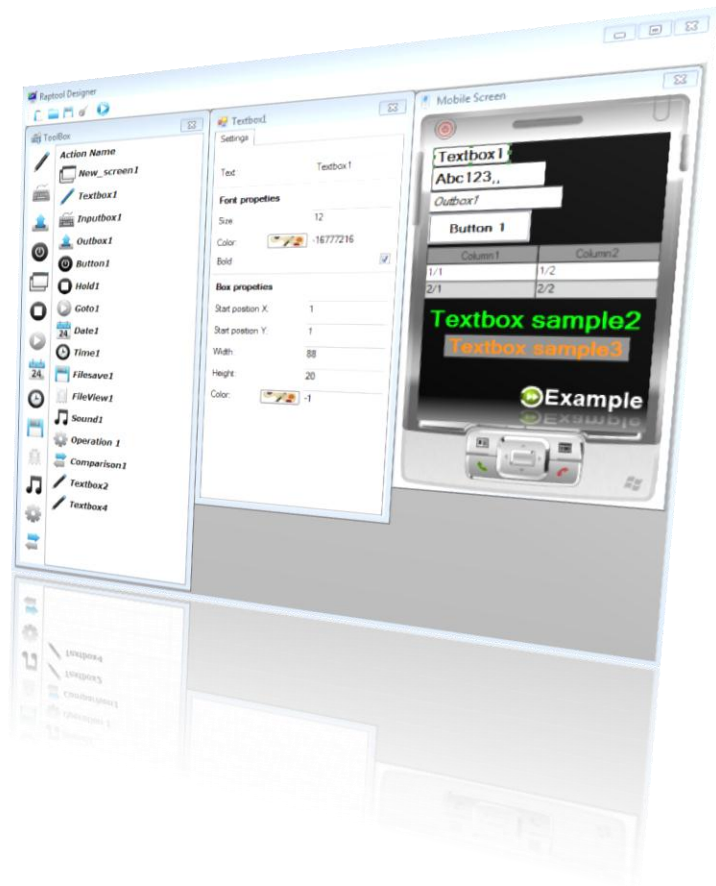


Raptool

Designer

1.0.0.4



Raptool NET Designer – User's guide

For version 1.0.0.4

Later versions may have changes not reflected in this user's guide.

This user's guide is not finalized and may contain errors.

E-mail support is available only upon proof of a valid Maintenance agreement through your Raptool partner.

For terms and conditions, see license agreement.

ALL RIGHTS RESERVED

Raptool reserves the right to make modifications and improvements without prior notification. Product names mentioned are for identification purposes and may be registered trademarks of their respective companies.

All content in the document are Copyright Raptool and may not be copied, quoted or otherwise reproduced without written consent from Raptool.

© 2012 Raptool



Contents

1. General

- 1.1 Scope
- 1.2 About the Raptool software suite
- 1.3 Minimum requirements
- 1.4 Downloading and installing the software
- 1.5 Licensing
- 1.6 Upgrade and support agreement

2. The designer

- 2.1 Overview
- 2.2 The Top Menu
- 2.3 Application file types
- 2.4 Simulator
- 2.5 The Mobile Screen
- 2.6 Changing the background image
- 2.7 What are Actions?
 - 2.7.1 Visual Actions & Multiple screens
 - 2.7.2 Sequence
 - 2.7.3 Renaming the actions
 - 2.7.4 Action Value

3 The Actions and their settings

- 3.1 Visual Actions**
 - 3.1.1 Visual settings
 - 3.1.2 Text
 - 3.1.3 Button
 - 3.1.4 Input
 - 3.1.5 Output
 - 3.1.6 Table
 - 3.1.7 New Screen
 - 3.1.8 Sound

3.2 Non visual actions

- 3.2.1 Hold
- 3.2.2 Go to
- 3.2.3 Comparison
- 3.2.4 Save
- 3.2.5 Search
- 3.2.6 Time
- 3.2.7 Operation
- 3.2.8 File Operation
- 3.2.9 Sub

4 Global

- 4.1 Files
- 4.2 The files tab
- 4.3 Export
- 4.4 Import
- 4.5 Subs
 - 4.5.1 Creating a Sub
- 4.6 The Subs and their settings**
 - 4.6.1 Keypress
 - 4.6.2 On Network Detection
 - 4.6.3 Synchronization
- 4.7 Online Server Tab

5 Making an application

- 5.1 Your first application
- 5.2 How the application works

6 Trouble shooting

- 6.1 Avoiding errors

1. General

1.1 Scope

In this user's guide you will find the functionality of the Raptool Designer and basics of designing an Application for mobile devices. For a deeper insight in to Application development we recommend one of the Raptool education packages. Contact your Raptool partner for more information.

1.2 About the Raptool software suite.

The Raptool software suite is a **Rapid Application Design suite** for mobile devices. It allows anyone with a basic technical knowledge to make software for mobile devices. This users guide covers the Raptool Designer.

- **Raptool Designer.** The PC-based designer allows you to make an Application for mobile devices in minutes through an easy click-to-design interface.
- The **Raptool Communicator** allows you to send your application to your mobile device and also send and receive database-files. These files can be imported and exported to other systems like ERP, POS and Warehouse management etc.
- The **Raptool Client** is the software that is installed in your mobile device. It reads and interprets the files you make in the Designer. Currently clients are available for Windows Mobile and Windows CE.

The Raptool software suite is available in either a USB or NET version.

- The **USB** versions allow only communication through docking the mobile devices to a PC through USB using Microsoft Active Sync.
- The **NET** version allows communication through any type of network connection: Ethernet, Wifi, 3G etc.



1.3 Minimum Requirements

To install the Raptool Designer the minimum requirements are:

- A PC with minimum 1 GB RAM Memory, running one of the following operating systems:
 - MS Windows XP
 - MS Windows Vista
 - MS Windows 7
- The installation requires at least 1 GB of available hard disk space.
- Minimum 800x600 display resolution, 1024x768 is recommended.

1.4 Downloading and installing the software

Before downloading and installing any Raptool software you are obligated to read the Raptool EULA (End User License Agreement). By downloading, installing or using any Raptool software you are bound by and agree to follow this agreement.

Download and install the 32-bit or 64-bit version depending on your PC operating system and processor type. The installation will start automatically when you click on the install file: Raptool Designer XXXXX.EXE . Follow the instructions on the screen. The installation process will install: Raptool Designer and SQL CE Compact.

1.5 Licensing

When you start the Designer for the first time it will be locked. Push the button that looks like a **Lock** in the top menu and the License Manager will start.



To activate the license, copy the **Node ID** and send to your reseller (where you purchased the software). You will then get a license file (xxxx.lic) by e-mail. Save the file to your computers desktop. Start your Raptool Designer, click on the Lock, click on **“import license file”** and browse to the license file.

The License Manager will show: “License is valid”. Close the license manager and restart the program. You are now ready to go!

Important!





The license is locked to the computer that you installed it on and cannot be moved to another computer. This can become a problem if your PC breaks down. However, if you register your installation you are allowed to make a limited number of PC-changes and get a new license.

