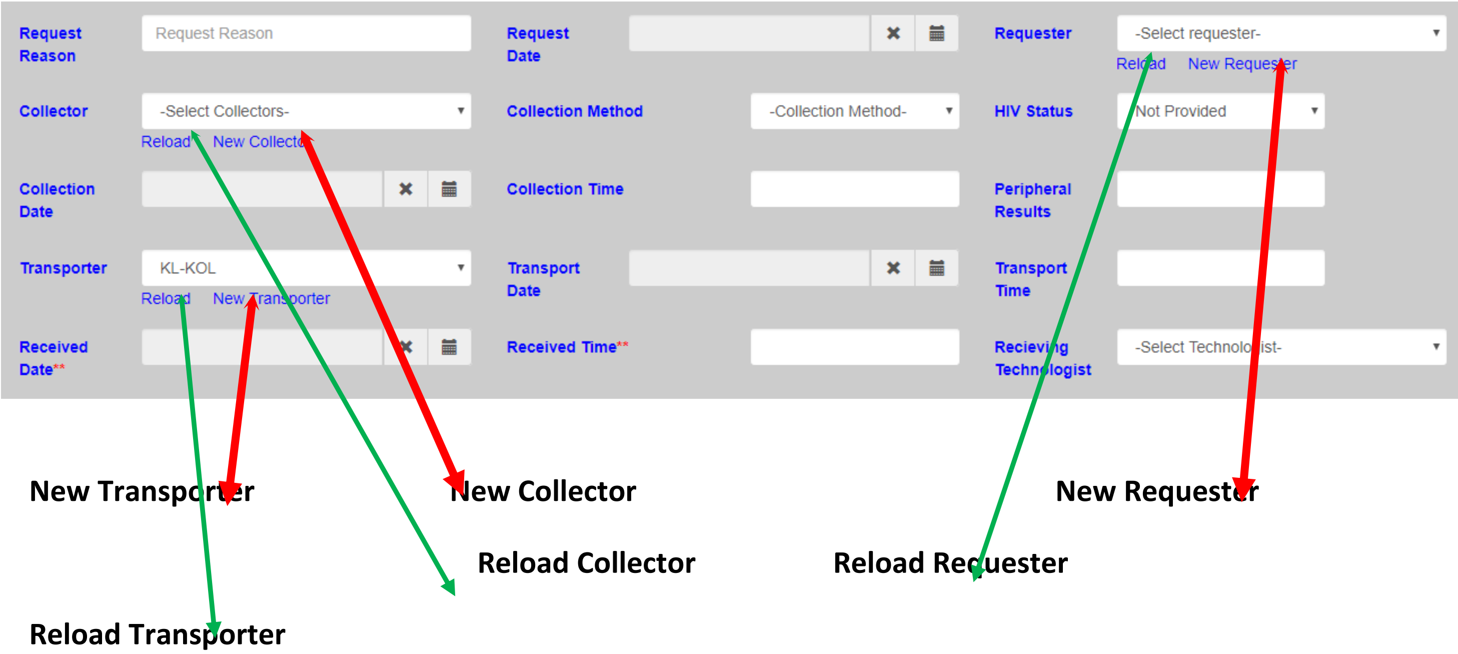


Note: Both patient and sample registration is done by the data clerk and the menu page may be different from what is displayed above.

After registering the sample, the database generates and accessioning number which the lab technologist writes on the request form and on the sample.

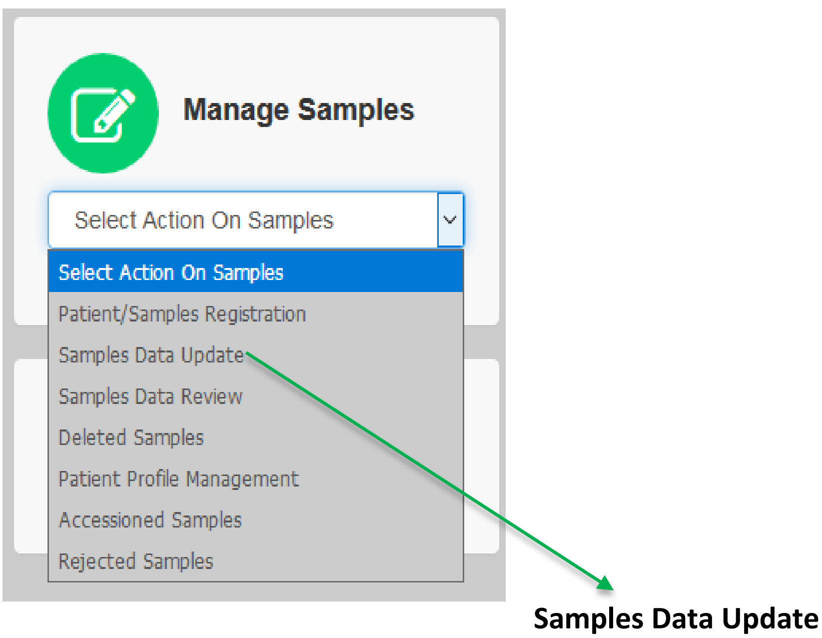
5.2.1 Registering New Requester, Collector and Transporter

While accessioning specimen details ,it is important to note that New requesters,collectors and transporters may not appear in their standard drop downs respectively,in such cases one has to add them by clicking Add new requester,new collector and new transporter respectively.On clicking new requester/collector/transporter , anew window opens requesting for registration



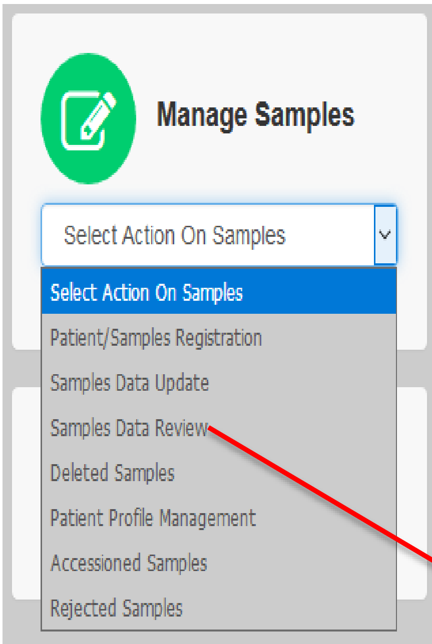
5.3 Editing sample Details

Select samples data update from Manage Samples Dropdown as shown below thereafter Enter the lab number indicated on the request form and click find to search for the information you would like to edit. Fill in the empty fields in the form according to what is provided on the request form and click save sample button to save the information.



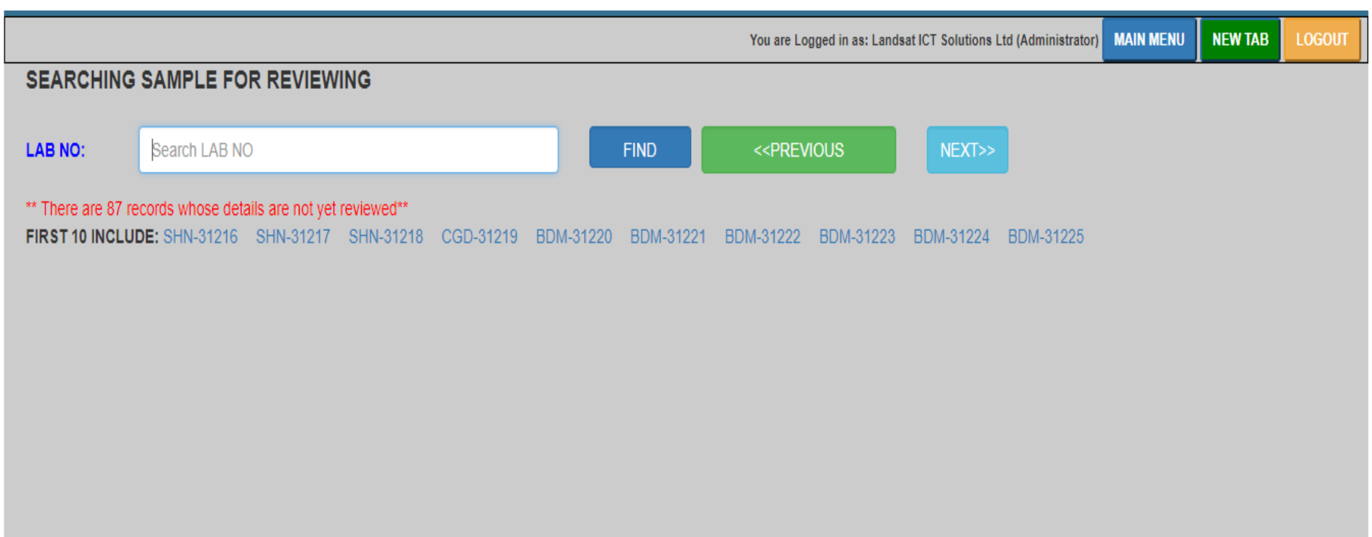
5.4 Reviewing Sample details.

After the sample information has been edited, it has to be reviewed by another person. To review sample information, on the database menu, select samples data review from Manage Samples Dropdown as shown below



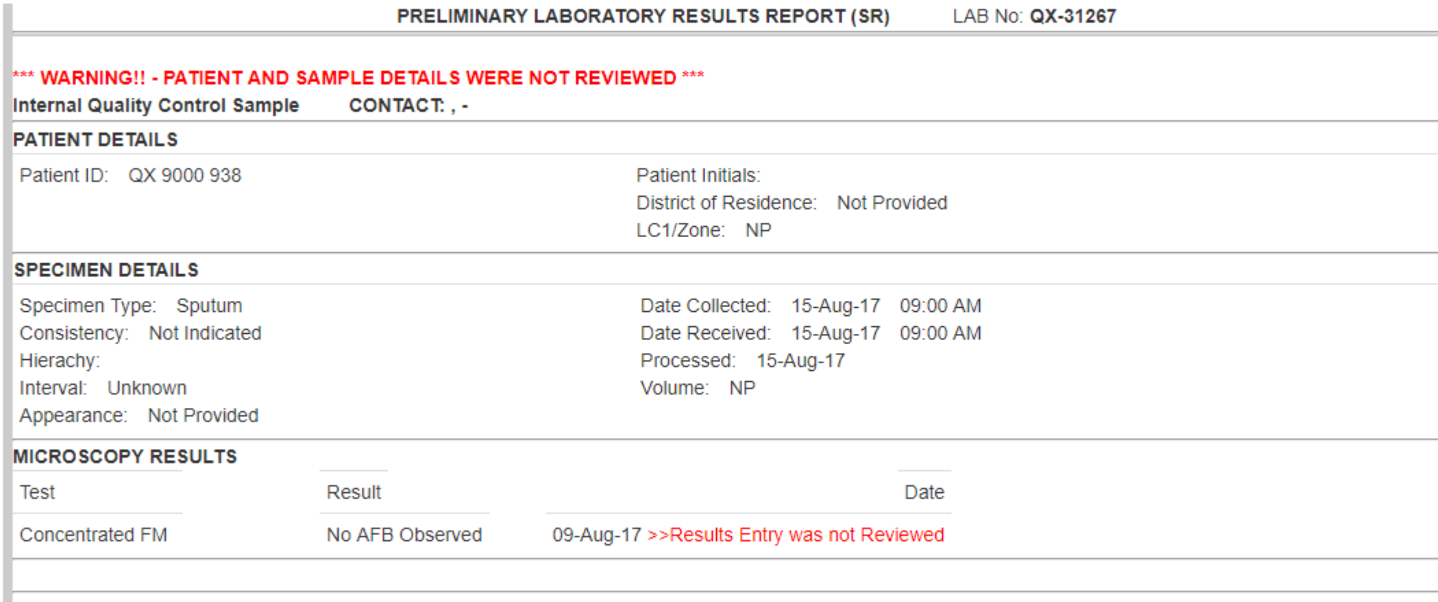
Samples Data Review

Then Enter the laboratory number in the Lab No field and click find.

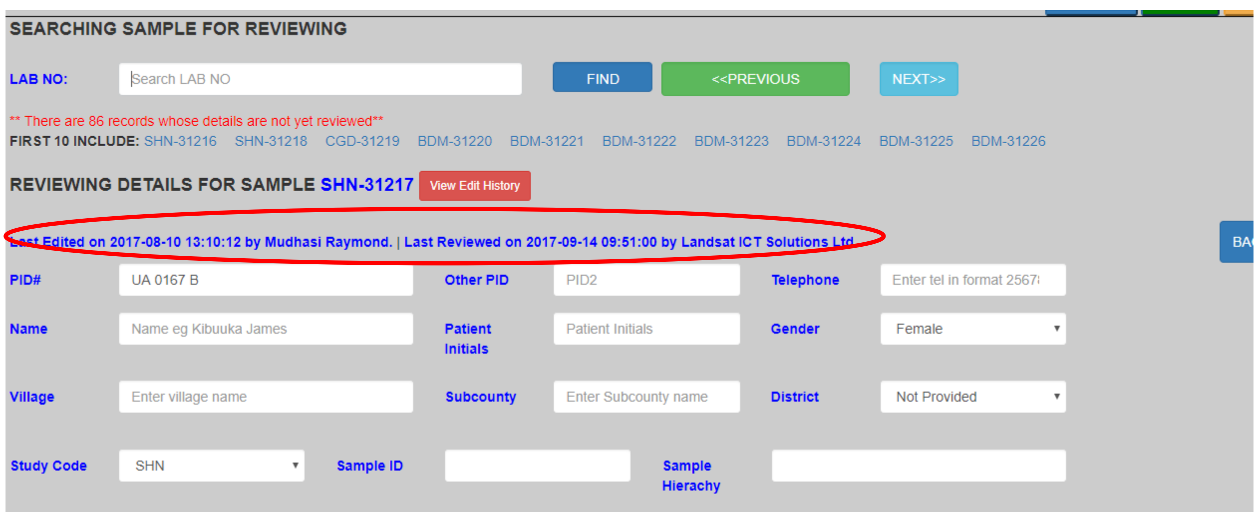


Compare what is on the request form and what has been entered into the database and if any information does not match what is on the request form, edit it and if all information matches what is on the request form, click the Review/Save changes button at the bottom of the form.

Note: If sample information is not reviewed, the report will show in red a warning that this sample information for that sample has not been reviewed as shown in the screen shot below.

