2009

Urban Surveillance Database Manual

CRC PLANTbiosecurity

GOVERNMENT OF WESTERN AUSTRALIA

Department of Agriculture and Food

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Contents

Introduction

The purpose of this manual is to help the user to understand how the application Urban Surveillance Database works on the PDA/Mobile phone using Visual CE on Windows Mobile. The application is a tool for data collection referring to some specific activities such as traps that belong to particular properties.

A flow diagram and the relationships table are provided at the end of this document to help understand how to go through the forms.

Getting Started

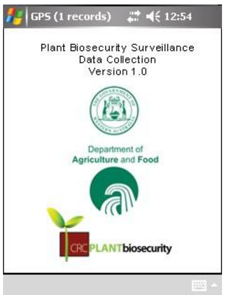
To get started the user has to deploy the application using the distribution files. For more information please refer to the documentation called "Urban Surveillance Database – Deployment".

Two distribution folders are provided:

1. One deploys the forms only into the device.
2. Second deploys the forms plus the database and synchronises all the data between the computer and the device.

How it works

Once everything is installed properly the user can start the application by clicking the Start windows menu -> Programs -> USDB. The following form should appear:



This form is a splash screen and is displayed for 3 seconds. It displays the name of the application as well as the DAFWA and CRC logo. A new window will then appear which will bring up the menu.

This menu is the form where everything begins. It is composed of six buttons:

- Properties
- Activities
- Inspections
- Contacts
- Specimens
- Settings

Each one of the buttons brings up a form that communicates to a table in the database (except for Settings). The application is made as you can go into any tables as you want or you can go through the forms up and down. For a better understanding have a look at the diagram, showing the relationships between tables (please refer to "Database – Relationships view").

The application considers that the user is going to a Property (top left of the form). This Property includes information such as name, address, longitude/latitude and so forth (for details refer to the diagram) and contains many Activities (i.e. traps that are placed on the property) and Contacts.

An Activity is considered as a trap that is located somewhere around or within the property. A trap has some vital information such as name, type, latitude, longitude a start and end date and so on (for details refer to the diagram).

A Contact is a person linked to a Property, either the owner or the current tenant. They are the people who can be contacted if needed. Further information such as name, phone number, email can then be recorded.

Each Activity (trap) will be followed and inspected. The person responsible for the inspection will record information such as the name of the inspector, the date of the inspection, wether there are non target insects, suspect EPP or not caught in the trap.

If some insects have been trapped it is relevant to record the type of Specimen found in the trap. The user can record the type of species, number of specimen and other useful information (please refer for details to the diagram).

On the relationships diagram the red rectangles represent the main tables (Property, Activity, Contact, Inspection and Specimen) whereas the green tables represent the lookup tables (Lookup_Property_Type, Lookup_Accuracy, Lookup_State, Lookup_Contact_Type, Lookup_Inspector, Lookup_Activity_Type, Lookup_Project).

This project can be designed for an Object Oriented implementation but the technology used does not provide any Object Oriented concept (O-O). However a class diagram is provided at the end of the document in case the relationships view is too complex to understand. Understanding a class diagram requires to know UML (Unified Modelling Language). UML is used to build O-O systems and as it is widely used in various domains it should then be understood by everyone so no explanation will be provided here.

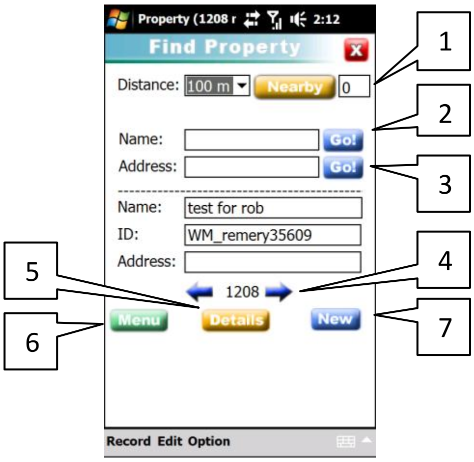
The forms

All the main tables (red squares on the relationships view) are composed into 3 forms each. Each table has a search, view and edit form. For instance, when the "Properties" button is selected, a form will appear allowing you to choose for a property either by ID, name or simply your nearby position if your “GPSProxy” application is on.

Property

As said above the Property table (and others) has three different types of forms: search, view and edit.