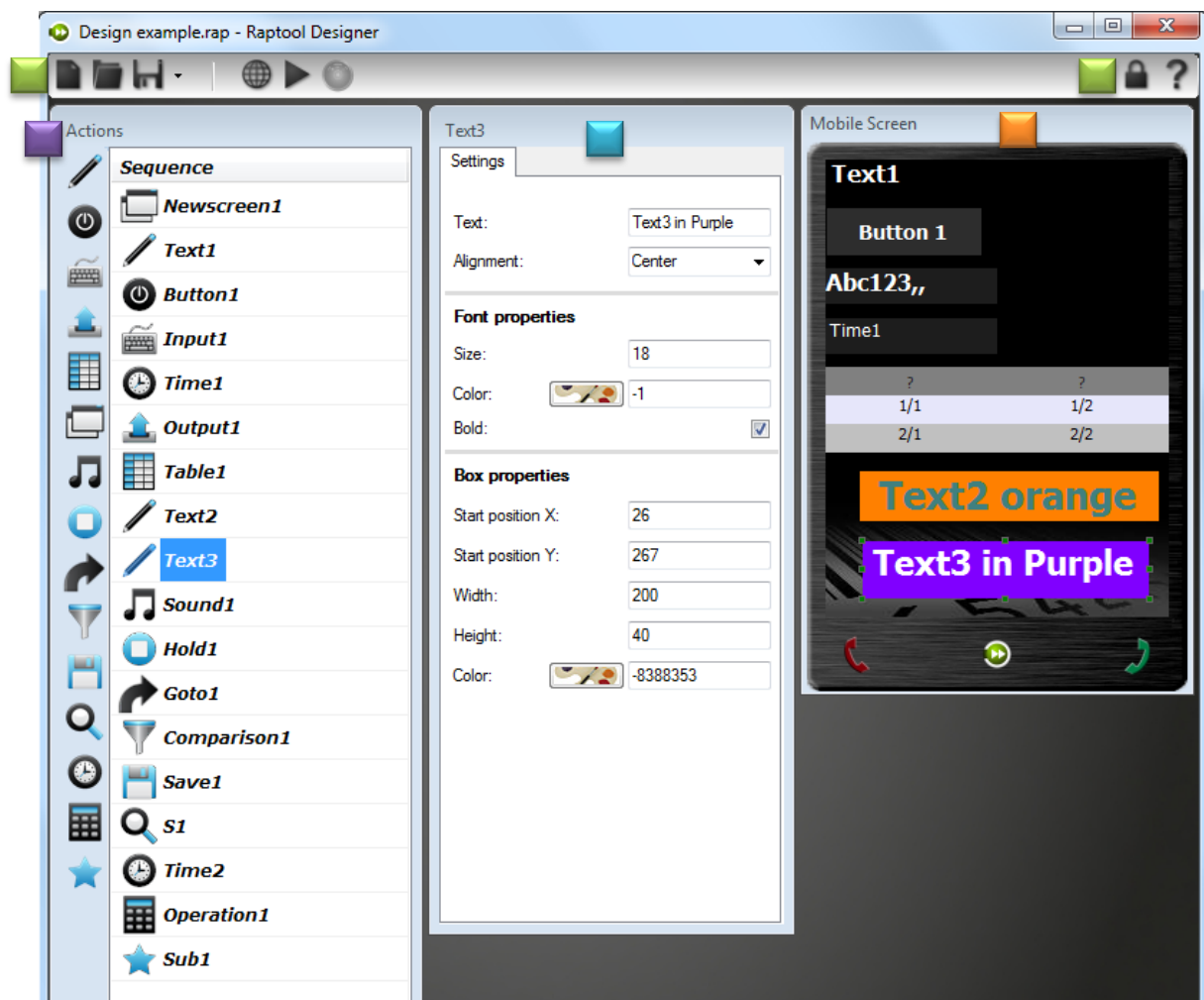


2. The Designer

2.1 Overview


In The Raptool designer you design mobile applications without programming. Your application is built of “Actions” (2.7) that are put in the “Sequence” list. Actions give your applications the functions you want it to have. These actions are performed in sequence (2.7.2) starting from the top. Below is a screenshot of the Designer with an application. The main areas are:

-  **Top menu.** The buttons on the left side: File controls (New, Open, Save), Global settings, Simulator, NET Communicator Connection. The buttons on the right side: License activation, About.
-  **Actions and Sequence.** This is where you build your application by adding Actions (the vertical column of buttons to the right) to your Sequence = your application.
-  **Settings.** The settings give your Actions properties. Change: Text, font size, color etc.
-  **Mobile Screen.** Preview of how your design will look in the mobile device. Click on and drag visual Actions to move them around.



2.2 The Top Menu



 **The current application's file name.** In the top you can see the name of the file you are working on. If it says "New" it means you are working on a new project that has not yet been saved.

The Buttons in the top menu.

Listed from left to right:

File controls:

- **New.** Creates a new, blank application.
- **Open.** Opens an existing application. You can find examples in the Raptool install folder. Allowed file types are: Raptool single Application File: .RAP and Raptool Project Files: .RPF
- **Save.** Pushing the Disc icon makes a quick save, or if you have a new application that has not been saved before, a Save as. Pushing the down arrow opens a list with: Save and Save as. Save as allows you to choose a name for your Raptool Application file and save it. Save just saves your project as it is to the file that is selected

Application Controls:

- **Global.** Opens the Global settings. See: **Global Settings** for more information.
- **Simulator.** Starts the simulator. See: **Simulator** for more information.
- **NET Communicator connection.** Green if the connection to the NET Communicator is OK. Red if a connection has not been made to the Communicator. Gray if a Server address has not been entered. See: **Online Server Tab** for more information.

General:

- **License manager.** See: **License (1.5)** for more information.
- **About.** Shows your designer version number.

2.3 Application file types

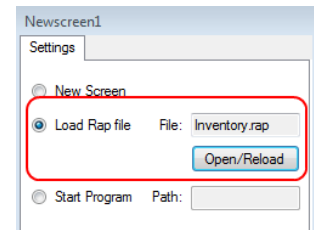
Raptool Application file .RAP

A single Raptool application file.

Raptool Project File .RPF

In the action **New Screen (3.1.7)**, when you select “Load external .RAP file” you automatically convert your **application** to a **project**. A project file consists of multiple .RAP files that are packaged inside the .RPF file, similar to a Zip file.

To make changes to the individual .RAP files: Open the original .RAP file in the designer. Make the changes. Load the .RPF file, go to the New Screen that loads the .RAP file you have made changes to. Push the Open/Reload Button. Browse to your .RAP file, Push OK. Now your changes are also in your .RPF file.



2.4 Simulator

In the simulator you can test how your application will work in the mobile device. Load any of the sample files (ask your reseller to send the sample package). Click on the Play button in the top menu. A new window will pop up: “Raptool Simulator”. Now you can use your PC to test run your Application. To push a button in your application, use your mouse and click on the button. To simulate input, use your keyboard and enter the numbers manually or connect a barcode scanner in keyboard emulation mode. When there are no more actions to perform in the sequence the simulator exits, like it would in a mobile device.



2.5 The Mobile Screen

This is a preview of how the visual actions in your application will look. You can move the Actions around by clicking to highlight. Drag them to the position you want them to have. You can also change size by hovering over the Green Corner Markers until your mouse arrow turns into two arrows. You can now expand the size of the box. Always confirm all changes by selecting another action in your Action Sequence.

The mobile screen is 320 high and 240 wide. If your mobile device has a higher resolution (640x480) the Client will automatically resize your Application to take full advantage of the higher resolution.




2.6 Changing the background image



































In your mobile screen you see the standard background image with a fading barcode. This background image can be changed. Right click on the desktop shortcut to the Raptool Designer and select “open search path”. Open the “image” folder. By replacing the “background.jpg” with another .jpg file with exactly the same name you change the background image in the mobile screen. The standard size is 240x320. Read the user’s manual for the Raptool Communicator on how to send the same image to your mobile devices.

2.7 What are Actions?

Actions are the building blocks for you applications. They give your application the functions you want it to have. The available actions are listed in the vertical column to the right of the Sequence. By clicking on the icon for an Action you add them to your application, or you **Sequence**. By changing the settings you make that action do what you want.

Action Groups:

-  **Visual:** Actions that show something that can be seen on the screen or heard (Sound).
-  **Sequence change:** Jumps from one place in the Action List to another or stops the sequence.
-  **Action Value:** Actions that create a variable value or manipulates a value from other Actions.

		Text. Displays a text.
		Button. A touch screen button. Makes a jump to another part of the sequence.
  		Input. A box where the user enters data through a keyboard, barcode reader, RFID Reader...
 		Output. Shows the current value in another Action.
		Table. Shows a table on the screen. The table can show the data in a database.
		New Screen. Divides the application in to multiple screens.
		Sound. Play a sound: Warning, Good read, Error etc.
		Hold. Stops the sequence and waits. Used in button menus etc.
		Go to. Jumps to another part of the sequence.
 		Comparison. Compare two values. If true, go to one place, if false, go to another.
		Save. Select what Values to save to a database.
 		Search. Select a file or database and search for data in it.
		Clock. Get the current time or date.
		Operation. Take a value. Add, subtract, divide... to another value.
		Sub. Activates/Deactivates Sub Actions. Sub Actions can have many different functions.

2.7.1 Visual Actions & Screens

Visual Actions.

All visual Actions are Actions that show something on the mobile device screen. It can be a Text, Output, Button or Table. They have visual settings like color, font size etc. Placing one visual component over another can cause problems. Make sure your visual actions do not overlap.

Screens.

Your application can consist of many Screens with different functions. You can for example create a main menu with buttons that allows the user to select different work task screens: Inventory, Ordering, Stock picking etc. The screens are divided by New Screen. Read more under Actions: New Screen (3.1.7).

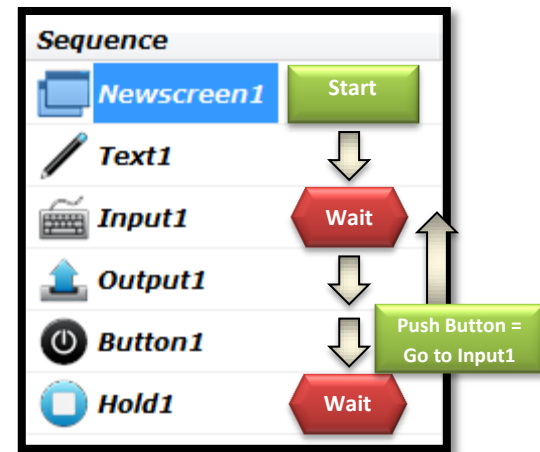
2.7.2 Sequence

Raptool works in a sequence.

- **The Sequence** or the **Sequence List** is the list of Actions you have added to your Application.
- **The Position** is the action the application is executing at the moment. Illustrated to the right.

Raptool performs the first action in your Sequence and moves to the next row and performs that action.

Visual components are drawn before the Sequence begins, so visually you can place them anywhere in the Sequence, as long as they belong to the same Screen. When there are no more actions to perform the Application exits.



Different Actions and how they work sequentially:

Sequential: All actions except Text and Button.

They perform their tasks in sequence.

Not sequential: Text and Buttons.

Can be placed anywhere within the same Screen.

Sequence stop: Input and Hold.