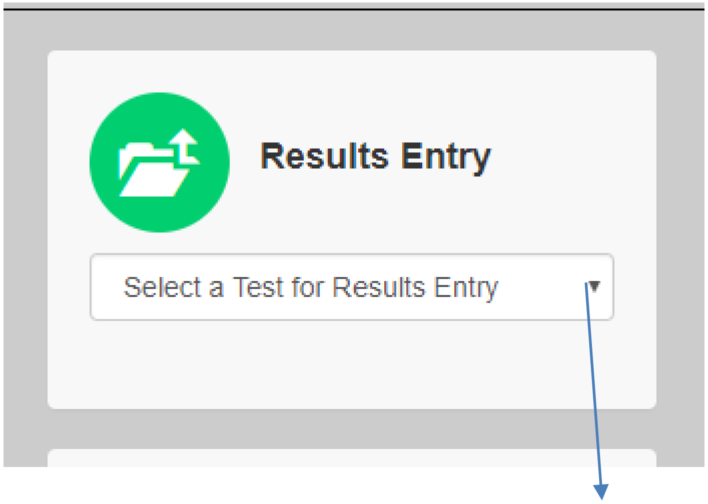


After review, the name of the person who edited and the person who reviewed will appear on top of the page as shown below.



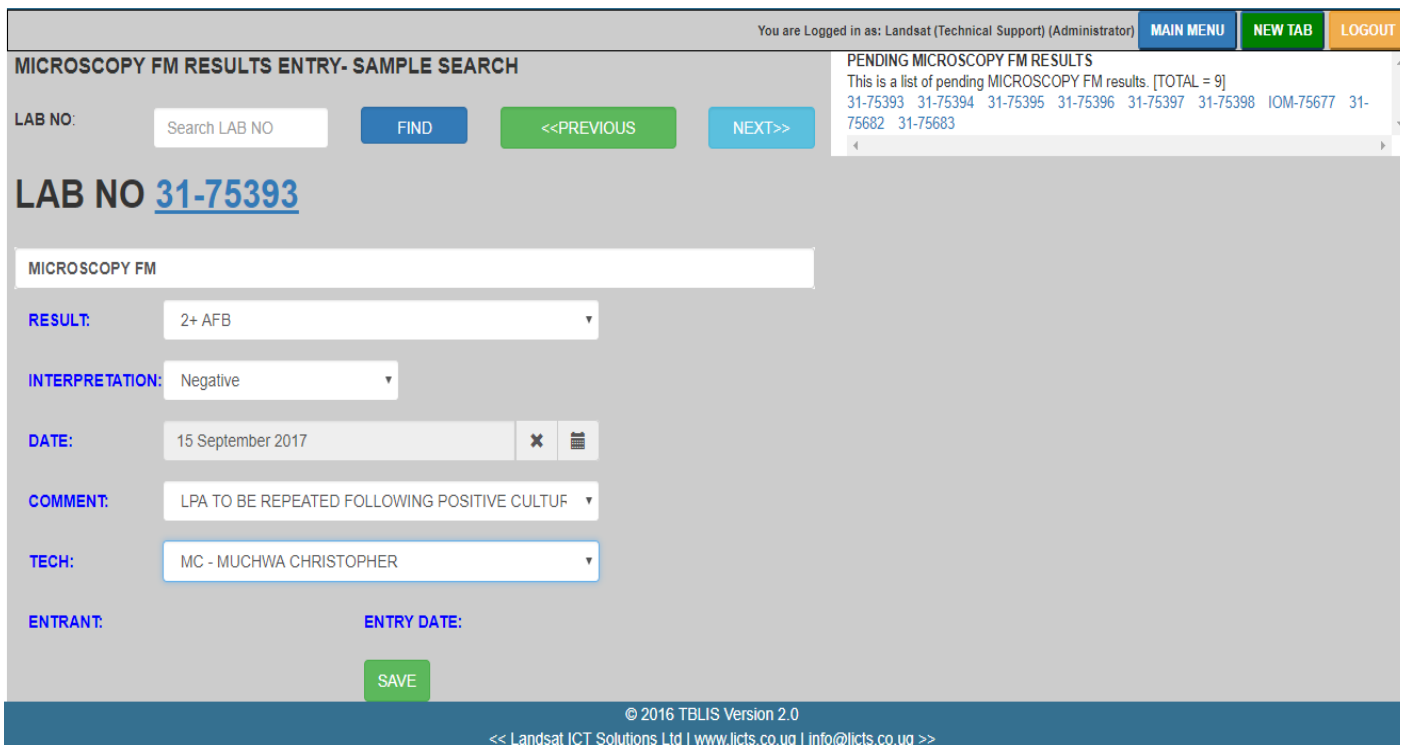
6.0 Results Entry

On the menu page under results entry button, click the drop down arrow to select which results you would like to enter into the database



Select option from this drop down

Then search for the lab number and enter its results and result date according to the worksheet and then save.



7.0 Printing Result Reports

The database allows for printing of three different types of result Reports. These include

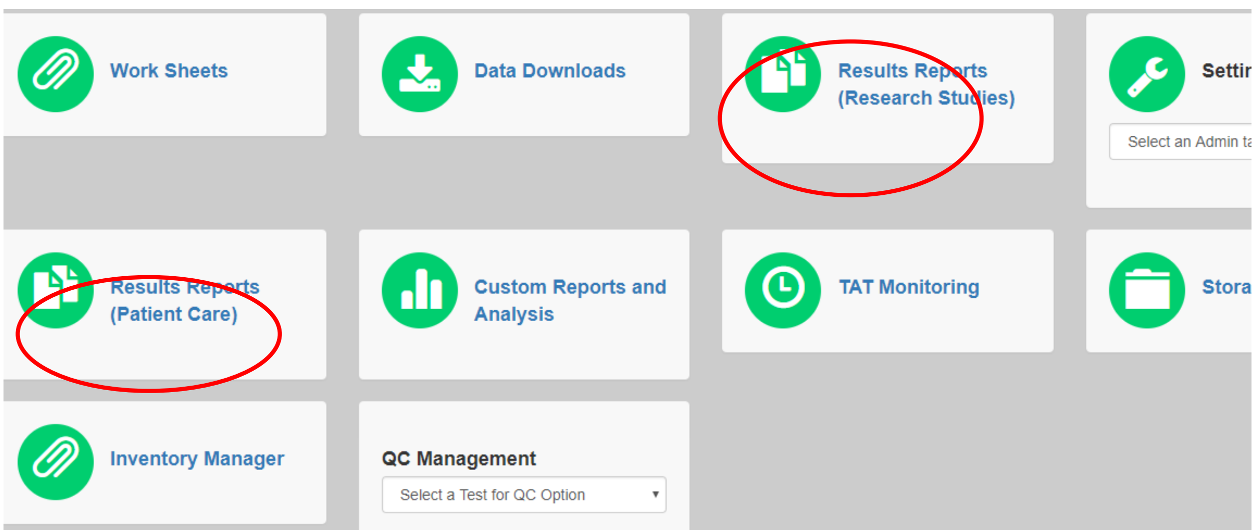
i) **The Preliminary report:** Printed when some of the results requested for are ready and some are still pending.

ii) **The Final report:** Printed out when all tests requested have been completed.

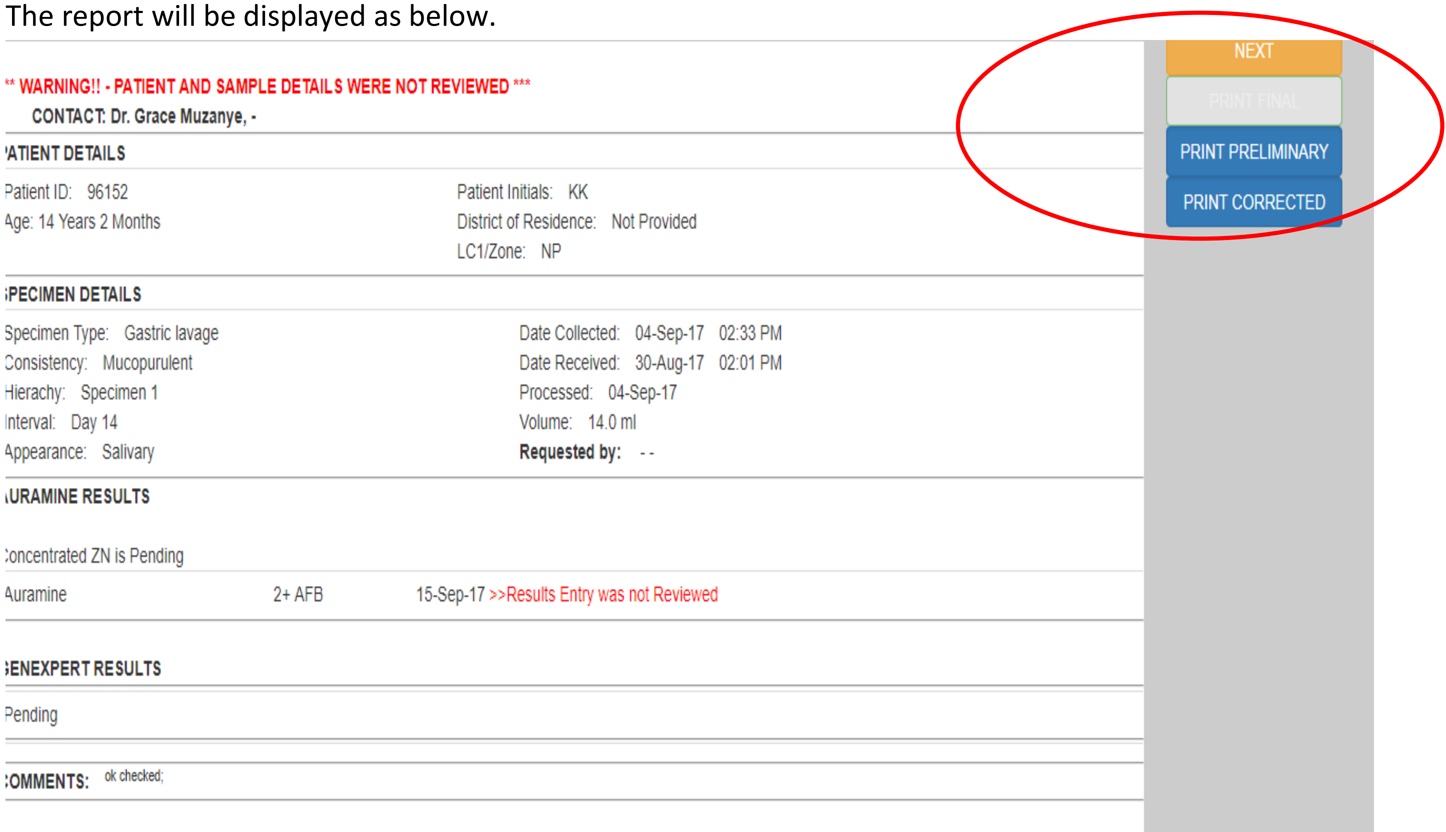
iii) **The corrected report:** Printed out when an erroneous report was previously released and has been corrected.

To print out any of the above reports, go to menu page and click Results Reports (Patient Care) Button buttons Results Reports (Research Studies) accordingly

Research Studies Reports are summarized reports, they include all methods and necessary steps that lab team under went to come out with final result whereas Patient Care Reports are basically summarized reports that displays basic information to communicate to the requester.



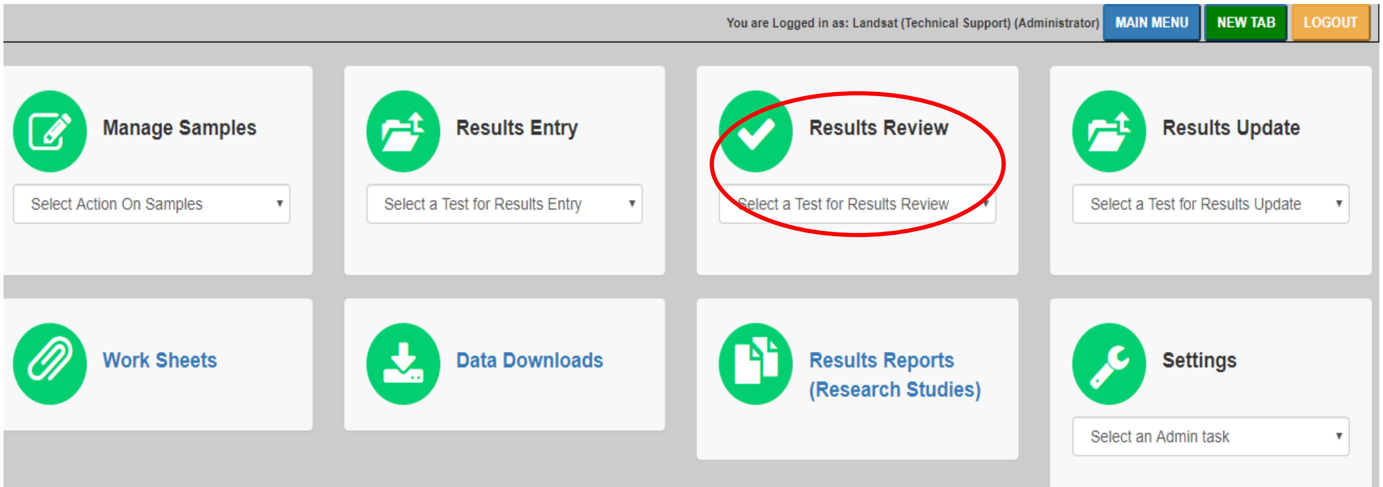
On the next window, type the lab number whose report you would like to print and click find. The report will be displayed as below.



In order to print any of the above mentioned report types for the lab number specified, click on the appropriate button circled in red in the screen shot above.