Finding a property

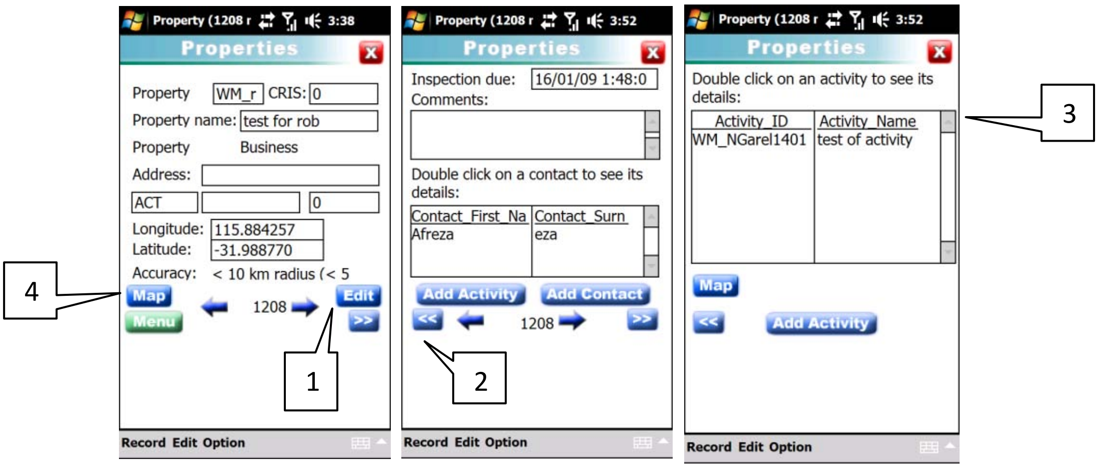


The top part of the form (above the horizontal line) is for seeking a property whereas the bottom part (below the horizontal line) is the result of your research.

It is possible to either search a property either by name, address or by using the GPS position of the device.

1. To look for a property nearby your position, select the range of distance in the combo list. Five different range of distance are available: 50m, 100m, 200m, 1km or 2km. Select the appropriate distance and click on the nearby button. The actual lat/long should appear on the screen as well as a number counting down on the right hand side of the nearby button. This number is an indicator showing the number of properties left to filter. It is necessary to wait until it reaches 0 to see the result.
2. To look for a property by name, enter the name of the property in the proper field shown above and click on the Go button Go!. The field is referring to the “Property_Name” column in the “Property” table.
3. To look for a property by address, enter the address in the proper field shown above and click on the Go button Go!. The field is referring to the “Address” column of the “Property” table.
4. To navigate between the properties filtered click on the blue arrows.
5. Once the property is chosen click on the details button Details to see all the details of property.
6. To return to the main menu click on the Menu button Menu.
7. To create a new property click on the New button New. A new window will come up showing the Edit form.

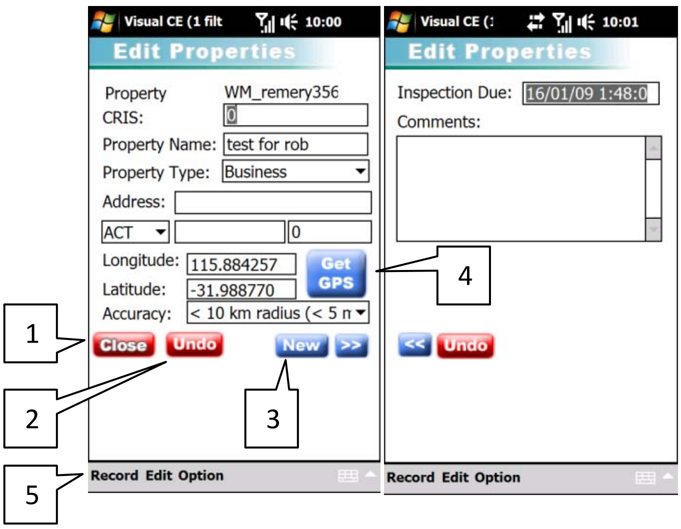
Viewing a property



After clicking on the Details button the “view” form should come up as the one shown above. In this form the user can only see the information that belongs to the property.

1. **The information shown on this form cannot be edited. If the user wishes to edit the information shown, users must select the blue Edit button (see Edit a property topic for more information).**
2. As the form contains a lot of information, tabs are created. They can be seen by pressing the bottom right button . To go back to the previous tab use the button that is located on the bottom left side.
3. From the Property form, information such as the list of contacts can be seen as well as the list of activities. The specific details of a contact/activity can be seen by double clicking on a contact/activity in the appropriate list.
4. The map button opens Google maps and will put a placemark on the map depending on the latitude/longitude of your property.