Hold simply stops the sequence. Hold is used together with Buttons or other Actions that jump in the sequence. Input stops the sequence and waits for the user to enter a value and press enter.

Sequence Jump: Goto, Button, Compare, Search and some Subs.

Jump to another part of the sequence.

Sub Sequential: Buttons and some Subs.

When activated they can perform their task regardless of where in the sequence you application is, as long as it is in the same screen.

2.7.3 Renaming the actions

The name of the action can be changed from: "Text1" to another name: "Inventory" to help you keep track of your Actions. In the sequence list, click on the action you want to change name for so that it is selected (blue), click on the text, write the new name for that action, push enter. **The names can only contain letters, numbers and some other characters like " _ "**. Two actions cannot have the same name.

When you rename an action all actions that use it must be updated. For example: Goto1 is set to jumps to Text3, you rename Text3 to "Inventory". Goto1, will no longer point to the text action. You need to change the settings for Goto1 to jump to "Inventory".

2.7.4 Action Value

Some Actions can generate a Value (variable) that can be used by other Actions. The name of the Value is the same as the Action name. It could be an Input where the name of the Action is "Input1". The Value will be whatever the user enters in "Input1" when the application is running.

For example: Create "Input1" "Output1" and "Goto1". Select "Input1" in "Output1". When simulated the Application waits for the user to enter a value. When the user writes something and pushes enter this value is ready to be used by other actions. In this case Output1 shows the value of Input1.

A value can be manipulated, used to control the sequence, used as a search phrase or get saved to a file etc.:

- **Output:** Shows the Value in the selected Action.
- **Save:** Saves the Value from one or many Actions to a file or database.
- **Clock:** Generates the current time and date as a Value that other actions can use.
- **Operation:** Takes the Value in 1 or 2 actions and manipulates them. Example: Take Value1. Add, subtract, divide or multiply with Value2
- **Search:** Make a search in a file or database. The Search result can create multiple Values (S1, S2, S3).
- **Comparison:** Jumps to different parts of your application depending on the value of the selected actions.
- ...

3 The Actions and their settings:

Actions are the building blocks for your applications. They give your application the functions you want it to have. The available actions are listed in the vertical column to the right of the Sequence. By clicking on the icon for an Action you add them to your application, or you **Sequence**.

Adding an action

Hover over an Action in the Action List to show the name of that Action. Click on an Action to add it to your application. It will be added below the Action you have highlighted in your Sequence.

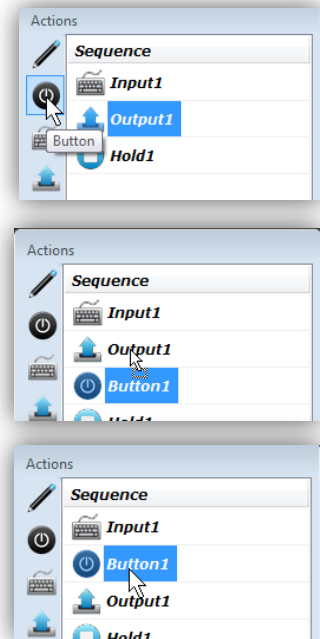
Changing position of an action

You can change the position of an Action by highlighting it, clicking until you get a grey square below your mouse arrow, then dragging the Action up and down in your Action List

Action Settings

The settings give your Actions their look and functionality. To change the settings select the action you want to edit by clicking on it in your Sequence or on the mobile screen. The Action in your sequence that is selected is highlighted in blue and the settings for that action can now be edited.

In the following section is a list of the available actions and their settings.



3.1 Visual Actions

Visual actions show something on the screen.

3.1.1 Visual settings

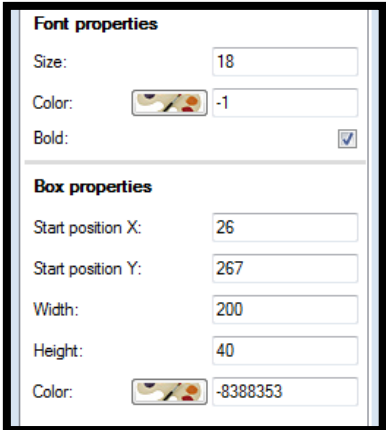
These settings are the same for: Text, Button, Input and Output.

Font properties:

Size: Changes the size of the font. 12 is standard a larger number makes the font size larger.

Color: By pushing the color pallet Icon you open the color selector. Here you can choose any color you want for the text. You can also copy (CTRL + C) the color number and paste (CTRL + V) in other color fields. The exact color in the mobile device may be different than the color you see in the designer depending on the device.

Bold: Makes the text bold. Uncheck to make the text standard thickness.



The image shows two panels from a design tool. The top panel is titled 'Font properties' and contains three settings: 'Size' with a value of 18, 'Color' with a color picker icon and the value -1, and 'Bold' with a checked checkbox. The bottom panel is titled 'Box properties' and contains five settings: 'Start position X' with a value of 26, 'Start position Y' with a value of 267, 'Width' with a value of 200, 'Height' with a value of 40, and 'Color' with a color picker icon and the value -8388353.

Box properties:

All visual Actions are surrounded by a box. The text has to fit inside the box, otherwise parts of the text that are outside the box may not be seen. The Action: Text, wraps the text. So if there is space inside the box, the text will continue on a new row below the first row.

The frame in the mobile screen is 320 (X) x 240 (Y) pixels in total size. You can make the boxes go outside the Mobile Screen, but we recommend you to stay with in the frame.

Units are measured in Pixels:

Start position X: Shows the distance of the box from the left side of the mobile screen.

Start position Y: Shows the distance of the box from the top of the mobile screen.

Width: The width of the box.

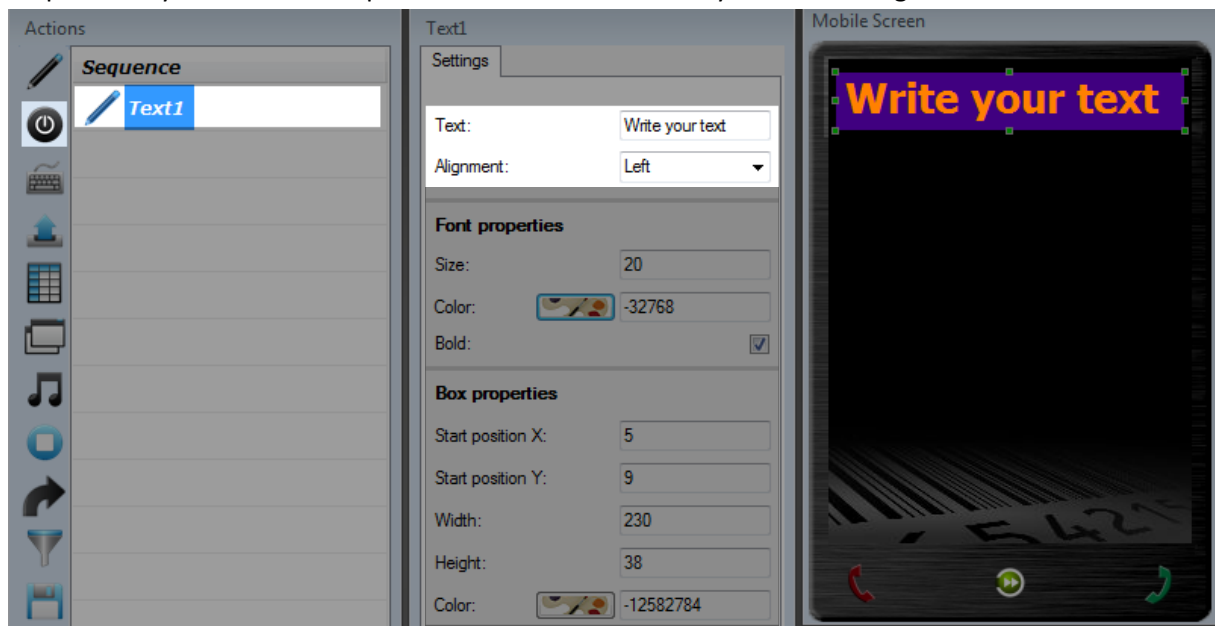
Height: The height of the box.

Changing the box size and position.

Changes can be made by either changing the numbers in the settings or dragging, dropping and resizing directly on the mobile screen. To resize the box visually in the mobile screen: Click on it to select (either in the sequence list or on the mobile screen). Eight green squares appear on the selected action on the Mobile Screen. When you hover over a green square with your mouse arrow the arrow turns in to two black arrows. Click and drag to resize. Click anywhere on the action with in the green boxes to move the action around.

3.1.2 Text

Displays a row of text with a box around it. Text is not a Sequential Action, which means that it can be placed anywhere in the sequence list with in the Screen you are working on.