8.0 Results Review

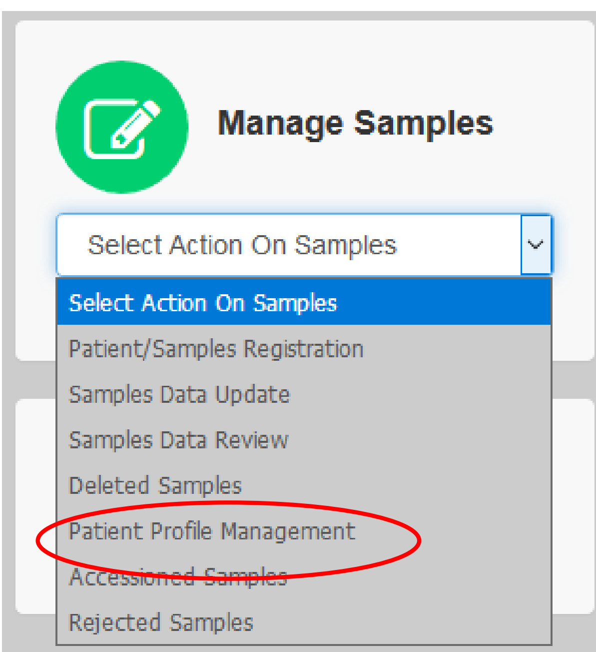
It is required that before patient reports are dispatched, results should first be reviewed by an authorized reviewer. To review results, on the menu page, click RESULTS REVIEW.



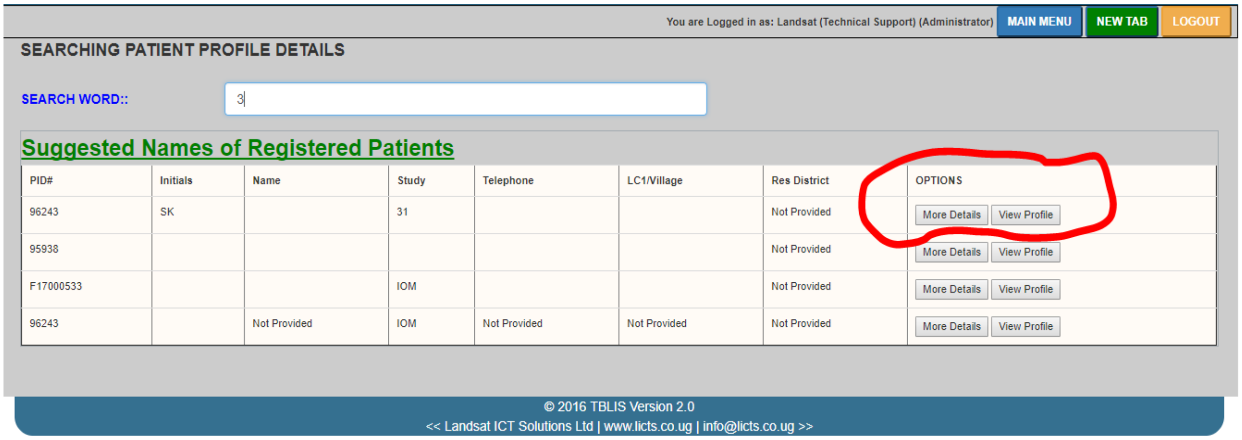
Type in the lab number for the result you would like to review and click find. Then compare what is on the results worksheet for that particular number with what has been entered into the database. Record any discrepancies.

9.0 Viewing Patient Profiles

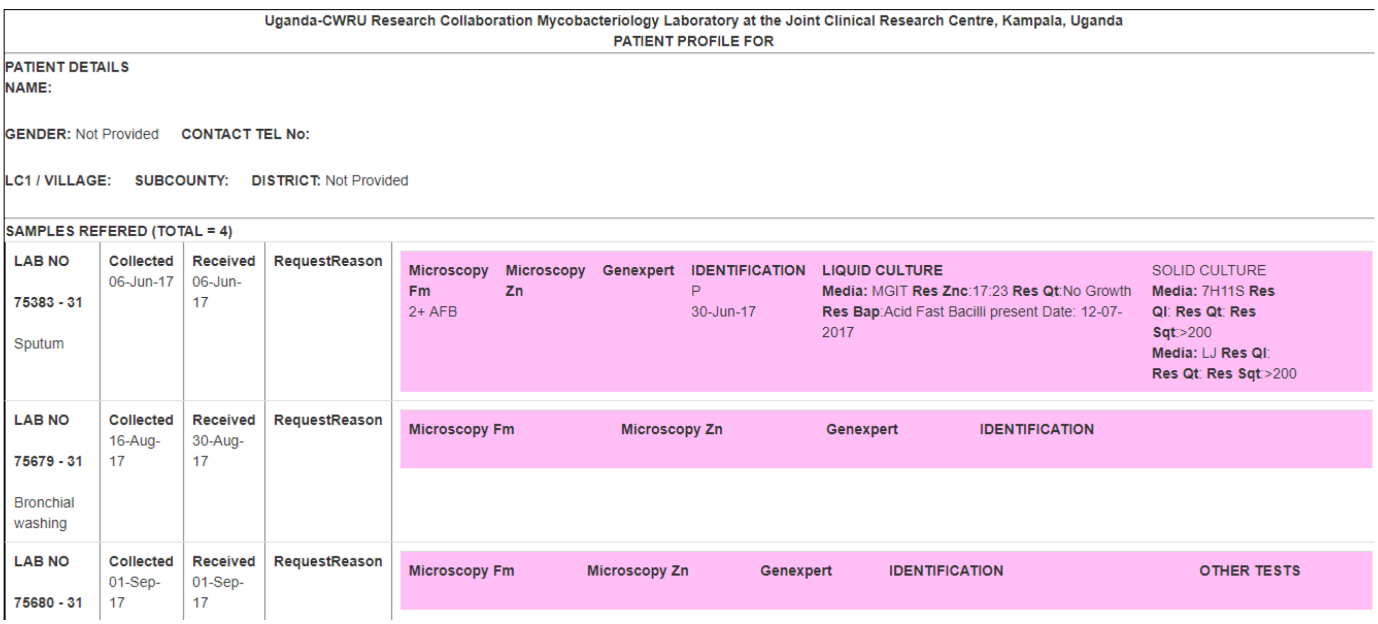
To view a patient's diagnostic history, on the menu page click on Manage Samples,then from the drop down select Patient Profile Management shown below.



As shown in the screenshot below enter either the PID OR Health Center ID or the Patient’s name. Immediately you begin typing a list of suggested patients will be displayed.



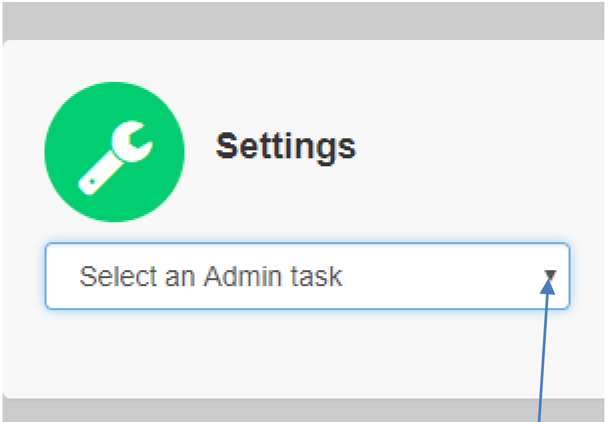
After identifying the patient whose profile you would like to review, under the options column, click view profile as shown above. This will display all the samples that have been received for that patient as seen below.



Click on close to close the window and return to the menu page.

10.0 System General Settings

System settings is a very important module that handles all dynamic drop downs and other common settings.



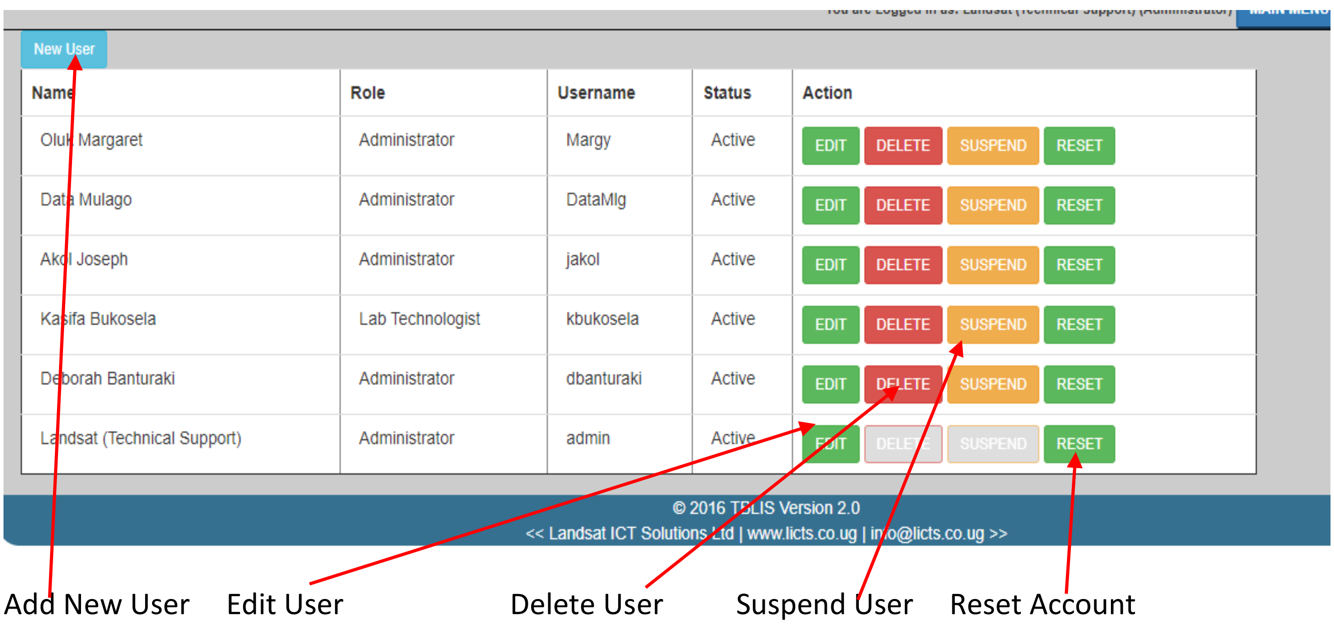
Drop down that leads to all settings options

Drop downs dynamically controlled under Settings include:

- Users
- Tests & Result Options
- Manage DST Drugs
- Manage Tests & Result Options
- Manage DST Drugs
- Sample appearance options
- Collection Methods
- DST Methods
- Studies & Projects
- Specimen Types
- Technologists
- Report Settings
- Footer Settings
- Result Comments
- Visit Interval
- Media Options
- Collectors
- Consistency

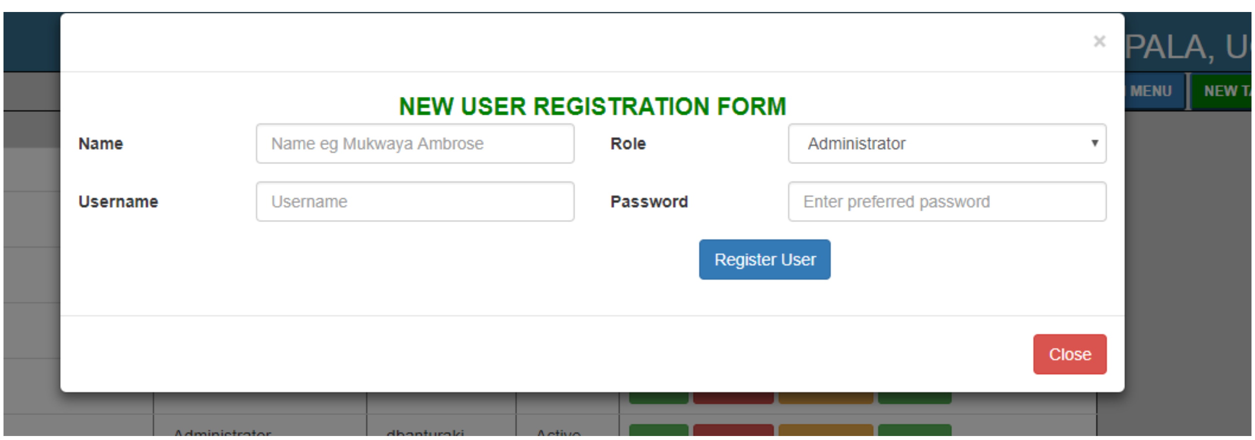
10.1.0 Manage Users

On the menu page click on Settings, From Drop down select Manage users on clicking a list of all current users will all be displayed with additional options of edit,delete,suspend ,reset or add new user as shown below.

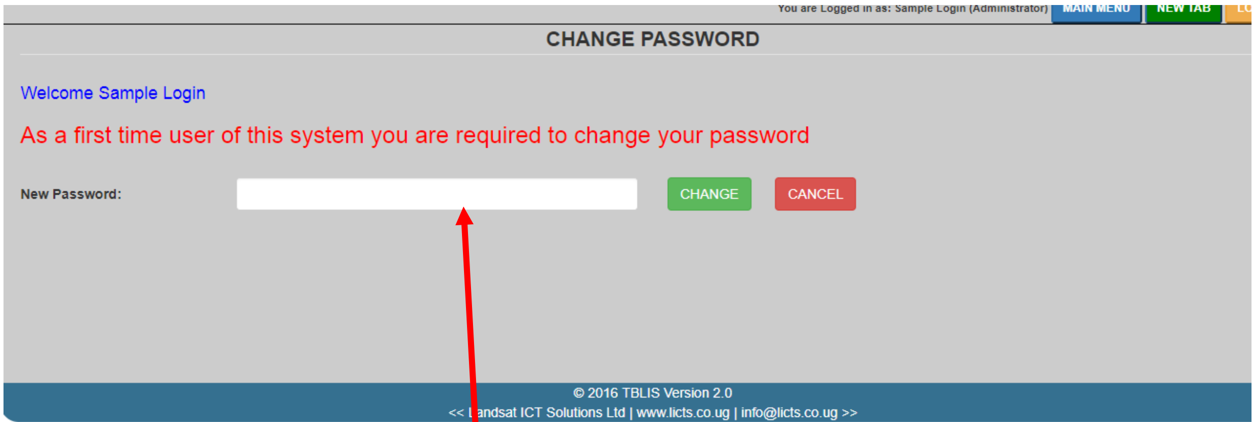


10.1.1 Add New User

To add a new user click on New User Button on top, On clicking the button a popup user registration form will appear fill in the details name (first name and last name),role,username & password.On saving success message will be displayed.