Editing a Property

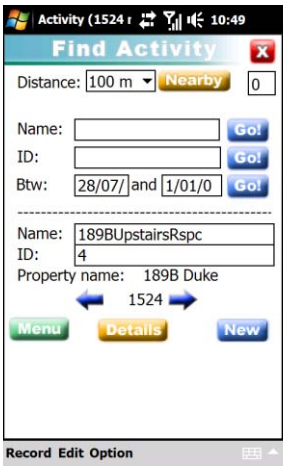


This form allows you to either edit information or remove a property.

1. The close button saves any changes made and brings the user back to the viewing form.
2. The undo button will remove any changes done by mistake. However according to Syware support, the undo function does not work properly in some cases.
3. The New button allows creating a complete new property with empty fields. A new Property Id will be generated automatically (please refer to “Ids” topic for more information).
4. The Get GPS button gets the current latitude and longitude of the device and assigns them to appropriate field. If the position is obtained from the GPS receiver of the device the accuracy filed would be automatically set to “< 50 m”.
5. The Property record can also be removed by going to the menu at the bottom of the form: Record-Delete. If some Activities, inspections and specimens are linked to the property that you wish to remove, all the activities, inspections and specimens linked to it will be removed also. Indeed you cannot have some activities, inspections and specimens linked to a property that does not exist.

Activity

Finding an activity



The process for seeking an activity is the same process as for seeking a property. An activity can be found nearby the device position (using the nearby button) or else by name or ID. Furthermore it is possible to seek an activity between two dates. The dates are the starting dates of the activity. As on the property form, the top part is where the user searches an activity and the bottom part is the result of it.

The details button will bring the “Activity” viewing form of the activity searched previously (see viewing an activity for more details).

On this form it is also possible to create a new activity. To add an activity, please read the “Ids” topic.

Viewing an activity

This form shows all the details of the activity including the list of inspections as well as the picture of your activity if your device has a built-in camera. A couple of new features are added in the activity form: Printing and Property.

1. The print button 

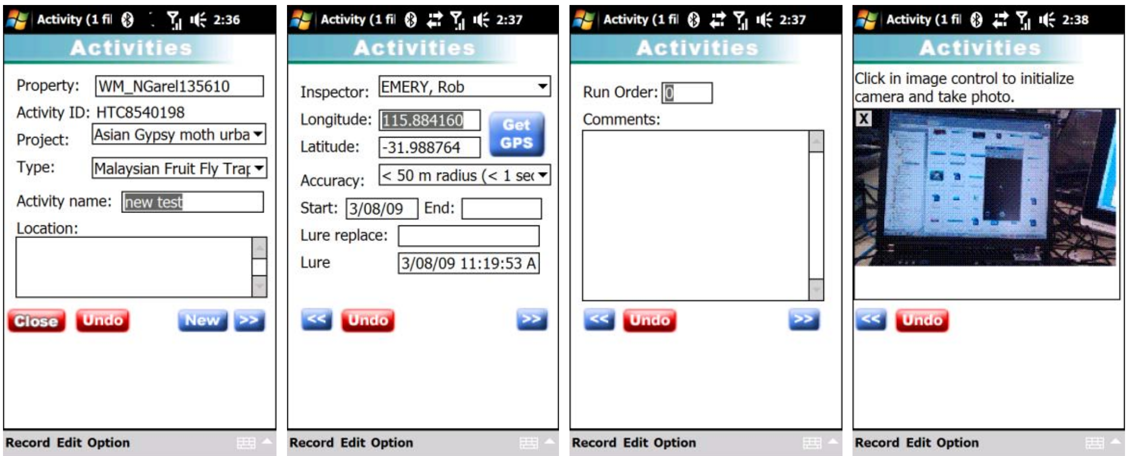
allows you to print a label of the activity as well as the barcode on two different types of printer: the AP1300 form Able Systems and the RW220 from Zebra Corporation. The barcode represents the Activity ID. The connection between the printer and the device is made in Bluetooth on COM5. To select which printer you would like to print return to the main menu and click on Settings 

– Printer and pick the desired printer.
2. The user can inspect what property the inspection is part of by clicking on the Property button 

.
3. To add an Inspection of the current activity click on Add Inspection 

. The "Activity_ID" will be linked to the new inspection (see "Ids" topic for more details).