Settings:

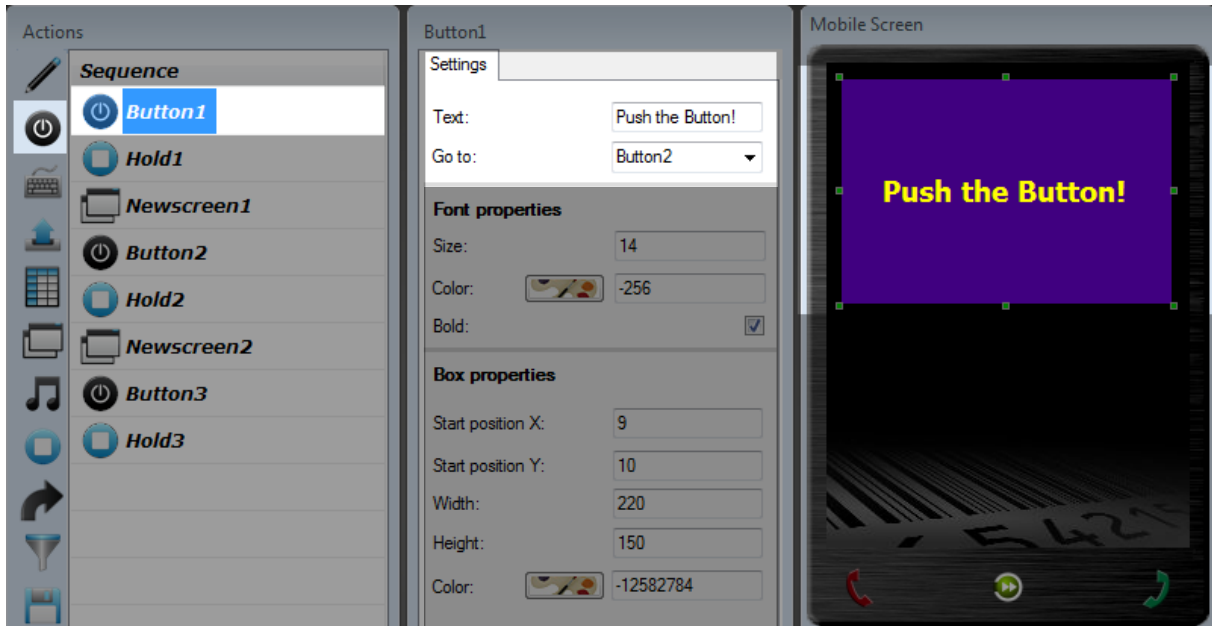
Text: This is where you write the text you want displayed in the mobile screen.

Alignment: Where you want your text to align. Select: Right, Center or Left.

The rest of the settings are Visual. **See: Visual Settings.**

3.1.3 Button

Shows a button on the screen. When the user pushes the button on the touchscreen your application jumps to the action in the sequence list that is selected under **Go to** in the button settings. Buttons are not sequential. If pressed they carry out their **Go to** instruction regardless of where in the sequence your application is. To make a screen with only buttons you would need to add a Hold to stop the application. Buttons can be placed anywhere in the same screen in your application.



Settings

Text: Write the text you want to be displayed inside the button. If the text is bigger than the button, parts of the text will not be seen. Resize the button, remove some of the text or make the font smaller.

Go to: Here you decide what action in your Sequence your application should jump to when the button is pressed.

The rest of the settings are Visual. **See: Visual Settings.**

3.1.4 Input

Input is a box where the user can enter data. The application stops here and waits for input from the user followed by ENTER. When ENTER is pushed the application moves to the next Action in the Sequence.

The input can come from: a keyboard, a touch screen keyboard, a barcode reader or an RFID reader. The entered value can be used in a Save (Save the value to a file), Output (shows the value on the screen), Operation (make changes to the value: add, subtract, divide..), Comparison (go to different places in the sequence list depending on the value) and other Actions.

Settings tab:

See Visual Settings

Advanced tab.

Click on the Advanced tab.

Type

Alpha numeric: Allows all characters to be entered: abc123.,*...

Alpha: Allows only letters to be entered: abcdefghijklmno...

Numeric: Allows numbers and decimals to be entered: 1234567890.,

Number of characters allowed

Min: Enter is not allowed if less than this number of characters are entered.

Max: If more than this number of characters is entered they are removed.

Accept only text having

These functions can be used to secure that the data comes from a barcode reader etc.

Preamble: These characters have to come first in the Input field. If it is not there the entered data is deleted and has to be entered again.

Postamble: These characters have to be last in the Input field. If they are not there the entered data is deleted and has to be reentered.

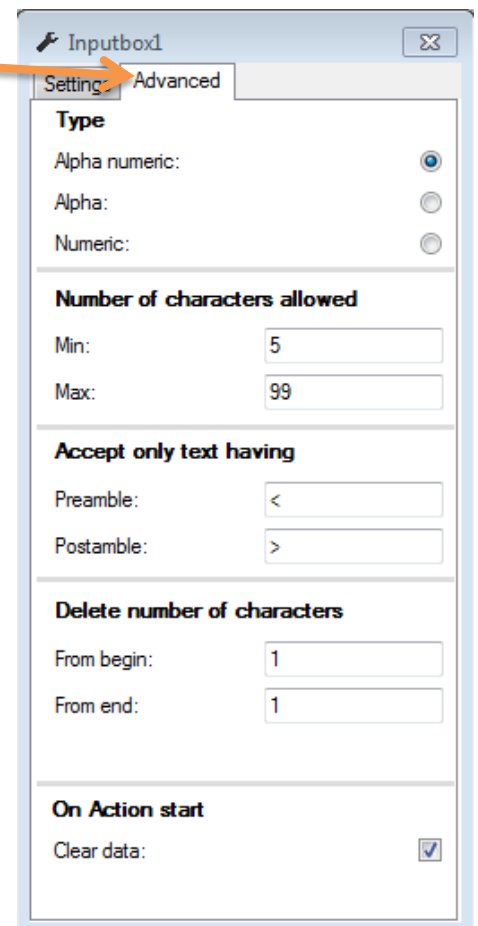
Delete number of characters

From beginning: Removes a number of characters from the beginning of the input data.

From end: Removes a number of characters from the end of the input data.

On Action start

Clear data: If this box is unchecked the data that was last registered in this box will still be there the next time the Action list gets to this Action. If it is checked the data will be removed.



Inputbox1

Setting Advanced

Type

Alpha numeric: ☒

Alpha: ☐

Numeric: ☐

Number of characters allowed

Min:

Max:

Accept only text having

Preamble:

Postamble:

Delete number of characters

From begin:

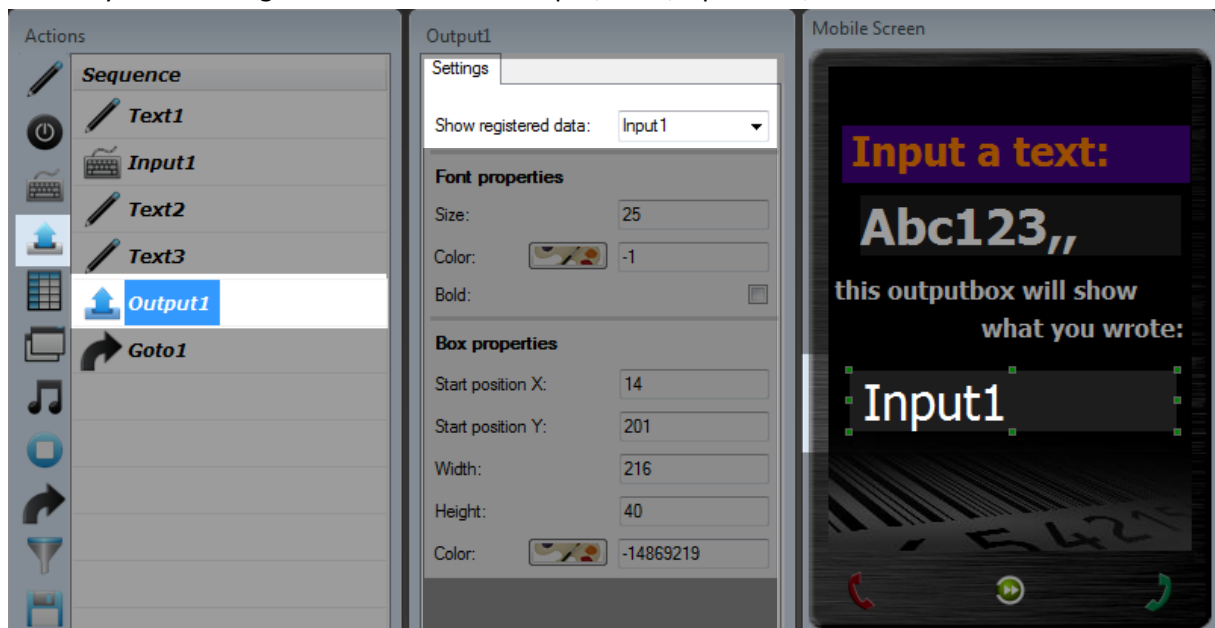
From end:

On Action start

Clear data: ☒

3.1.5 Output

Output takes the **Value** registered in another Action and displays it on the screen. The data can come from any action that generates a value like: Input, Time, Operation, Search etc.