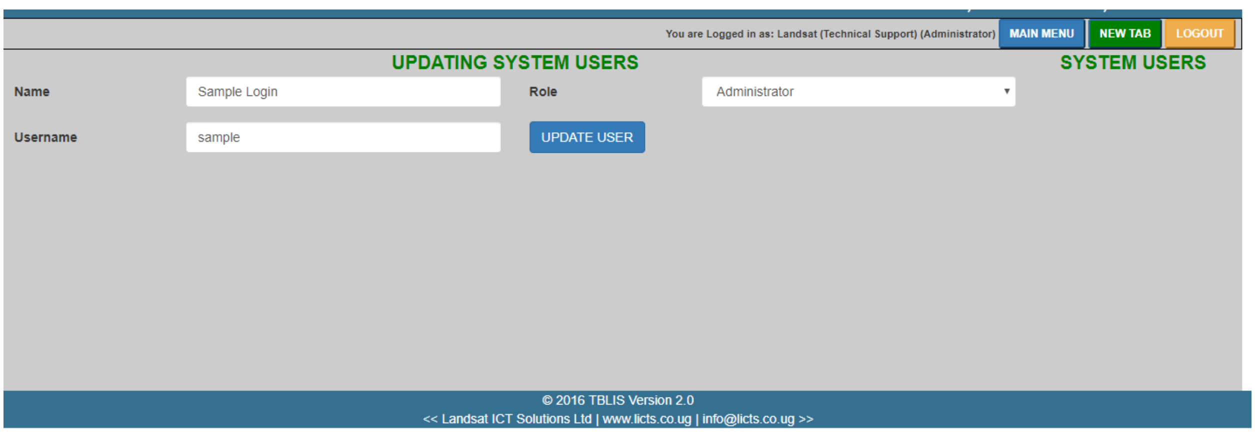
Note: If a new user is registered he/she will be required to change password on his/her first time login as shown below



User Is required to enter new password in the above field (This applies on first login)

10.1.2 Editing User

User details can be edited by clicking on edit button, editing option allows one to change name,username or user roles as shown in the picture below



10.1.3 Resetting User Account

In circumstances when a user is not able to login to the system, system admin can reset the account to default password. By clicking reset the account password is reset to 123456 and the following message will appear "**Password Successfully reset to 123456 Please advise the user to login and activate the account ".The account is by default set to dormant state until the default password is changed on first login**

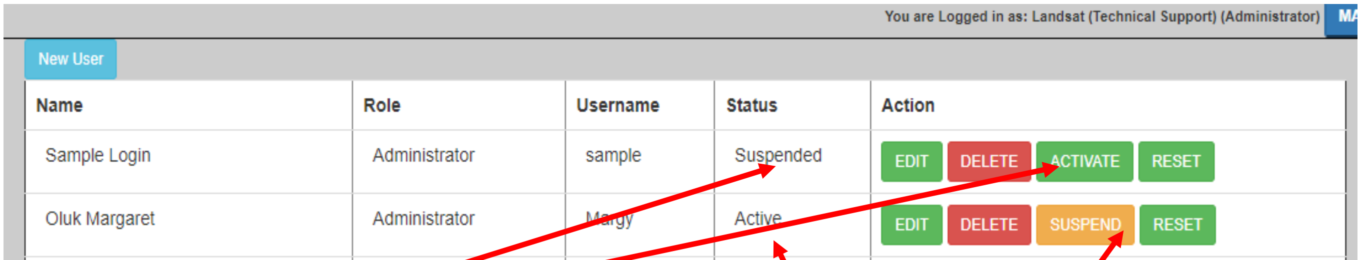
Suspending Account

Account is suspended so that specific user does not gain access to the system. This may be as result of many reasons which may include;

- User was fired
- user relocated to another department

- Or any other management reason

The same suspend button is used to re-activate the user, activate option only becomes available if certain user is under suspension and vice versa as shown below;

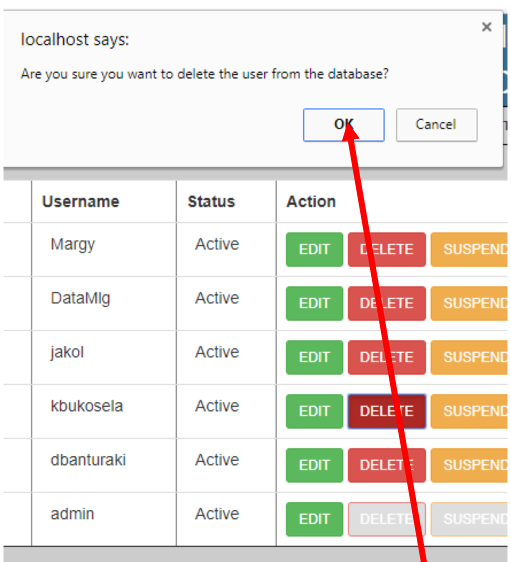


Activate option is active because account is under suspension

Suspend option is active because Account status is active

10.1.4 Deleting User Account

To delete a user account, click on delete button.A warning to confirm delete action will popup, to confirm delete action choose ok.

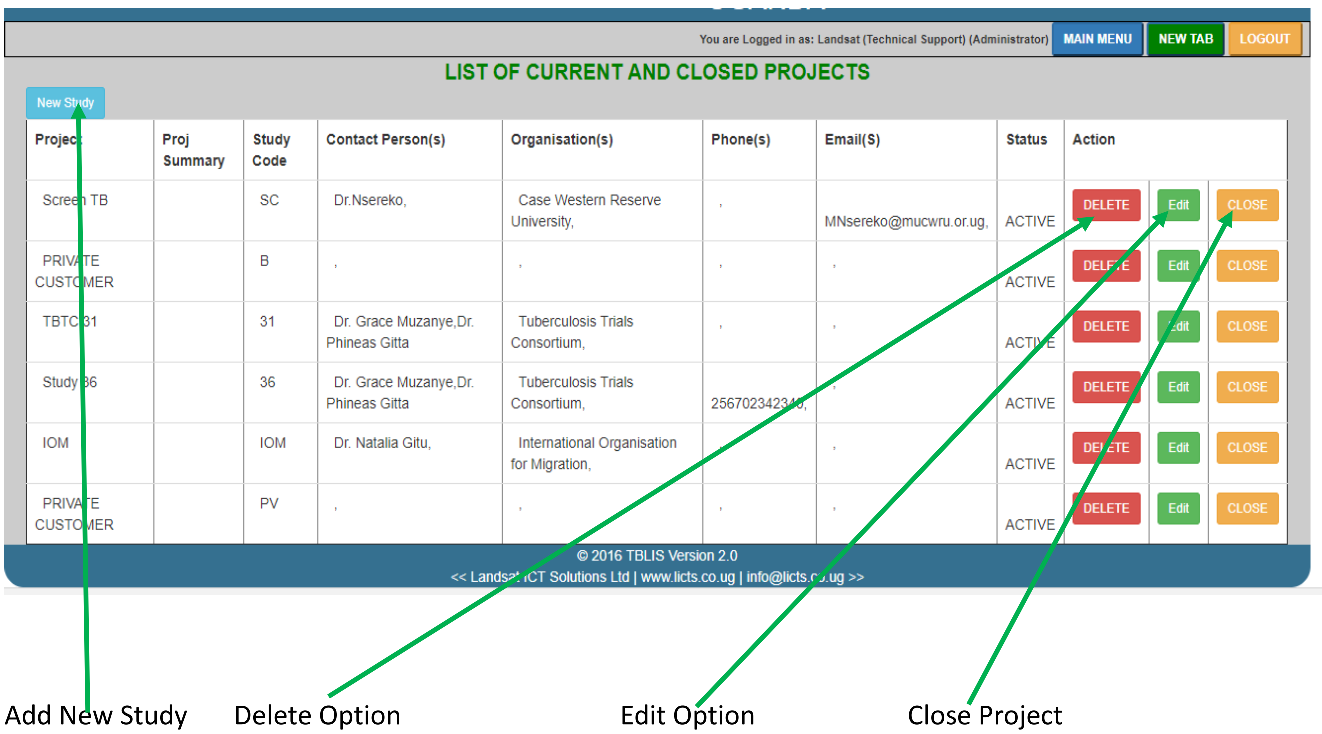


Click OK to confirm delete

10.2.0 Managing Studies

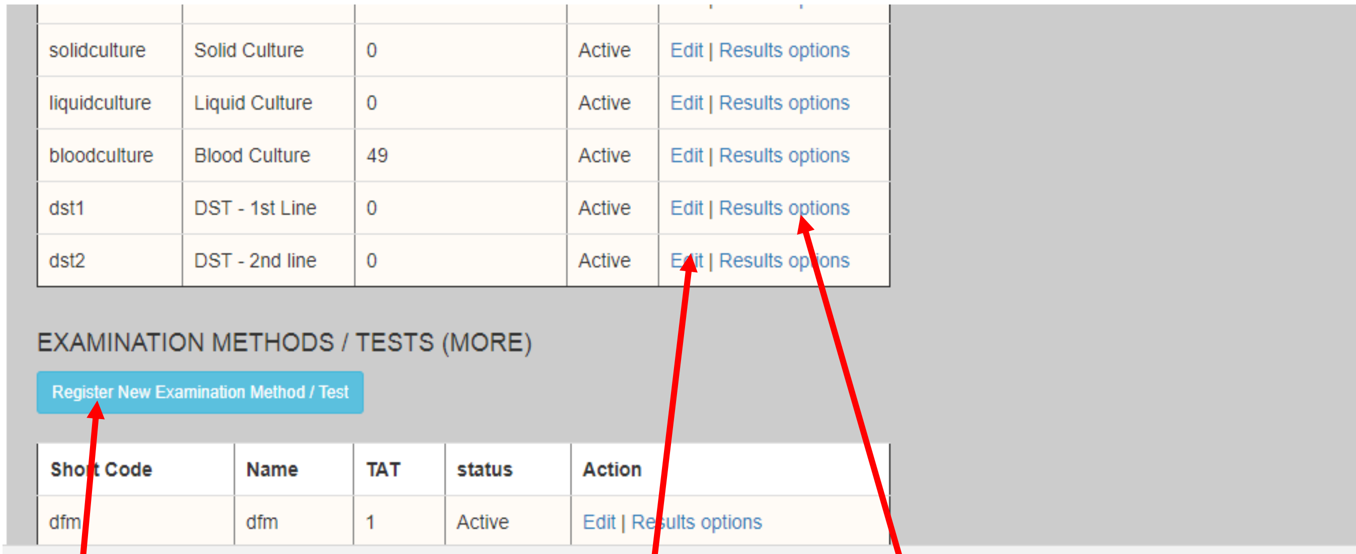
10.2.1 Adding New Study

To add a new study/project, Go to settings, select manage Studies/Projects. On clicking "**Manage studies & Projects**" , a list of ongoing and finished projects will appear. From here you can delete,edit or close a project. To add a new project click on New Study button , apopup will appear requiring you to enter details about the project , enter all required details and save.



10.3.0 Adding new results and test options

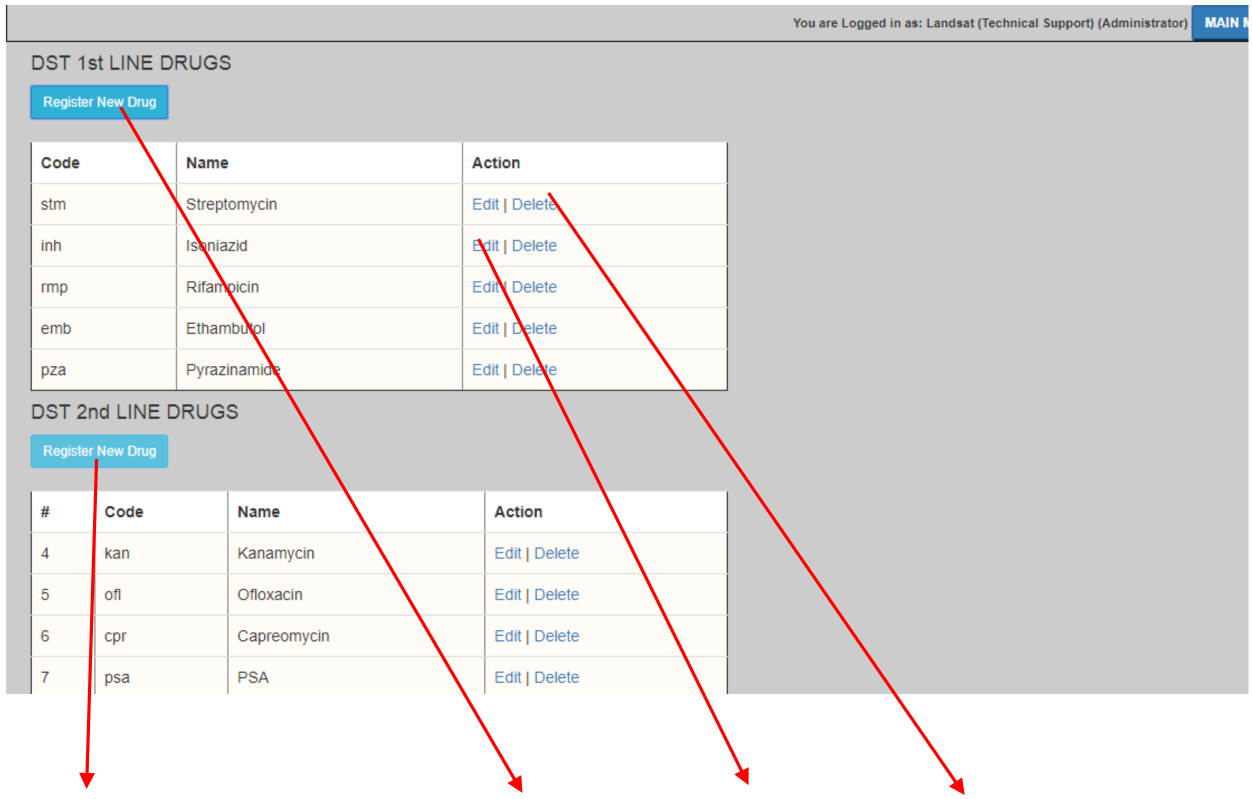
To add a new result and test options, Go to settings, select manage tests and result options. On clicking "**manage tests and result options**" , a list of all tests will be displayed with their result options will appear. From here you can delete or edit result options. To add a new examination/result scroll down and click on Add new examination/test project click on New Study button, a popup will appear requiring you to enter details about the project, enter all required details and save.