Editing an activity



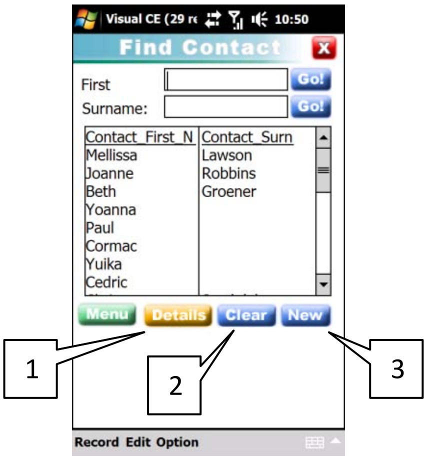
The edit mode of this form looks similar to the property editing form. If the user wishes to create a new activity coming from this property, click on new. The "Property_ID" will be kept for the new activity (see "Ids" topic for more details). Once the information has been changed click on the close button 

to save the data and go back to the viewing form.

The activity record can also be removed by going to the menu at the bottom of the form: Record-Delete. If some inspections are linked to the activity that you wish to remove, all the inspections and specimens linked to it will be removed as well. Indeed you cannot have some inspections and specimens linked to an activity that does not exist.

Contact

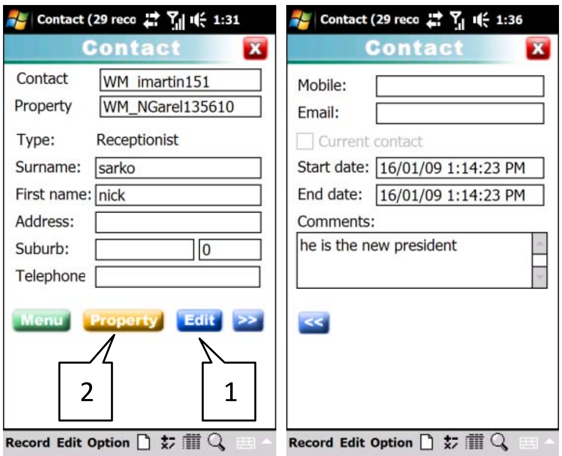
Finding a contact



This form displays a list of all the contacts stored in the database. These contacts are linked to a particular property.

1. To see the details of a contact, users must select a contact and click on Details. It is possible to look for a contact by giving a first name or surname. The form will update the list according to the search made.
2. To clear the search and get all the list of contacts back press the Clear button Clear .
3. To add a new contact into the database click on the new button New . The edit form will come up and ask the user to complete the fields needed. The user has to make sure that Property ID is correctly entered (Please refer to the “Ids” topic).

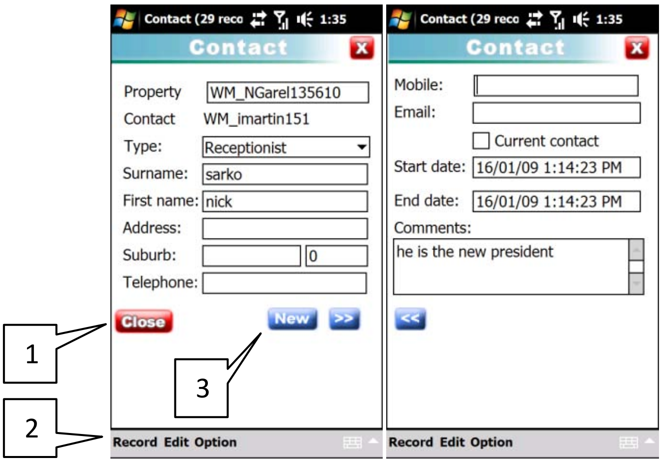
Viewing a contact



The viewing form will show the details of the contact selected previously, in the form presented above.

1. The contact can be edited by pressing the Edit button . It will bring up the edit form of the contact.
2. It is possible to check the details of property linked to the contact by pressing the Property button .

Editing a contact

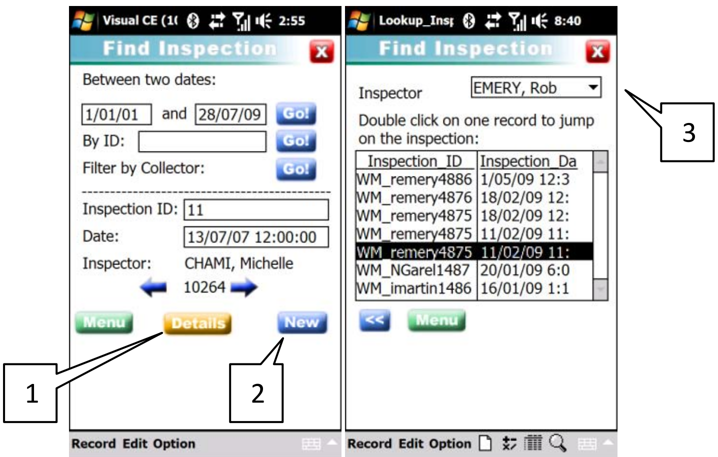


This form allows the user to change the data of the current contact.