Settings:

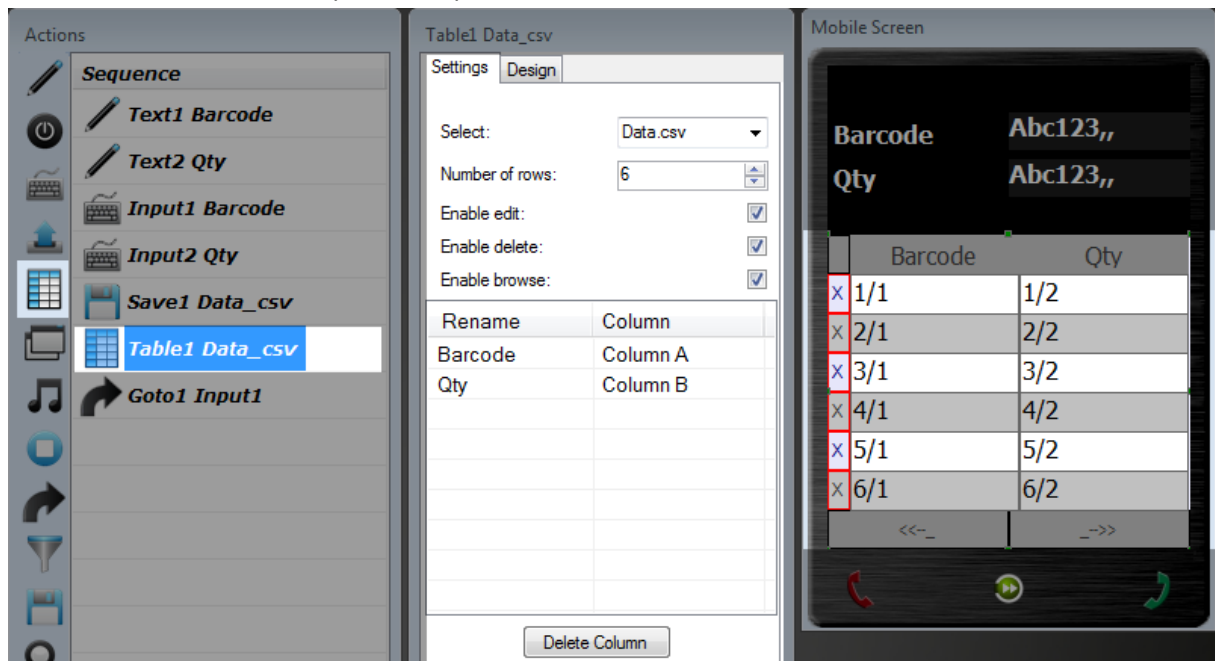
Show registered data:

Select the Action you want to display the Value from.

The rest of the settings are Visual. **See: Visual Settings.**

3.1.6 Table

Shows the content of an Export or Import file in a table. Can let the user browse and delete content.



Settings tab

Select:

Choose any file/database that you have defined through Save, Search or in Global (see Global settings).

Number of rows:

Select how many rows you want your table to display on the screen.

Enable delete:

An X appears to the left in the table, this is a Button. If the user clicks on the X the row is deleted.

Enable browse:

If checked, two arrow buttons are shown on the bottom of the table, right and left. Pushing a button makes the table show rows further down or up in the file.

Rename, Column. All column names in the selected file are shown here. Click on the name under the Rename column you can rename that column. These will be the headers of the columns in your table.

Table part 2

Design tab

Font:

Select small, medium or large font.

Colors:

Change color of the different parts of the table.

Column. Changes the color of the header.

Row. Changes the color of one of the rows. Every other row is white.

Box properties:

The total size of your table on the mobile screen. Changes can be made by either changing the numbers in the settings or dragging, dropping and resizing directly on the mobile screen.

Start position X: Shows the distance of the box from the left side of the mobile screen.

Start position Y: Shows the distance of the box from the top of the mobile screen.

Width: The width of the box.

Height: The height of the box. Cannot be changed.

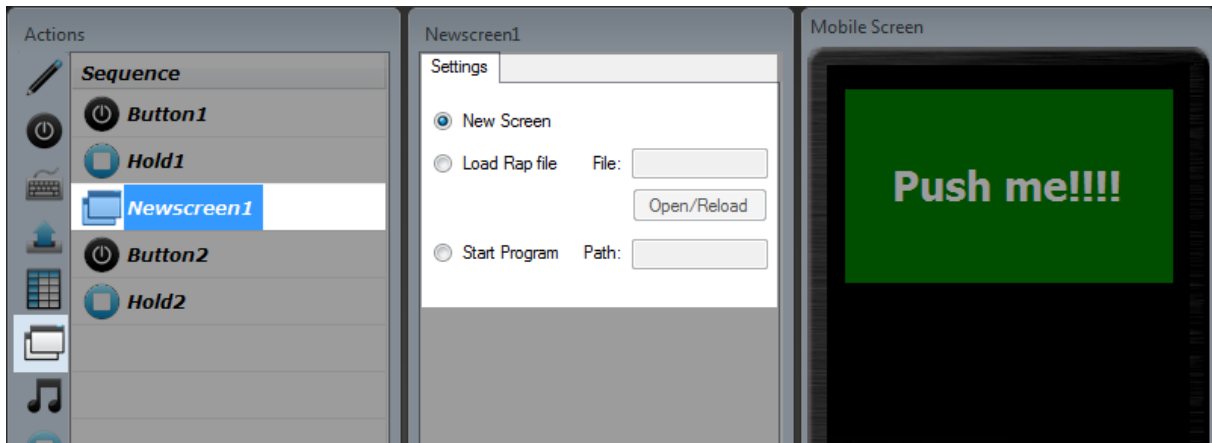
Automatically follows the number of rows and font size.

The screenshot shows a settings window titled 'Table1 Data_csv' with two tabs: 'Settings' and 'Design'. The 'Design' tab is active. It contains three sections: 'Font', 'Colors', and 'Box properties'. The 'Font' section has three radio buttons for 'Small', 'Medium', and 'Large', with 'Large' selected. The 'Colors' section has two rows: 'Column' with a color picker and the value '-8355712', and 'Row' with a color picker and the value '-4144960'. The 'Box properties' section has four input fields: 'Start position X' (0), 'Start position Y' (112), 'Width' (240), and 'Height' (208).

Table1 Data_csv	
Settings	Design
Font	
Small:	<input type="radio"/>
Medium:	<input type="radio"/>
Large:	<input checked="" type="radio"/>
Colors	
Column:	<input type="color"/> -8355712
Row:	<input type="color"/> -4144960
Box properties	
Start position X:	<input type="text" value="0"/>
Start position Y:	<input type="text" value="112"/>
Width:	<input type="text" value="240"/>
Height:	<input type="text" value="208"/>

3.1.7 New Screen

New Screen can have three different functions. Check the box for the function you want.



Screens.

A Raptool application can be made up of one or many screens. You can for example make different screens for different work tasks: Screen1: Main Menu (where the user selects a task), Screen2: Inventory, Screen3: Ordering. Screens are divided by the Action **New Screen**.

The three functions of New Screens:

1. New Screen.

The New Screen marks where a new screen begins and the previous screen ends. All actions after a New Screen are part of that screen. Select The New Screen or any of the actions after a new screen and this whole screen will be displayed in the mobile screen.

2. Load Rap file.

You can make a .Rap file, save it and then load it in other Raptool applications. This can be useful when making complex applications with many different screens. Click on the open/reload button and browse to the .RAP file you want to load. When the .RAP file that you load exits it will go back to the main application and go to the next action after the New Screen.

Raptool Applications that load other .RAP files are saved in the .RPF (Raptool Project File) format. The .RPF file will contain the main application AND the sub applications. If you make changes to the .RAP files that the main application loads you will need to reload them in the main application.

3. Start program.

You can start any program on the mobile device. You will need to locate the path to the file you want to start by browsing in your mobile device.

3.1.8 Sound

Plays any of 4 sounds. The sounds can be replaced under Raptool Designer/Media. They have to be in .WAV format. Copy the sounds you want to use and rename them to the same filenames you see in the folder. Rename the old files first.

Settings:

Select the sound you want to play.

3.2 Non visual actions

The actions that do not show up on the display.

3.2.1 Hold

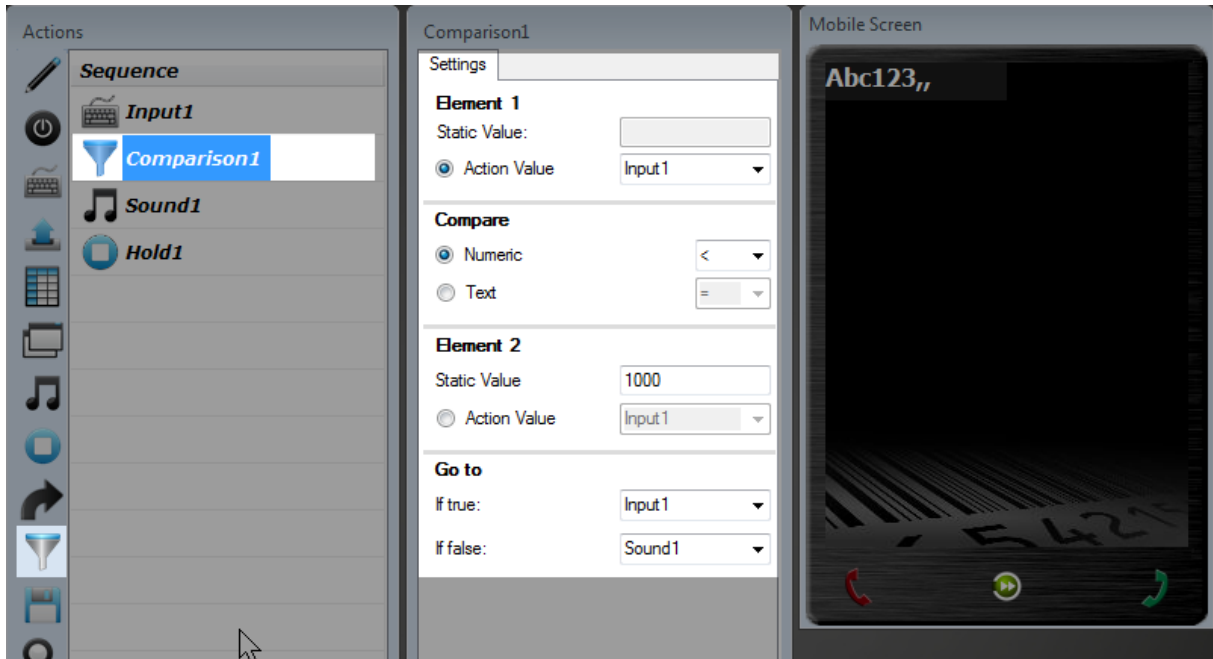
Stops the program and waits for instructions from another Action. Mostly used together with buttons if you want to make a menu with only buttons. Since buttons are not sequential, you need a **Hold** to stop your application and wait for the user to press a button. Hold has no settings.