Click on this button to register new examination   Edit Test   Click here to enter result options

10.4.0 Managing DST Drugs

When a new dug is introduced, this drug has to first be configured via settings so that it will be possible for it to appear in other opions throught out the entire cycle.In case such new drug is not registered/configured under settings it will not be possible to accession samples which require DST of such a drug, it will not be available for results entry either.To register a new drug, click on settings ,select Manage DST Drugs from the drop down that will appear, on clicking all the current DST drugs will appear in their respective categories (DST1 &DST2), as shown below



Register New DST2 Drug   Register New DST1 Drug   Edit Option   Delete Option

10.5.0 General Dynamic Drop Down Options

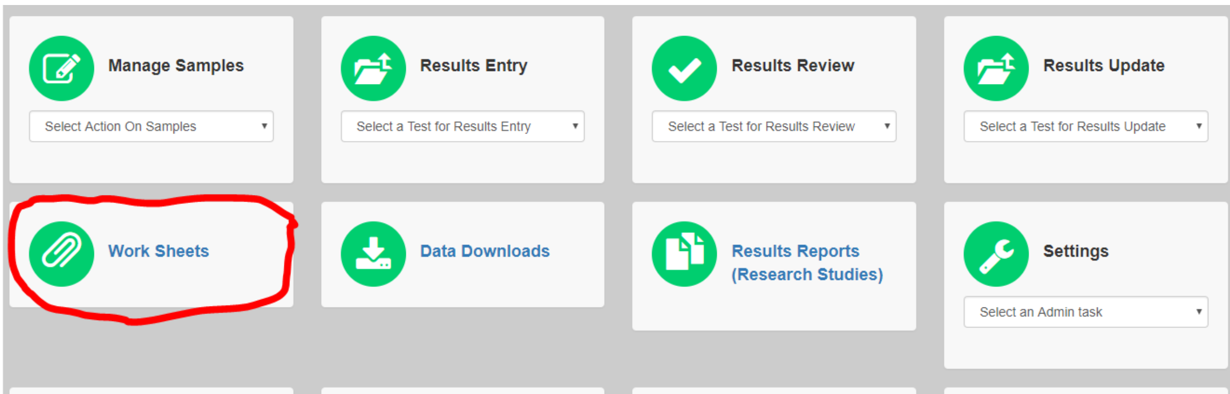
The system Settings Module also houses more than 10 dynamic dropdown options .Once these options are set from here, they automatically appear in their respective modules.These drop down options include;

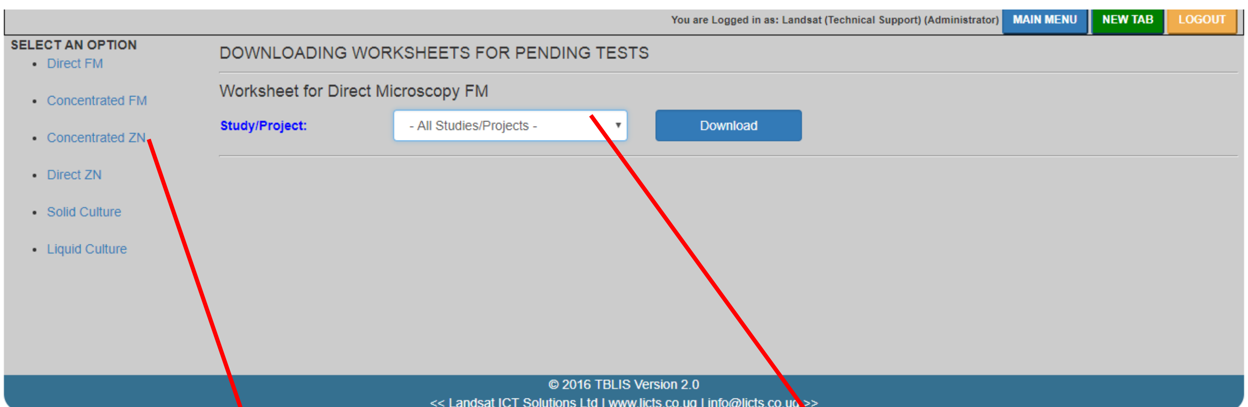
- Rejection Reason Options
- Consistency Options
- Identification Methods Options
- Media Options
- Visit Interval Options
- Results Comments Options
- Report Settings Options
- Technologists Options
- Specimen Types
- DST Methods Option
- Collection Methods Options
- Sample appearance options
- Specimen storage Options

To change these drop down options Go to settings (Manage [drop down name]) eg Manage Consistency Options

11.0 Worksheet

Once a sample is accessioned, its immediately made available in the worksheet.The worksheet therefore lists all accessioned samples whose results are still pending for specific test.To print worklist,go to main menu, click on worksheets, on click a list of various+ tests will be displayed on the left





A list of tests displays whose worksheets can be downloaded or printed

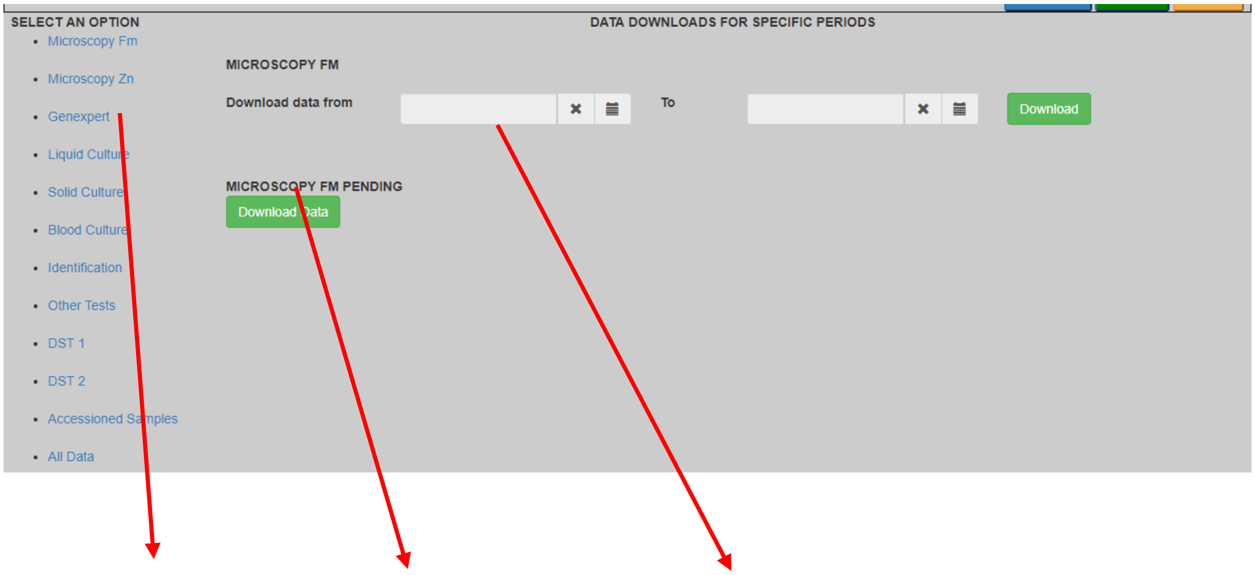
Filter by Study Filter by Study

12.0 Data Downloads

Data downloads module caters for most requested reports about samples and examinations(tests).This module has downloads with different filters which enables user to get customized reports thus the presence of filters like filter by test/examination, by dates, by studies or by specific labnos

12.1.0 Download Individual Tests Data

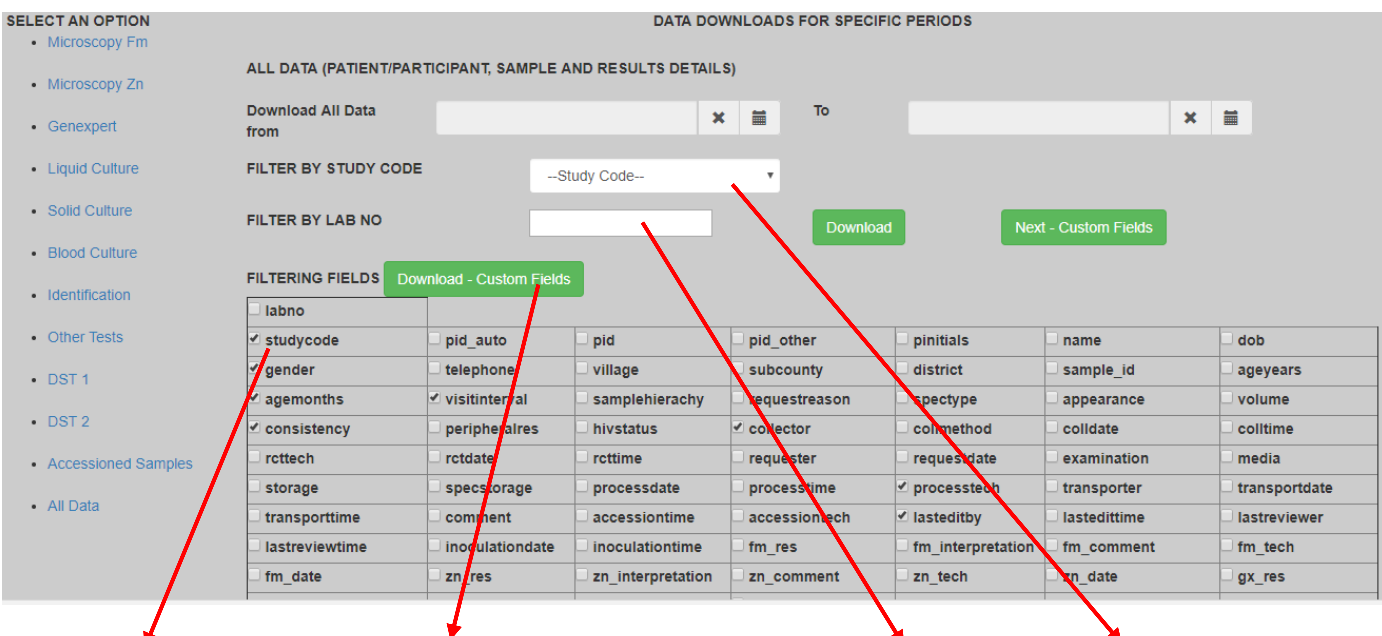
To download Individual Tests data , Click on Data downloads then select the test/examination of interest from the left sidemenu,then select desired filter either date filter or pending results



Select Test of interest **Filter by Pending Results** **Filter by Date**

12.2.0 Download all data

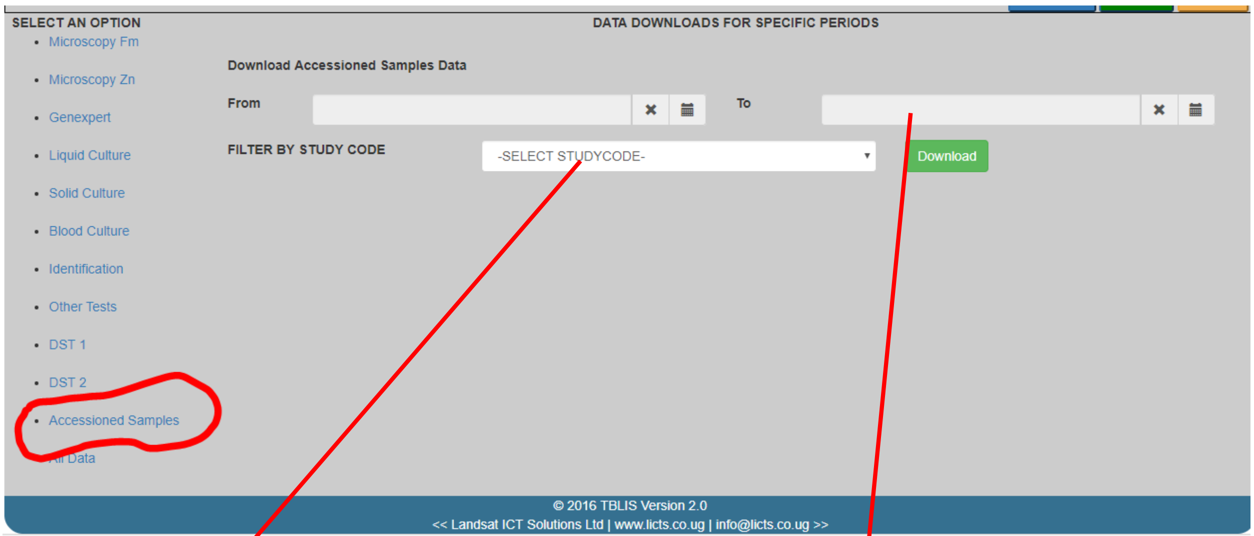
All data download is very important feature that allows user to get all data related to a given labno or study or without any filter. All data downloads also enables users to specify key fields that should be downloaded,this is done by clicking on **Next - Custom Fields** , on click A new tab will load with custom fields and a checkbox for each custom field ,after selecting various fields click on download custom fields **Download - Custom Fields** , an excel sheet will download with selected fields



Checked Custom fields **Download Custom Fields Option** **Filter By Labno** **Filter by Study**

12.3.0 Downloading Accessioned Samples

To download accessioned samples, click on data download, select accessioned samples select criteria either filter by date or by study.Any filter that is left empty,the system outputs all options the result, then excel sheet will be download with results of the defined criteria.



Filter by Study **Filter By Date**

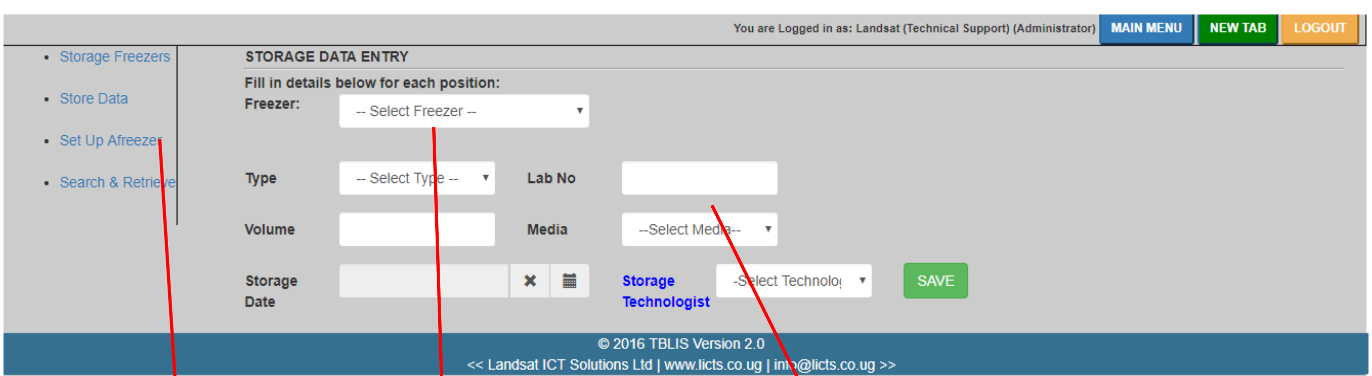
13.0 Freezer Storage

Freeze storage module basically keeps samples which will be stored either temporarily or permanently. The storage module keeps record of various freezers, their location, different compartments, boxes and racks.