1. When changes have been made, click on close  to save and return to the viewing mode of the form.
2. To delete the current contact, go to "**Record-Delete"** of the menu.
3. It is also possible to add a new contact by pressing the new button . A new contact will be automatically linked the property ID of the previous contact the user was on.

Inspection

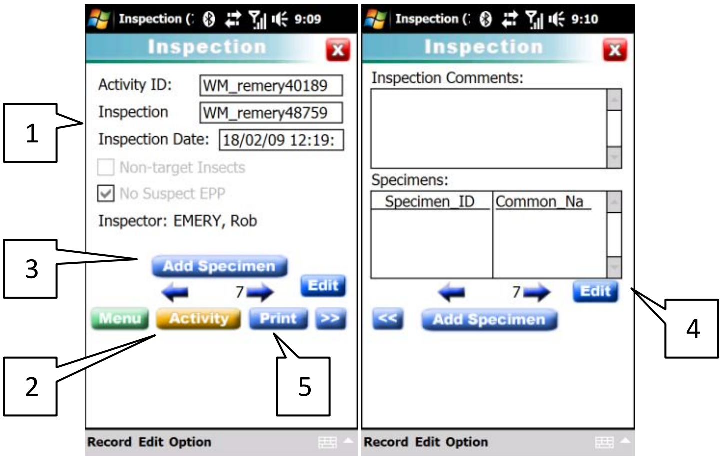
Finding an inspection



As can be seen the top half the form allows the user to make a quick search between two dates, by ID or by a particular inspector.

1. Click on the Details button to go to the viewing form of the desired inspection.
2. Click on new to bring the edit form to create a complete new inspection form. It is essential to compute the activity ID field (please refer to the "IDs" topic).
3. To find out the list of inspections done by a particular inspector, click on the Go button on the right hand side of "Filter by Collector". A form will come up with a drop down list of inspector. Select the name of the inspector in the drop down list and the list of inspection will be displayed on the grid control. Double click on the inspection to see the details.

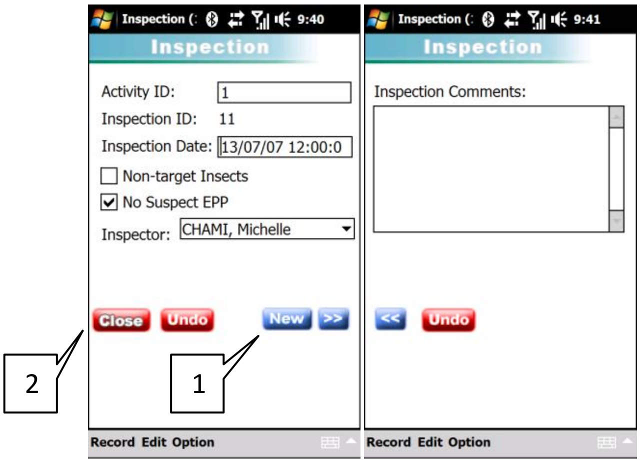
Viewing an inspection



From the "viewing" form users are able to:

1. See details of the inspection.
2. Check what activity it is referring to.
3. Add a specimen to the inspection.
4. Edit the inspection.
5. Print a label containing the inspector name, date of inspection and a barcode that represents the ID. To print a barcode, make sure that printer is selected in Settings  -Printer of the main menu form. Select the appropriate button to perform one of the actions mentioned above.

Editing an Inspection

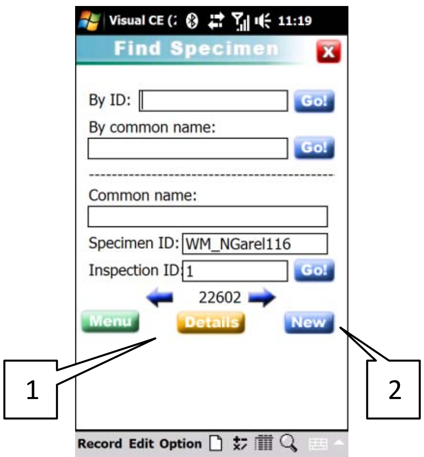


The edit form allows changes to the current data as well as removing and creating a record. To remove a record, go to menu Record-Delete. If some specimen records are linked the current inspection and that the user decides to remove it, all the specimens linked to it will be removed too. **Remember** that it is not possible to have some specimens linked to an inspection that does not exist.