3.2.2 Go to

Makes a jump in the Sequence to any action. Simply select where you want the application to jump.

3.2.3 Comparison

Compares Element 1 (E1) to Element 2 (E2). You can set criteria for the comparison. If the comparison criteria are fulfilled (true) the sequence goes to one Action, if it is not fulfilled the sequence goes to another Action.



The example above: If Input1 < 1000, Go to: Input1. If Input1 > 1000, Go to: Sound1.

Simulated: If you write 500 in Input1, it goes back to Input1. If you write 1500 it goes to Sound1

Settings

Element 1 (E1)

Static Value

If you want to use the same number every time. This is the preset selection.

Action Value.

Reads the Value from another Action. Select any Action Value.

Compare

Numeric. Compares one number to another. Only numeric values are allowed. Select = (Equal to), < (less-than), > (greater-than), <> (not equal to), >= (Equal to or greater-than), <= (Equal to or less-than)

Text. Compares a text or its size (number of letters in the text).

= compares the exact text in E1 to E2, if they are exactly the same the True criteria is fulfilled.

=>< (size) compare the size of the text, meaning the number of letters.

Element 2 (E2).

Same settings as Element 1

Go to

If true. Select what action in the Sequence to go to if the conditions are true.

Element1 is (=, <, >, <>, >= or <=) to Element 2

If false. Select where to go to if false.

3.2.4 Save

Saves Values to a file on the mobile device for later docking to Communicator or direct through wireless network on a central Raptool NET Communicator server. You can Save data to both Import and Export files.

Settings

File

A file is a Database. It can be an item list exported from your ERP-system or an inventory file generated in your Raptool application. In the Database you Save and Search for data. To learn how to add a file and change settings see: **Global, Files.**

Name:

Either select an already specified file in the drop down or create a new file by clicking New. You can edit the properties of the file you selected in the drop down by clicking Edit.

Row

In the file you write data to a Row. You can either add a new row to your files or write to an existing row.

- **Add new Row.** Every time a Save is made a new row is added to the file and the Values are Saved.
- **Update Row.** Here the data is saved to an existing row. Select what Action Value you want to get the row number from. Usually you make a Search Action deliver to the row number you want to write to.

Column

The File you have selected has the number of columns shown in the table. Here you select which columns you want to write data to. Check the Checkbox next to the columns you want to save to. Then select what Action Value to save to each column.

Column name	Action Value
<input checked="" type="checkbox"/> Column A	Input1
<input checked="" type="checkbox"/> Column B	Input2
<input checked="" type="checkbox"/> Column C	Time1
<input checked="" type="checkbox"/> Column D	Operation1

		B	C	D
1	2134234	12	20101130	164149
2	213423E+11	12	20101130	164302
3	2345521235	63	20101130	164310
4	1234567890	12	20101130	164317
5	9876543210	32	20101130	164325
6	9548575765	23	20101130	164331
	7,57576E+17	22	20101130	164338

3.2.5 Search

Make a search for data in a file. For example you can scan a barcode with an Input and then use the Action Value from the Input to search for that barcode in an article register file and present the article text in an Output.

Settings

File:

A file is a Database where you Save and Search for data. To learn how to add a file and change settings see **Global, Files**.

Name:

You can search for data in both Import and Export files. Either select an already specified file in the drop down or add a new file by clicking on Import. You can edit the selected file by clicking on Edit.

Create if not found

If the file has been deleted for some reason it is automatically created again to avoid errors in your application.

Search Phrase:

The Phrase is the “word” you search for. It can be a number, barcode, text, etc. Anything that is in the File you specified.

- **Static Value** means you always search for the same phrase.
- **Action Value** lets you select any action that generates a value. The value is used as the search phrase.

In column. Select in which column in the file you want to do your search.

Go to

If your search phrase is not found you may want to alert the user to this. This is why you can jump to different places depending on if you find the phrase or not.

Create Search Value:

Select what columns you want to create Values for by checking the boxes next to them. The values will be named Search Name + Column name. In the case above: S1 Row Number, S1 Art no and S1 Art text. These Values can then be used by other Actions like: Output, Operation etc.

3.2.6 Time

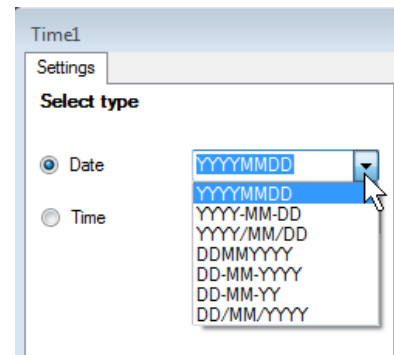
Reads the Time or Date from the mobile device and creates a Value for it.

Date

Check this box to make a value for Date. Select the format you want in the drop down. Y = Year, M = Month, D = Day.

Time

Check this box to make a value for Time. Select the format you want in the drop down. H = Hour, M = Minute, S = Second.



3.2.7 Operation

Can either be an **Action Value Operation** or a **File Operation**.

- **Action Value Operation.** You have one or two elements (values). The two elements can be added, subtracted, divided, you can copy parts of it, etc.
- **File Operation** is used in files to remove rows and columns, create values for the sum of columns, average, etc.

Action Value Operation:

Element 1

Static Value

If you want to use the same number every time. Preset.

Action Value.

Takes the value from another Action. Select any Action Value.

Operation

None.

Mostly used to set a value to a Static number. Element 2 is not selectable.

Text size.

Counts the number of letters and delivers a number. Example "CARL" delivers the number 4.

Math Operation.

Element 1 (+ad), -(minus), /(divide) or *(times)) Element2. Only numeric Values are allowed.

Text Operation, Add.

Takes the exact content of Element1 + Element2. Example E1 = Hi (Text Operation Add) E2 = There, the resulting value is: HiThere

Text Copy. Takes out part of the data in Element1. Example E1:JamesBond, set Start Position to: 3, End Position to 6. The result is: mesB

Element 2

Same settings as Element2

Send Result to

Select where to send the Value generated by the Operation. Operation can push its result to another Action Value, or itself. If you select to send the value to Time1, the Value in Time1 will be the same as Operation1 until the sequence goes past Time1 again.

The screenshot shows the 'Operation1' configuration window. It has two tabs: 'Action Value' (selected) and 'File'. Under 'Element 1', 'Static Value' is set to 15, and 'Action Value' is selected with 'Time1' chosen from the dropdown. The 'Operation' section has 'Math operation' selected, with a '+' sign in the dropdown, and 'Add' in the 'Text operation' dropdown. 'Start position' is 1 and 'End position' is 2. Under 'Element 2', 'Static Value' is empty, and 'Action Value' is selected with 'Input1' chosen. The 'Send result to' section has 'Action:' set to 'Operation1' in a dropdown menu.

3.2.8 File Operation

Select

File: Select the file to edit.

Operation

None. No file operation is selected and an Action operation can be made

File:

- **Delete.** Removes the file from the Handheld Computer.

Row:

- **Number of Rows:** Counts the number of Rows in the file and generates as a value.
- **Delete Single Row:** Removes one Row. The Row number is selected in Operation Settings.
- **Delete All Rows:** Removes all Rows in a file.

Column:

- **Sum,** adds all values in the column and generates as a Value.
- **Min,** the Min (smallest) value in the column is generated as a Value.
- **Max,** the Max (Biggest) value in the column is generated as a Value.
- **Average,** the Average value in the column is generated as a Value.

Select a Column Name in Operation Settings.

Operation Settings

Static Value or Action Value is used in Delete Single Row to select what Row Number to delete.

- **Static Value** gives the same value every time.
- **Action Value** gets the number from another Actions Value.

Column Name. Select which column in the file to work with in Column Operation.

Send Result to

Select what Action Value to send the result to. Used in: Number of Rows, Column: Sum, Min, Max, and Average.