13.1 How to store A sample

Click on 

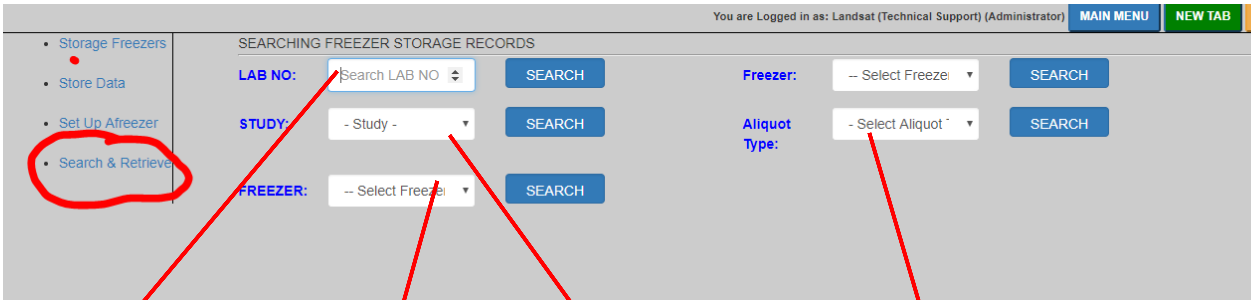
from Main Dashboard, there after a new page will load with side menu, from the side menu select Store Data from Side Menu, Enter all necessary data like freezer name, racker , box no, box label,storage,volume and other information



Store Data Option **Select Freezer** **Option Select Labno**

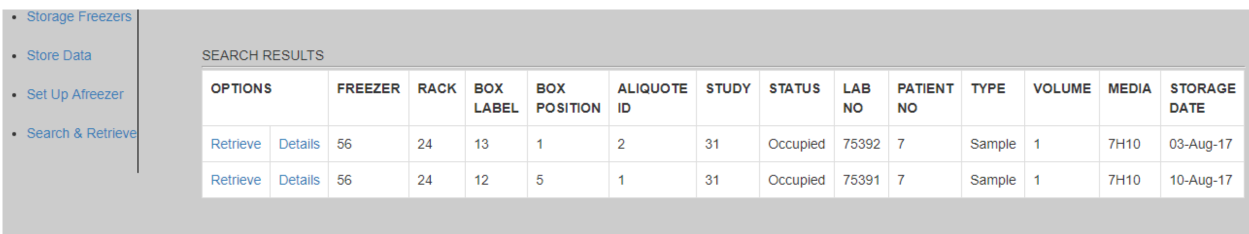
13.2 Retrieving Stored Sample/Isolate

While Loggedin Storage Module,select **Search & Retrieve** from the left side menu,onclick user will be availed with various search filters which include filter by freezer,by study,by labno or by aliquot type



Search by Labno **Search by Freezer** **Search By Study** **Search by Aliquot type**

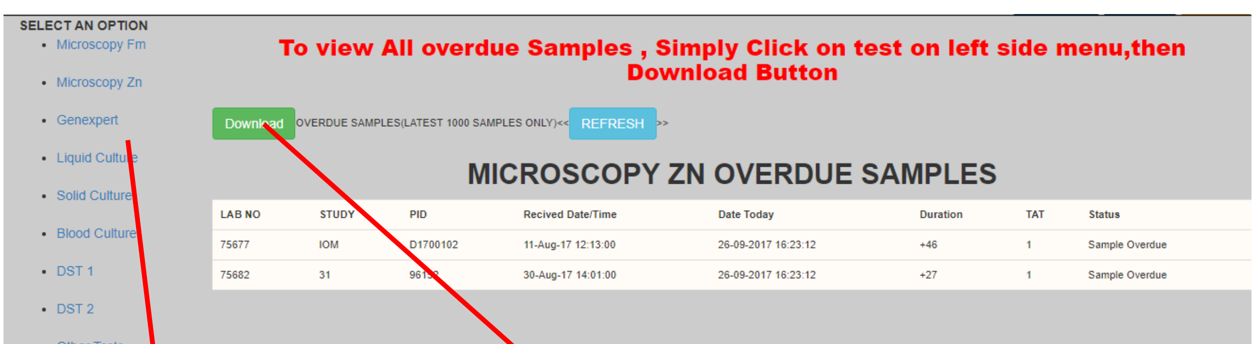
Upon selecting a search criteria and submitting, result are displayed as shown below



OPTIONS		FREEZER	RACK	BOX LABEL	BOX POSITION	ALIQUOTE ID	STUDY	STATUS	LAB NO	PATIENT NO	TYPE	VOLUME	MEDIA	STORAGE DATE
Retrieve	Details	56	24	13	1	2	31	Occupied	75392	7	Sample	1	7H10	03-Aug-17
Retrieve	Details	56	24	12	5	1	31	Occupied	75391	7	Sample	1	7H10	10-Aug-17

14.0 TAT Monitoring

TAT Monitoring module is basically used to monitor turnaround time (tat) of samples depending on vrious examinations requested

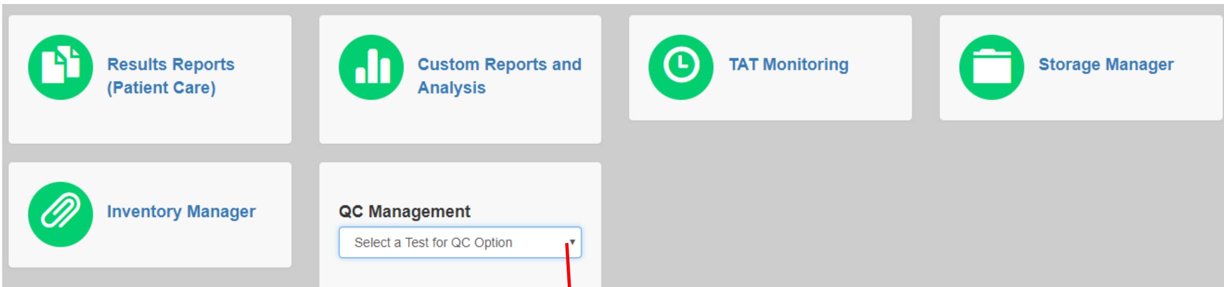


LAB NO	STUDY	PID	Recived Date/Time	Date Today	Duration	TAT	Status
75677	IOM	D1700102	11-Aug-17 12:13:00	26-09-2017 16:23:12	+46	1	Sample Overdue
75682	31	96152	30-Aug-17 14:01:00	26-09-2017 16:23:12	+27	1	Sample Overdue

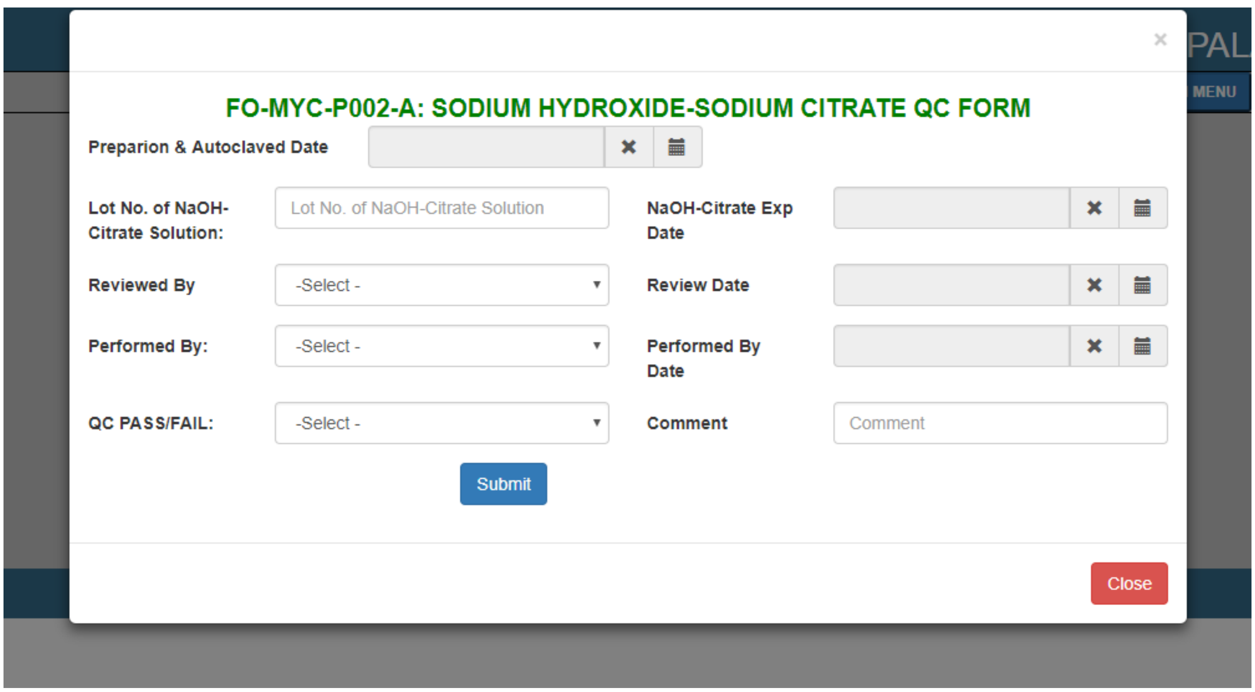
Select test Option of interest **Download to excel option**

15.0 Quality Control Management

To view Quality Control Data (QC) forms and entries select QC Management from main menu, then select from the drop down that appears

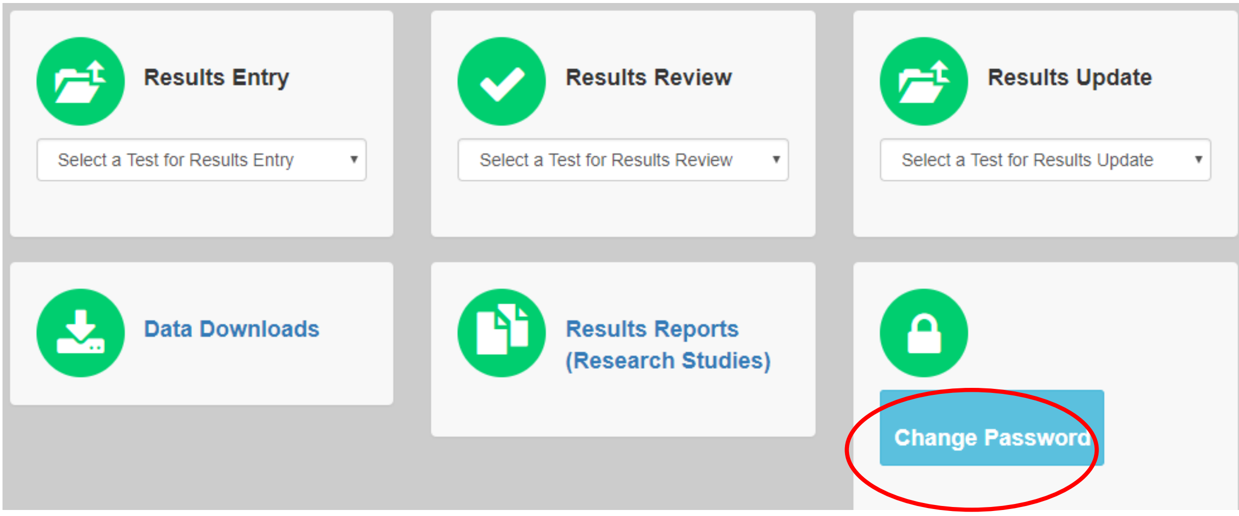


Select QC management Option of interest



16.0 Changing Password

In cases of forgotten password or if a user would like to change their password, on the menu page click CHANGE YOUR PASSWORD and enter a new password in the New Password Field then click the CHANGE button.



17.0 User Access Levels

There are four user access Levels in the database and these include:

17.1 Data Manager

This level is used by the t data manager to carry out the daily duties of the section and to carry out Administrative tasks. With the Data Manager Access Level, the user is able to access all components of the Database that includes Patient Registration, Sample Registration, Edit Sample details, Review Sample Data, Results Entry, Patient Profiles, Results Dispatch, Register New Users, access to Contacts and Admin Options which contain adding health Facility, Adding District, Adding Study, etc.

17.2 Sample Reception

This Level of Access is used by the personnel receiving Samples.With this level of Access, the personnel can register new patients and Accession samples.

17.3 Lab Technologist

This Level of Access can be used by any Laboratory personel. They can be able to receive Samples, register new patients, Accession samples, enter test results, view patient profiles and review results.

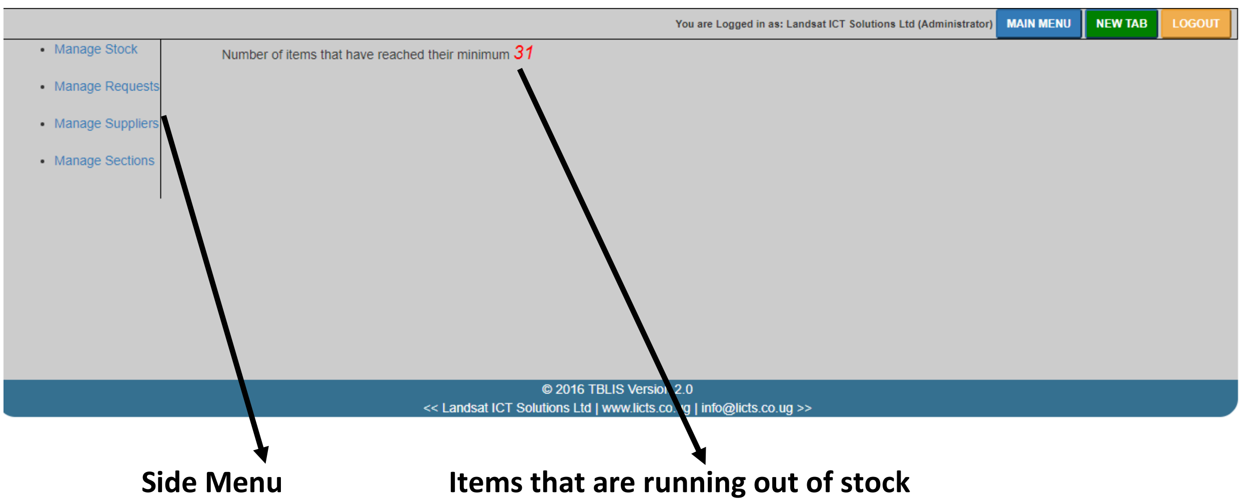
17.4 Data Clerk

This Level of access allows for a data personnel to edit samples, Review sample data, add a new patient and accession sample, view patient profiles, enter results, print results, dispatch results, review results as well as download data.