1. To create a new inspection click on new New. A new inspection will be created keeping the activity ID of the previous inspection that was edited.
2. Once the data is changed click on the close button Close to save and return to the viewing form.

Specimen

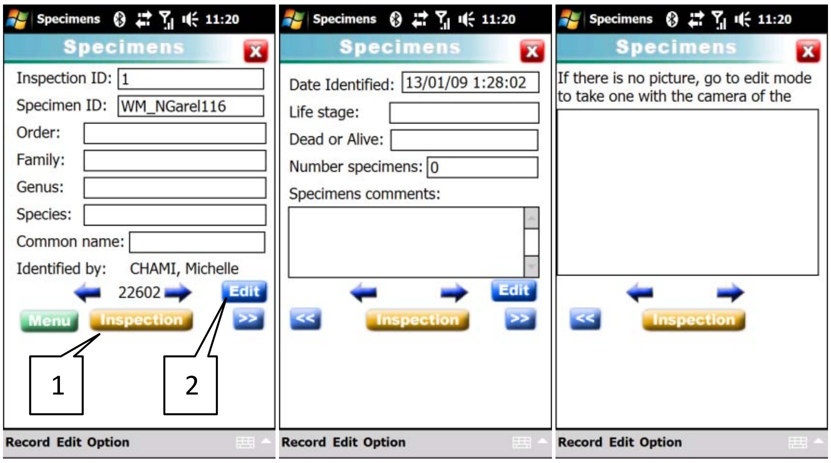
Finding a specimen



To find a particular specimen you can look for a specific ID or a common name. The bottom part of the form displays the result of the research.

1. The user can see the details of the specimen by clicking on the details button Details.
2. The new button New allows creating a complete new specimen.

Viewing a specimen

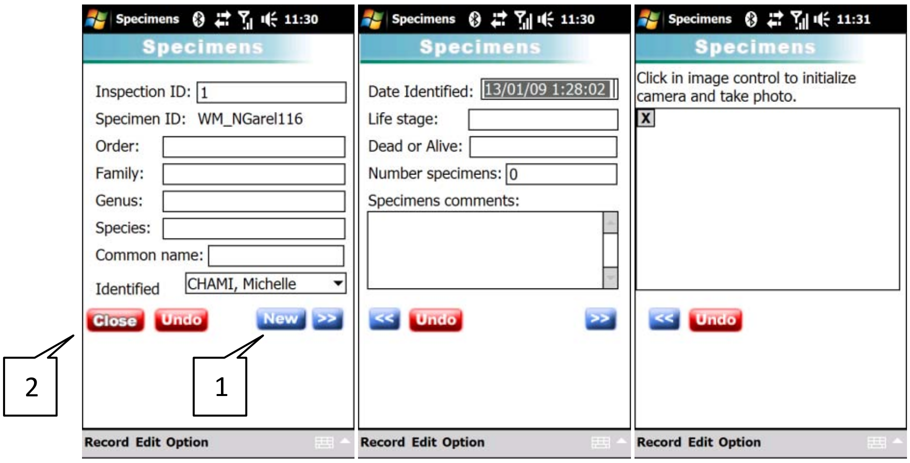


After clicking on the Details button the view form should come up as the one shown above. In this form users can only see the information that belongs to the Specimen.

From the Specimen form users can see the Inspection referred to this specimen as well editing it.

1. To see the inspection linked to the specimen click on the Inspection button .
2. To edit the current specimen click on the Edit button .

Editing a specimen



The edit form allows changes the current data as well as removing and creating a record. To remove a record, go to menu Record-Delete.

1. To create a new specimen, click on new . A new specimen will be created keeping the inspection ID of the previous specimen that was edited.
2. Once the data is changed click on the close button to save and going back to the viewing form.

IDs

The Properties, Activities, Contacts, Inspections and Specimens are all linked by Ids. Those Ids maintained their relationships and are vital to the database.