Operation can push its result to another Action Value, or itself. If you select to send the value to Time1, the Value in Time1 will be the same as Operation1 until the sequence goes past Time1 again.

Operation2

Action Value File

Select

File: Data.csv

Operation

☐ None

☐ File Select...

☐ Row Num of Rows

☒ Column Max

Operation Setting

Static Value:

☒ Action Value Input1

Column Name: Select...

Send result to

Action: Select...

Time1

Operation2

Input1

Operation1

3.2.9 Sub

What is a Sub?

Subs are similar to Actions except they don't have to be sequential. Once you define a Sub, it can be accessed anywhere in your application by activating it with the Action Sub (the star shaped icon).

There are different types of Subs for different tasks.

To learn more about how to create and change settings for Subs, see: Global, Subs (4.5).

The Action, Sub.

As default all Subs are deactivated. You need Action called Sub (The Star Icon) in your Sequence to Activate and deactivate them. When you create Subs you will be able to activate and deactivate them in the different parts of your sequence with this Action.

Example: You have a start menu. Here you want the keys 1-5 to jump to different parts of your program. In "Inventory" you do not want the keys 1-5 to make a jump. To do this you make a Key press sub for the start menu, where 1-5 goes to where you want them to go in the start menu. In the Start menu Screen you put in the Action Sub in the sequence, in the settings you select Activate for the KeyPress1 Sub. In the Inventory screen you put another Action Sub, select the same Keypress but set it to Deactivate.

Settings

Decativate All

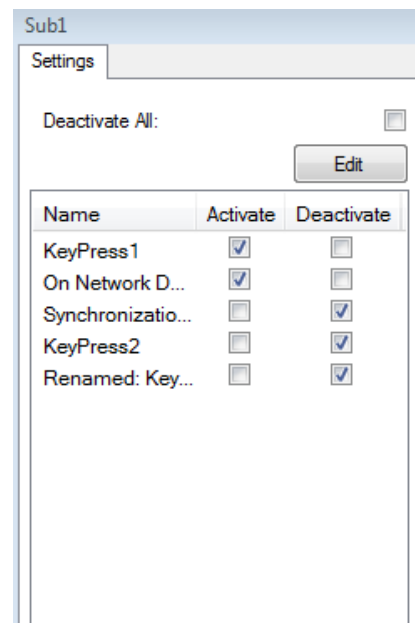
Deactivates all subs if checked.

Edit

This button takes you to: Global Settings, Subs. Here you can create new subs, remove subs and change their settings.

The list

This is a list of all the subs you have created (if any). In this list you activate or deactivate the subs. If you want the activation status to remain unchanged you do not check any box.



The screenshot shows a window titled 'Sub1' with a 'Settings' tab. At the top, there is a 'Deactivate All:' checkbox (unchecked) and an 'Edit' button. Below this is a table with three columns: 'Name', 'Activate', and 'Deactivate'.

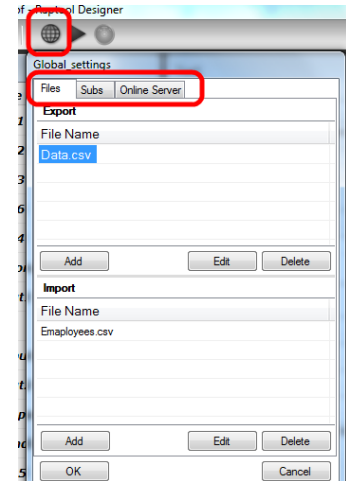
Name	Activate	Deactivate
KeyPress1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
On Network D...	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Synchronizatio...	<input type="checkbox"/>	<input checked="" type="checkbox"/>
KeyPress2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Renamed: Key...	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4 Global

Global is located in the top menu (the icon that looks like a globe). It can also be accessed from shortcuts in some actions settings (Search and Save).

In Global you specify items once, and can access them from multiple parts of your applications.

The three Tabs are: Files, Subs and Online server.



4.1 Files

Most mobile solutions need to Export and Import Files (databases) to and from other systems.

Import

Import files can be article registers, picking lists, customer registers etc. The databases can come from POS, ERP, CRM or any other system you need data from. These files can then be imported to your Raptool solution.

Export

In the mobile device a work task is performed and databases are generated that need to be exported (Export): Inventory lists, Serial number lists, customers visited... These databases can then be used in your other systems. Raptool works with SQL internally but can export to other types of database.

A7					fx 7575757575757000				
	A	B	C	D					
1	2134234	12	2010113	164149					
2	2,13423E+11	12	20101130	164302					
3	12345521235	63	20101130	164310					
4	1234567890	12	20101130	164317					
5	9876543210	32	20101130	164325					
6	9548575765	23	2010113						
7	7,57576E+17	22	20101						
8	Barcode data	Units	Date						

When you edit data!

This is a file generated by an Inventory App. When imported to Excel it looks like the screen dump above. You can see Excel is not displaying the larger numbers correctly. When you look in the editing field for A7 you notice Excel has replaced the last three numbers that used to be 575, with 000. A limitation Excel has for large numbers in certain formats. This can create problems if you open a file to view, edit and then save the file. If you need to use Excel for editing, make sure that you import all data with Text formatting (not numbers etc.) and save the file to CVS (MS DOS) or some other low level format.

4.2 The files tab

There are two types: Import and Export.

Import. Means files that are sent FROM the Mobile Device TO the PC (Raptool Communicator).

Export. Files that are sent FROM the PC TO the Mobile Device.

The buttons:

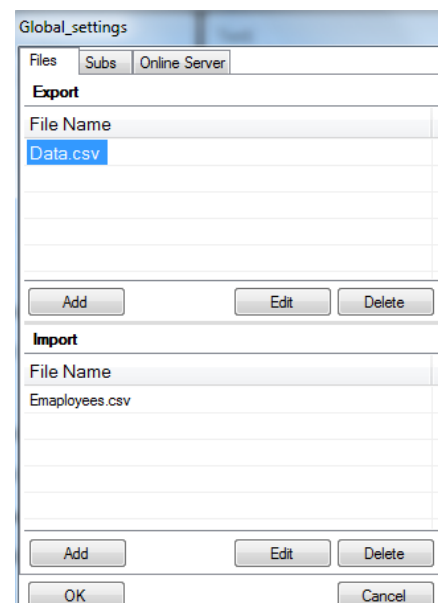
Add: Add a new file.

Edit: Click on the file in the list that you want to edit, make sure it is highlighted and press Edit.

Delete: Removes the file from your program. It does not delete existing files from your hard disk.

Ok: Confirms the changes you have made.

Cancel: Exits Global without saving the changes you have made.



4.3 Export

Click on **ADD** to create a new export file.

Settings:

File name

Select the name you want your file to have when it is exported.

Select Static or Action Value Name for the file:

Static value.

The file will always have the same name. Specify it here. Two files cannot have the same name in the same application.

Action value.

When a File Save is made (the Action File Save), the file name is taken from the current action value in the action you select in the dropdown.

File Properties

File extension.

The export file will be named: Filename.extension. For example data.csv

Column separator.

Excel and other programs can use a Separator to determine where one column ends and the next begins. The most used separators are: Semi colon ; Pipe | Tab. Any other character can also be used. Enter the character as is or enter the Decimal number representing the character. For example Tab cannot be entered in the first box, you need to enter the number 9 in the Decimal box. Here is a link to one example of a list of the decimal numbers representing each character: <http://www.asciitable.com/> Use the DEC numbers

Synchronization

Choose how you want to synchronize your file with Raptool Communicator:

USB/Ethernet.

The file is synchronized when the mobile device is docked through USB to a PC with the USB Communicator or through Ethernet to a NET Communicator.

On line.

The file is stored on the central server (Raptool Communicator).

Never Sync.

The file is not synced. It can be used for storing data locally. With Wi-Fi or 3G it can be synchronized in the sequence with the Sub: Sync and deleted with the File Operation: Delete. Together with the Sub: On network detection, you can make your own synchronization routine.

Delete after synchronization.

When the data in the file has been transferred to the Communicator the file on the Mobile Device will be removed.

...

Name	Type	Size
A Column A	Text	225
B Column B	Text	225
C Column C	Text	225
D Column D	Text	225

...Column settings.

The files have Rows and Columns. Columns are divided vertically. If you look in an excel sheet the columns are the ones with letter (A, B, C, D, E...) and the Rows have numbers (1, 2, 3, 4, 5...). You can add more columns to your file by clicking on the Add button.

The settings for each column are:

Name.

Rename to column to help you keep track of what data to save in each column. For example: A = Barcode, B = Article Number, C = Article text etc.

Type.

Select Text or Number. In a Number column you can only save numeric values. Trying to save a text will generate an error. Some File Operation functions require numeric columns.

Size.

Select the maximum number of characters that can be saved in each column. SQL that is used internally for Raptool, means choosing a lower value that will make the file take up less space.

Lower buttons

Delete.

Click on the letter for the column you want to delete (A, B, C etc.) and push the Delete button to remove that column.

Ok: Confirms the changes you have made.

Cancel: Exits Global without saving the changes you have made.