18.0 Inventory

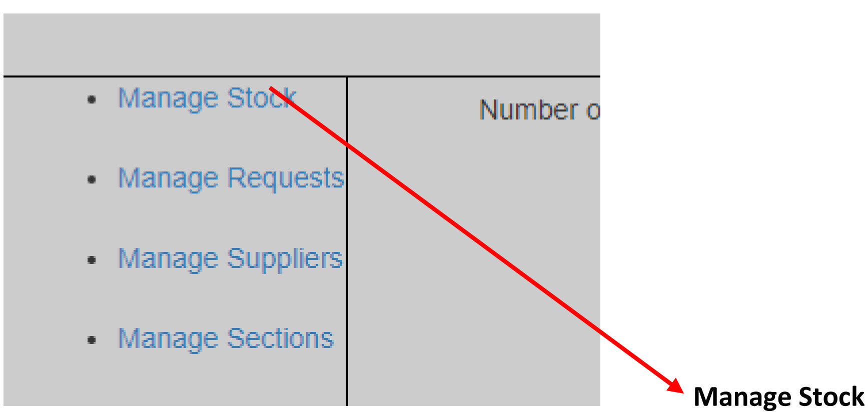
For A user to access inventory, he should have been assigned one of the following user roles at user registration stage Inventory Manager, Equipment Manager or Administrator.

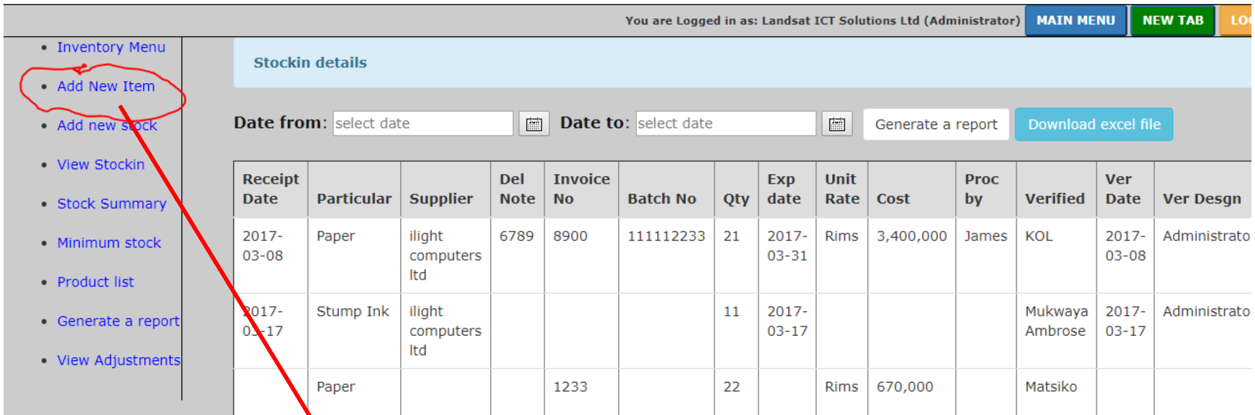
Once you are logged in into inventory, you will have access to inventory d=side menu as shown below



18.1 Adding New Item /Registering New Product

While Logged in Inventory,Click on Manage stock , there after click on Add new itrm from a new side menu that will appear as shown in following figures respectively

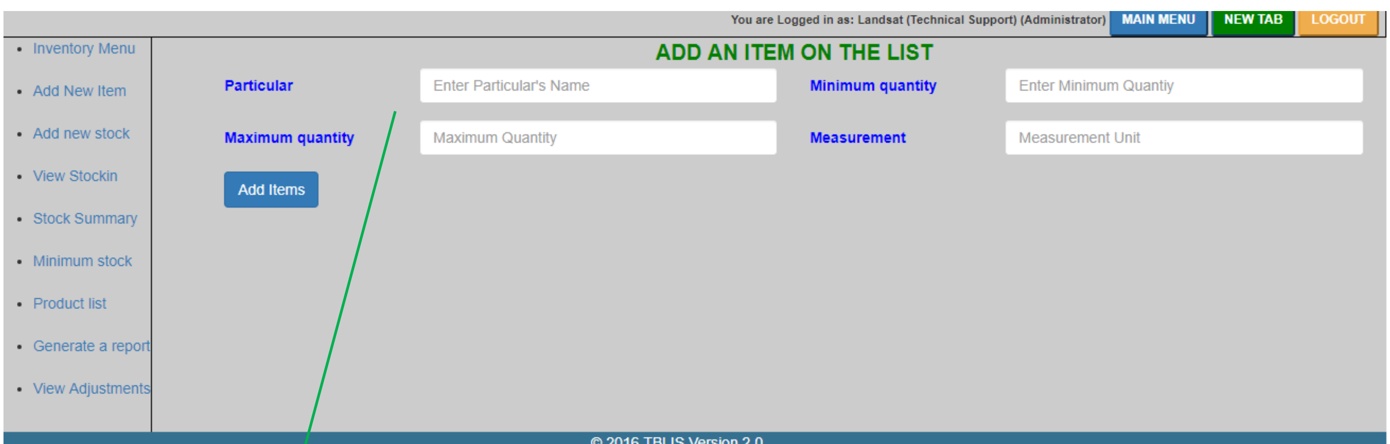




Receipt Date	Particular	Supplier	Del Note	Invoice No	Batch No	Qty	Exp date	Unit Rate	Cost	Proc by	Verified	Ver Date	Ver Desgn
2017-03-08	Paper	ilight computers ltd	6789	8900	111112233	21	2017-03-31	Rims	3,400,000	James	KOL	2017-03-08	Administrato
2017-03-17	Stump Ink	ilight computers ltd				11	2017-03-17				Mukwaya Ambrose	2017-03-17	Administrato
	Paper			1233		22		Rims	670,000		Matsiko		

Add New Item

While Registering a new item , a user is required to enter particular name,maximum quantity, minimum quantity and Measurement (items's measurement unit), Upon successful Registration a success message is displayed as shown below

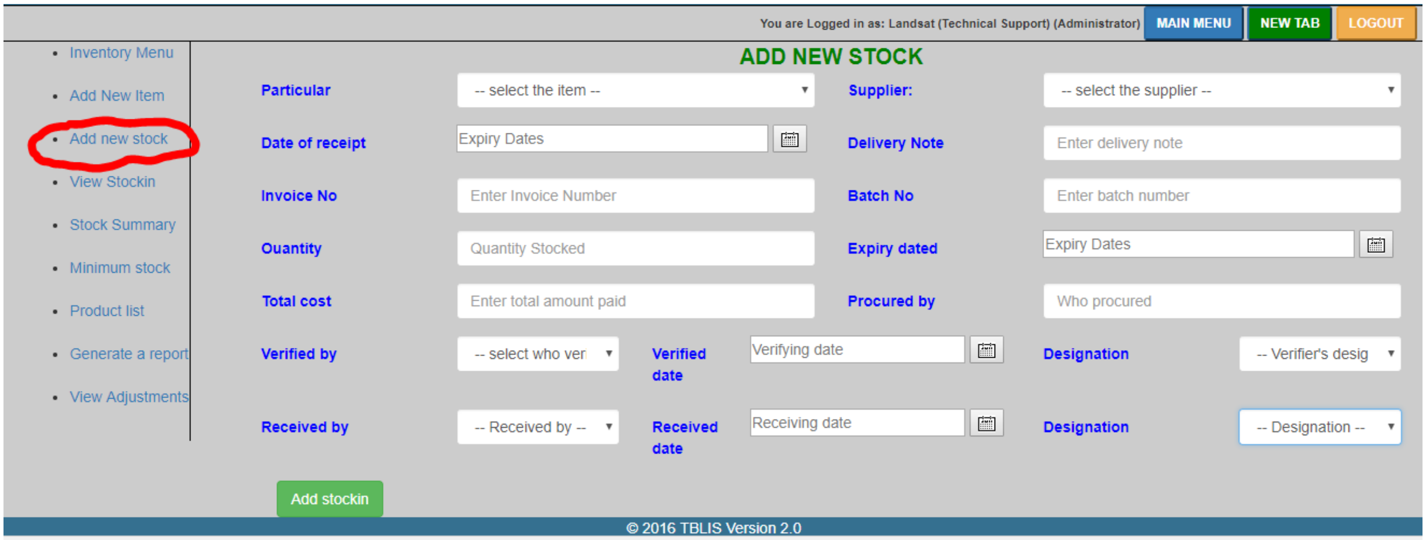


Key fields to capture (Item name,maximum quantity,minimum quantity and standard measurement

18.2 Adding Stock /Restocking

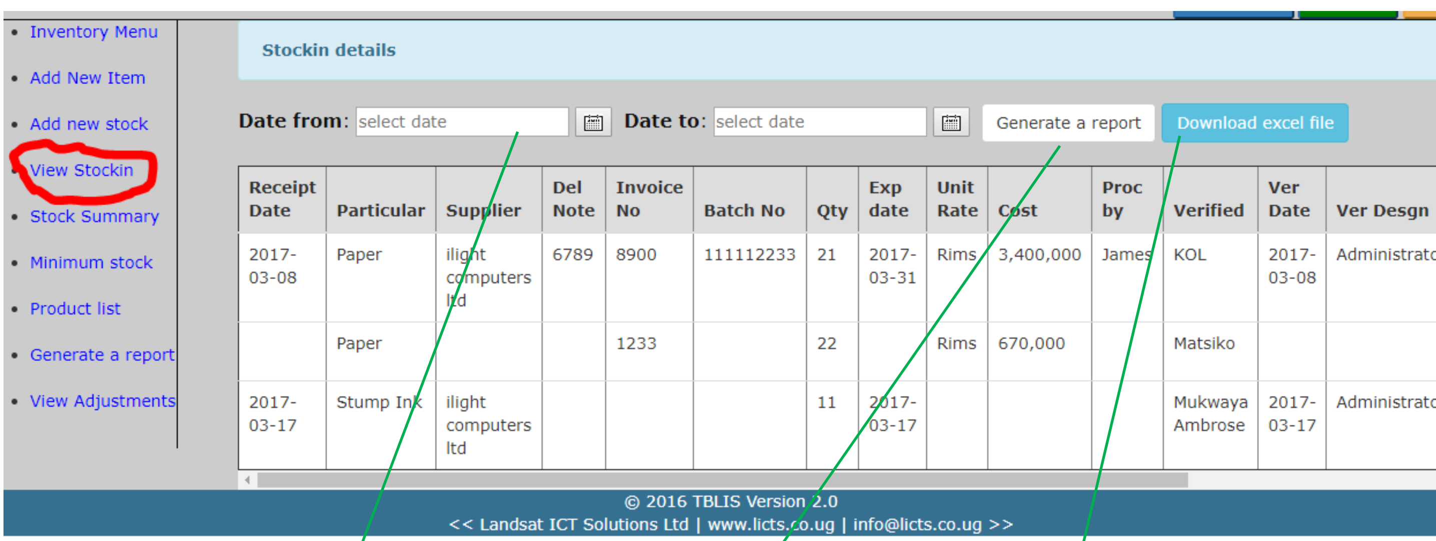
While logged in inventory ,click on Manage stock from the left side menu, thereafter click on Add new stock from the new sidemenu that will appear .A data entry form will then appear , fill in all the information that apply to specific stock .

Note: Suppliers, item name ,issuing officer and verifying must be already in the list of registered suppliers, items and admins respectively



18.3 Viewing Stocked Items & Stock Reports

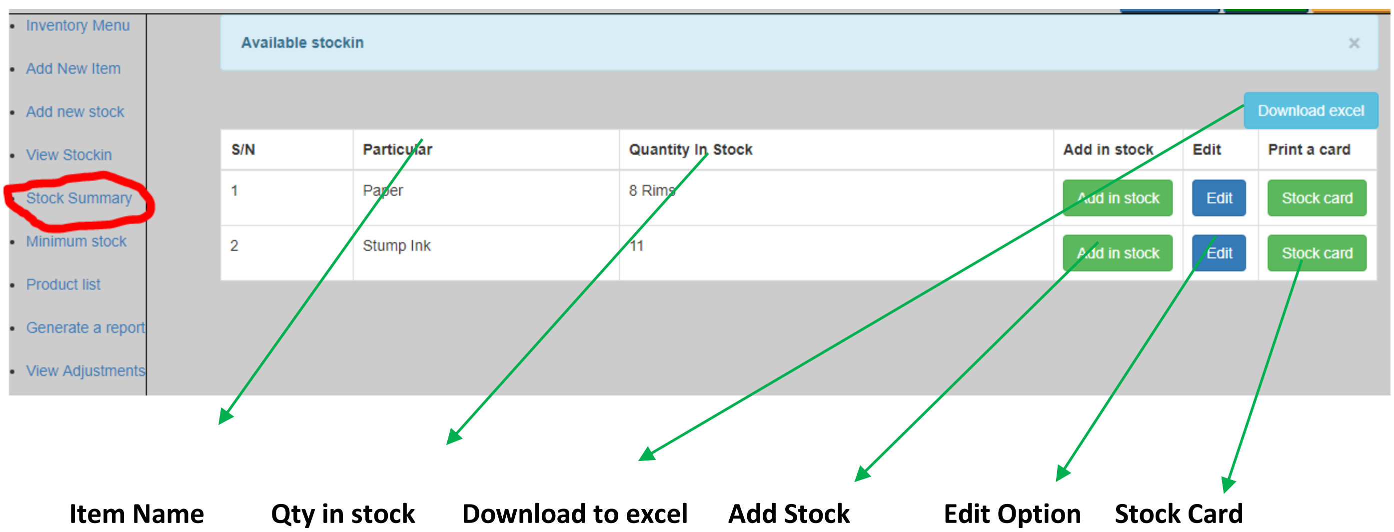
While logged in inventory,click on Manage stock from the left side menu, thereafter click on View Stock in from the new sidemenu that will appear .On click by default, recently stocked items will be displayed , however there is date filter to narrow the search (Search by date item was stocked), after a preferred search results will be displayed with options of exporting to excel or printing to any local printer