For instance if a Property is created, an automatic ID is generated. The ID is composed of the device name and a unique number (e.g: youDeviceName01215) which will appear in the “Property_ID” field of the Property form. If the user chooses to link an activity to this property, this “Property_ID” must appear on the Property form on the Activity form. This rule must be done for the

- Property
- Activity
- Contacts
- Inspections
- Specimens

Therefore the “Property_ID” must appear on the contact form, the “Activity_ID” must appear on the Inspection form and the “Inspection_ID” must appear on the Specimen form.

If the user desires to create an activity coming from a particular property, there are two ways which users can select from:

1. The Property viewing form by clicking on the add Activity button 

.
2. The Find Activity form by clicking on the New button 

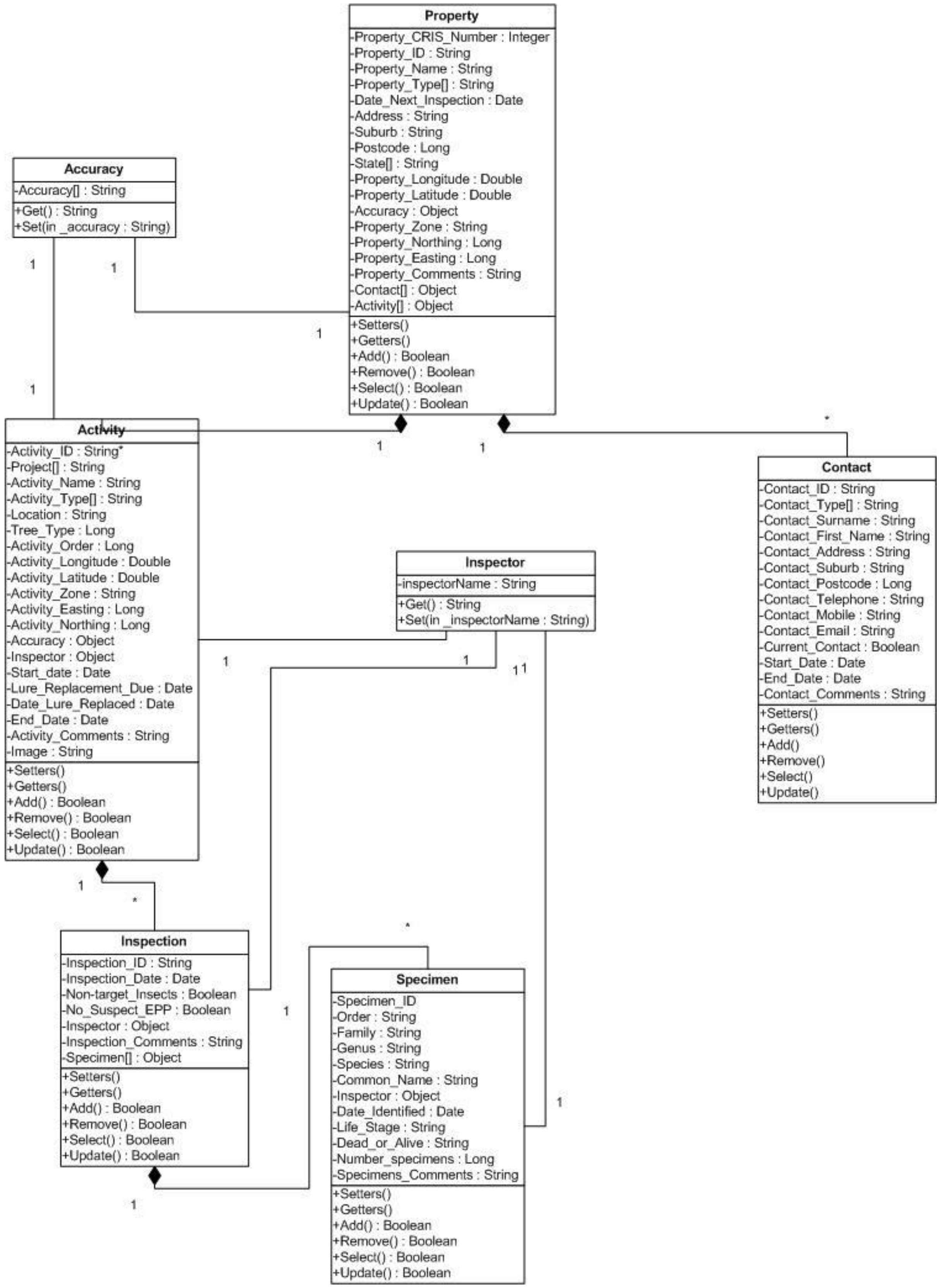
.

By choosing the first option, the “Property_ID” is brought to the Activity form and the link between the Property and the Activity is completed automatically. However the second option does not link the activity to the property, therefore it must be done manually by the user. The Ids are required and must be correct otherwise it would result in synchronisation error with the database.

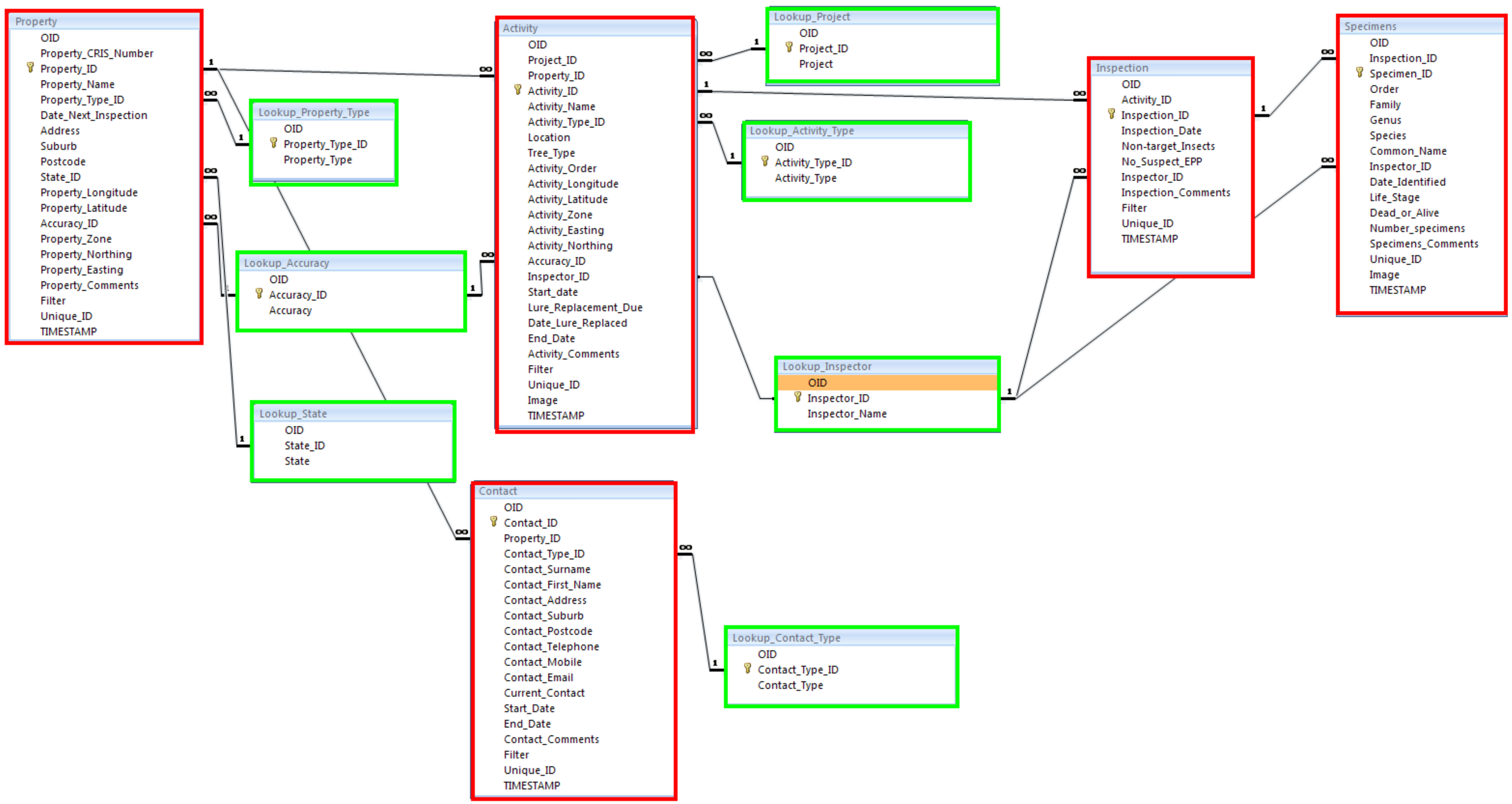
Tips: if you add an activity and you do not know the “Property_ID”, enter anything in the “Property_ID” field and return to the desire property. Copy the “Property_ID” (select it and go to EDIT-COPY) and return to the activity and paste it in the “Property_ID” field (EDIT-PASTE).

This tip works for all the forms.

UML – Class diagram



Database – Relationships view



Flow diagram