Date Filter **Generate Report(Submit Option)** **Download to excel**

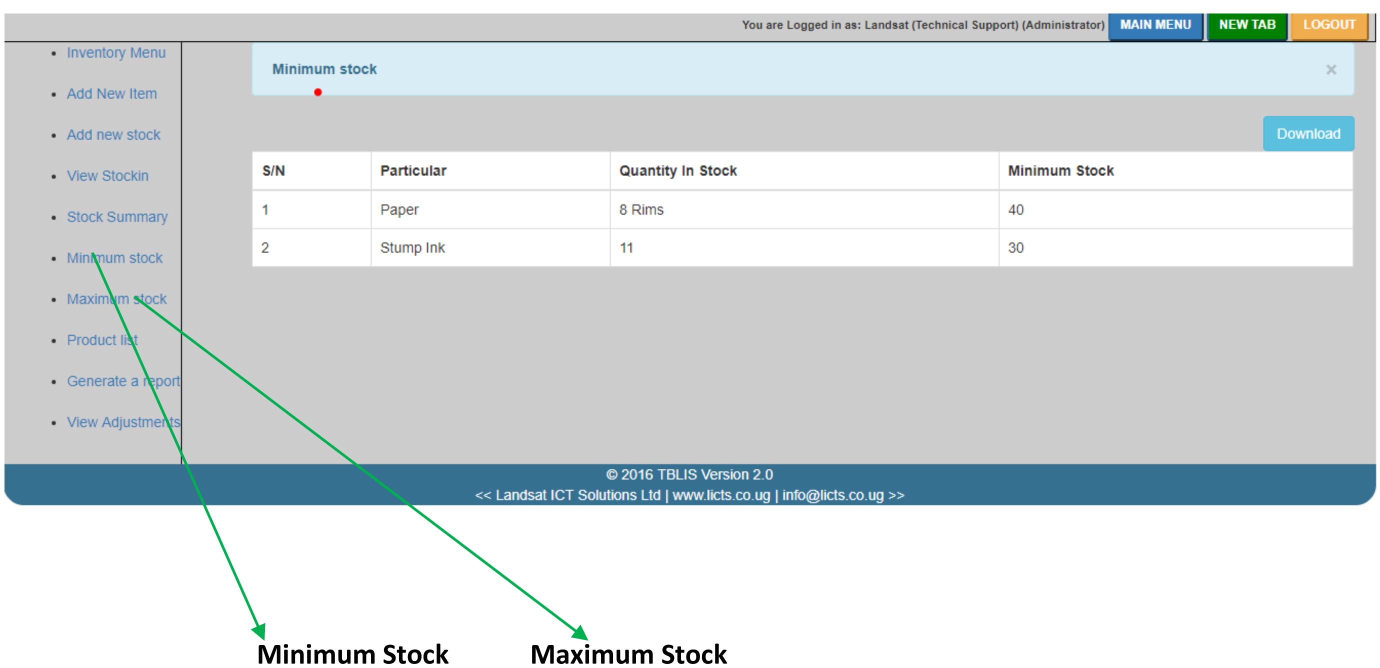
18.4 Viewing Stock Summary

While logged in inventory, click on Manage stock from the left side menu, thereafter click on Stock Summary from the new side menu that will appear .On click by the system will display a list of products stocked and their quantity at that very time. While viewing the summary list , you can also generate a stock card,Add new stock (for specific product),edit product details or download entire list to excel



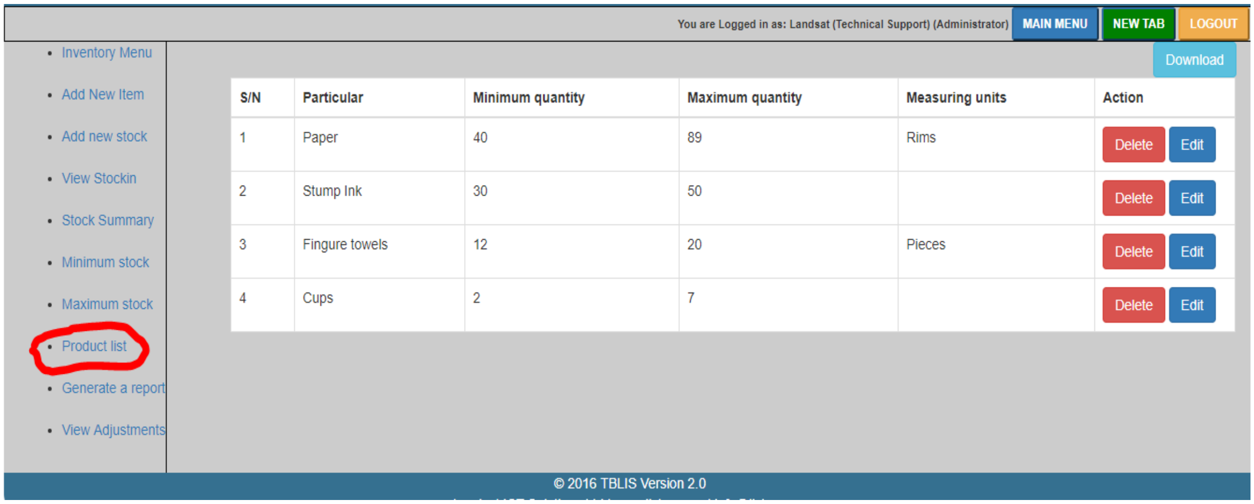
18.5 Maximum/Minimum Stock

To view maximum or minimum stock , while logged into manage stock, click on minimum stock (for items that running out of stock) or maximum stock for items that are over stocked beyond the ceiling.On clicking a list of such respective items will be displayed as shown below



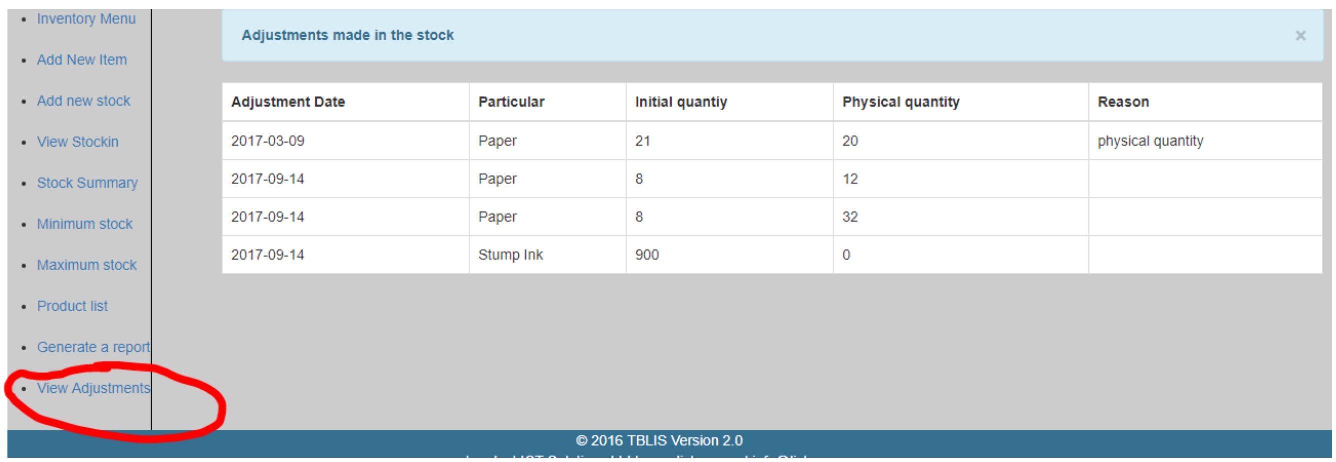
18.6 Product/Item List

While logged in inventory menu, click on manage stock on left side meny, then click on product list from the new side menu that appears.On cliking product list, a list of all items will be displayed with options of either deleting or editing an item details



18.7 View Stock Adjustments

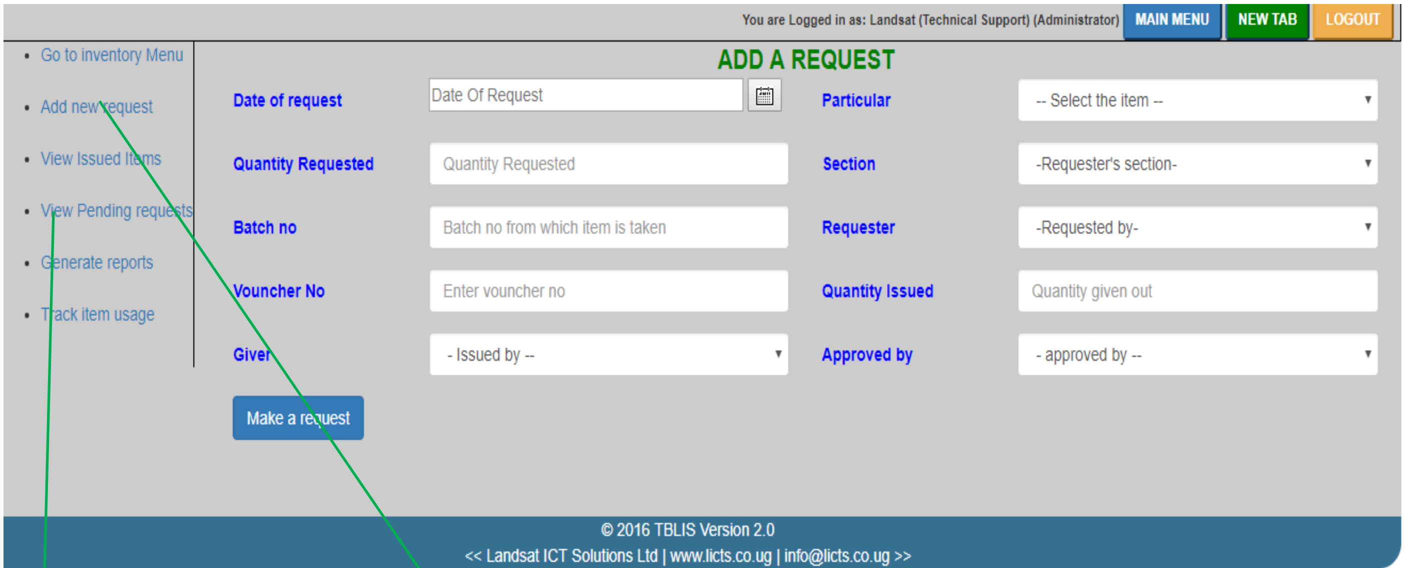
In circumstances where stock quantity was adjusted after physical quantity vs system quantity comparisons, all this trail is tracked and can be viewed by view adjustments tab.While logged in into manage stock sub menu, click on view adjustments and a list will be displayed



18.8 Manage Request

18.8.1 Add New Request

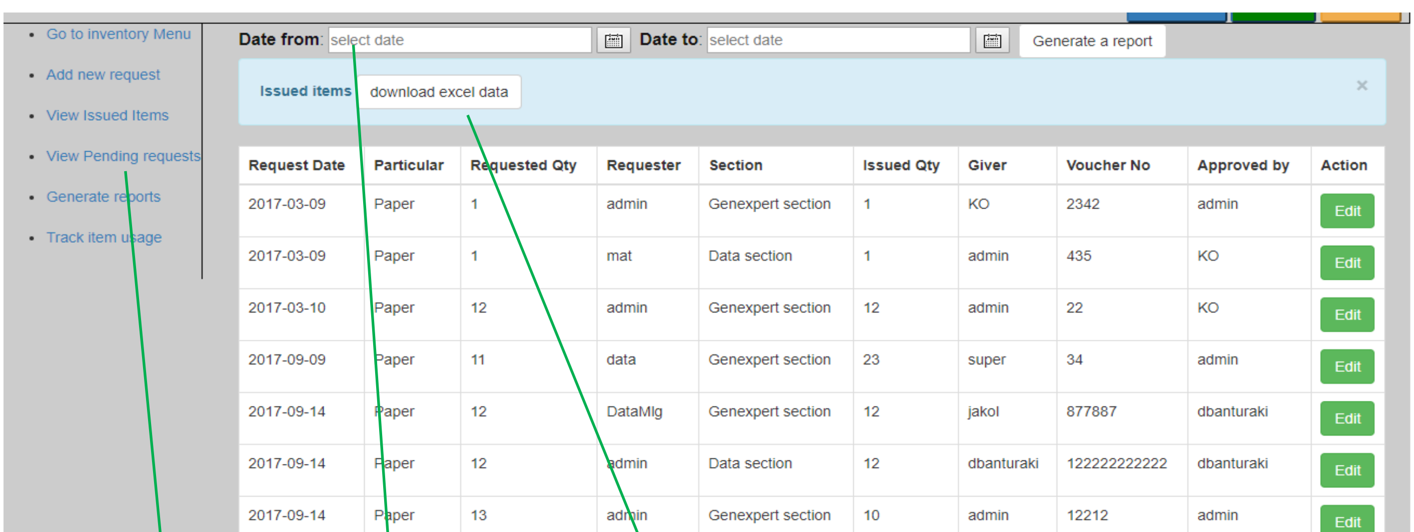
While logged in inventory, click on Manage Requests, then select Add New Request from the side menu that will appear. Fill in all the necessary information and there after click on make request to submit the filled in request. This request will then be visible under pending requests



View Pending Requests **Add New Request**

18.9 View Issued Items

To view a list of items which have been issued ,while logged in inventory, click on Manage Requests, then view issued items from side menu that appears,by default recently issued out items will appear.This can then filtered using the date filter on top the results can downloaded to excel for further analysis or directly printed



View Issued Items Date filter option Download Excel Option

19.0 Data Backup

TBLIS is set to automatically backup data at every 5:30pm.The backed up data is stored to Local Disk(D)>>TBLIS-Backup. The sytem backs up the entire database to TBLIS-Backup folder which can be copied and stored in external storage/on mails,etc.The TBLIS-Backup folder contains various backups for every single day, the data files are named with extension of backup date.