Export settings

Settings

File name

☒ Static Value: Data
☐ Action Value: Input1

File properties

File extension: csv
Column separator: : Decimal: 59

Synchronization

Method: USB/Ethernet
Delete After Synchronization: ☒

Column settings

Add

	Name	Type	Size	
A	Column A	Text	225	
B	Column B	Text	225	
C	Column C	Text	225	
D	Column D	Text	225	

Delete

OK Cancel

4.4 Import

Import from

Select file type and push the Open button. If you make changes in the database file you need to import the file again. In the example you can see that one of the rows in the column Barcode has been corrupted by using the wrong format in Excel.

Text File (At present the only available option). Find the file you want to import and push Open. If you have selected a valid file you will see data in the table under Preview. If your file contains more than one column, but only one column is shown, you most likely have another Separator than the one selected as default. See: Separator. The file could also be in the wrong format.

Synchronization

Choose how you want to synchronize your file with Raptool Communicator:

USB/Ethernet. The file is synchronized when the mobile device is docked through USB to a USB Communicator or through Ethernet to a NET Communicator.

On line and Semi online are currently not available.

The file is stored on the central server.

Separator

Select the separator used in your file. If you are not sure you can use for example Notepad to open the file and try to find the separator.

Semicolon is default. Select: Tab, Pipe or Other. Other lets you choose any other character. Enter the character as is or enter the Decimal number representing the character. For example the character: Tab has the Decimal number 9. Here is a link to one example of a list of the decimal numbers representing each character: <http://www.asciitable.com/> Use the DEC numbers.

Preview

Row 1 is Column name.

Checking this box will take the value in Row 1 of your database and use as the name for the column.

Number of columns found.

How many columns that were found in the database file, with the selected separator.

The Table. A table reflecting how Raptool sees your file. Use the scrollbars to move around.

Buttons on the bottom

Cancel. Exits without saving.

Finish. Activated when all data needed has been entered.

Back. Go back

Next. Go to the next part of the file import: **Column settings.** Required.

	Barcode	Art no	Art text
2	12	34567	Adidas Bounc...
3	1.23E+12	34568	Adidas Bounc...
4	13	34569	Nike LunarGli...
5	14	34570	ASICS Gel-N...
6	15	34571	adidas Respo...
7	16	34572	Reebok RealF...
8	17	34573	Reebok Zig D...
9	18	34574	Nike Air Max T...
10	19	34575	Nike Zoom Str...
11	20	34576	Nike Shox T...

Column Settings

After pushing the Next button you get to Column Settings.

Now you can edit the setting for each column.

The settings for each column are:

Name

If you checked “Row 1 is Column name” in the earlier section your columns will already have names, otherwise they will be called: Column A, Column B etc. Rename to column to help you keep track of what data to save in each column. For example: A = Barcode, B = Article number, C = Article text etc.

Type

Select Text or Number. In a Number column you can only load numeric values. Trying to load a column with a text will generate an error. Some other actions require numeric columns to work. So if you know that only numbers will be used in a column, set the type to Number. If the numbers are decimal numbers make sure your regional settings are set correctly in Windows. For example: USA Settings give you the number formatting: 10.1

while some European settings give you: 10,1. So if your regional settings are set to USA, you set the column to Numeric and the database contains: 10,1 you will get an error.

Size

Select the maximum number of characters in each column. SQL that is used internally for Raptool, means that choosing a lower value will make the file take up less space. If you know that all barcodes are 13 characters you can set this number to 13.

Finish, Cancel and Back.

Push the **Finish** button to save and exit.

Cancel to exit without saving the new Import file.

Back to go back to the first screen.

Import settings

Import from

☒ Text File File: raptool retail sample

☐ Database

☐ ODBC

Synchronization

Method: USB/Ethernet

Separator

☒ Semicolon ☐ Other

☐ Tab

☐ Pipe

Column settings

☒ Row 1 is Column name

Number of columns found: 20

	Name	Type	Size
A	Barcode	Text	225
B	Art no	Text	225
C	Art text	Text	225
D	Distributor	Text	225
E	Size	Text	225
F	In price	Text	225
G	Sale price	Text	225
H	Vat	Text	225
I	Stock location	Text	225
	Stock no. Unite	Text	225

4.5 Global: Subs

Subs are similar to Actions except they don't have to be sequential. Once you define a Sub, it can be accessed anywhere in your application by activating it in your Sequence with the Action Sub (the star shaped icon). There are different types of Subs for different tasks.

To learn more about how to activate Subs, see: Action, Subs (3.2.9).

4.5.1 Creating a Sub

Either put in an Action Sub in the sequence by clicking on the Star shaped icon. Press the Edit button in the settings or open: Global and go to the Subs Tab.

The Subs have different features that can be divided in some main groups:

- **Trigger:** A trigger checks if a certain condition is fulfilled, like a key being pressed on the mobile device, if it is docked to the server etc. When that condition is fulfilled the Sub performs the task you have selected.
- **Non Sequential:** When they are active they perform their action regardless of the sequence. They interrupt the sequence and perform their task. The task may be to Go to another part of the sequence.
- **Sequential:** Acts like a normal action. When activated they perform their task and then go to the next action after the Sub.

Select type:

- **Keypress.** Trigger, Non Sequential. When a hardware key is pressed on the mobile device, a Go to Jump is made.
- **On Network Detection.** Trigger, Non Sequential. If connection to the Raptool Communicator is detected a Go to jump is made.
- **Synchronization.** Sequential. Used to make your own Synchronization function. When activated it synchronizes, deletes and/or converts the files selected.

When you click on the Add button you go to the specific settings for that action.

To Edit an existing Sub. Select it by clicking on it and push the Edit Button.

To Delete an existing Sub. Select it by clicking on it and push the Delete Button.

Push OK to confirm and exit or Cancel to cancel and exit.

4.6 The Subs and their settings

4.6.1 Keypress

Settings:

Name: Select the name you want for your Sub.

KeyPress, New Key:

Push the Add Button to add one more key.

The Table

In the first dropdown you select what key to use.

In the second dropdown you select where in the Sequence to go to if that key is pushed.

To Delete an existing Key. Select it by clicking on it to select it and push the Delete Button.

4.6.2 On Network Detection

Settings:

Name: Select the name you want for your Sub.

On Detection

If connection to the Raptool Communicator is detected (the Mobile Device is docked, has Wifi connection etc) this Go to task is performed.

Go to

Select where in the Sequence to Go to.

4.6.3 Synchronization

Settings:

Name: Select the name you want for your Sub.

File

You will see a list of all the files you have in your application.

Select what you want to do:

- **Sync.** Synchronizes (Sends/Receives) the file.
- **Delete.** Removes the file from the Mobile Device.
- **Convert.** Converts the file on the server to the selected conversion format.

4.7 Online Server Tab

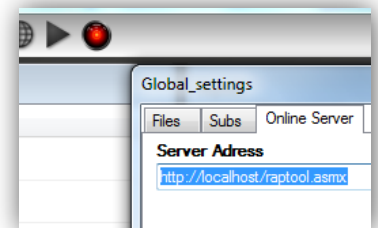
Server Address

A Raptool mobile application can communicate through two different communicators:

- USB Communicator. Dock the device to a PC with the Communicator installed.
- NET Communicator. The mobile device communicates through web service to the communicator. Can use any type of network or mobile communication like: WIFI, Ethernet, 3G, 4G etc.

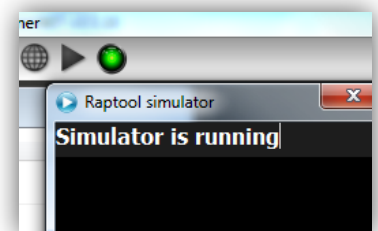
When developing your application in the designer you may want to test the communication to the NET Communicator in the simulator. See the NET Communicator manual for more information. In the server address field you fill in the network address where your NET Communicator is installed in your network. For example:

`http://192.168.100.4/raptool.asmx` If the NET Communicator is on the same PC as your Designer you write: `http://localhost/raptool.asmx`.



The NET Connection indicator has 3 modes:

- Gray. No NET Server address has been entered.
- Red. An address has been entered but it is not connected.
- Green. The Designer is connected to the NET Communicator.



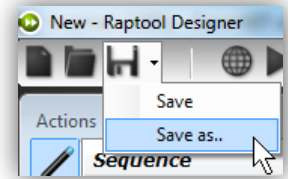
The Designer only tries to connect to the address you have entered when you start the simulator!


When running the simulator and the Green light your application will work as if your mobile terminal was connected to the network.

5 Making an application

5.1 Your first application

Click on **New** in the **Top Menu**. Save your new application by clicking on the **Down Arrow** next to the **Disc button** in the top menu and selecting "Save As". Choose a name for your application and push: Save. Now you can quick save your application by clicking on the Disc icon whenever you make a change.





 Add the following Actions: first **Input** then **Save**.

In the settings for **Save1**. Push the New Button. A new window appears where you create and change settings for the file. Change nothing, just press the Ok Button (Bottom right). In the Save Settings: Check the box next to Column A to activate that column, in the drop down: Select Input1

 Add the Action: **Table**

Change the settings: "Select file" select Data.csv in the dropdown, "Number of rows" = 8, "Enable browse" check the box, Move the table down about 20 pixels by selecting it in the mobile screen and dragging it down. Select another Action in your Sequence List to confirm the move.

 Add a **Go to**. In the settings Select **Input1**.

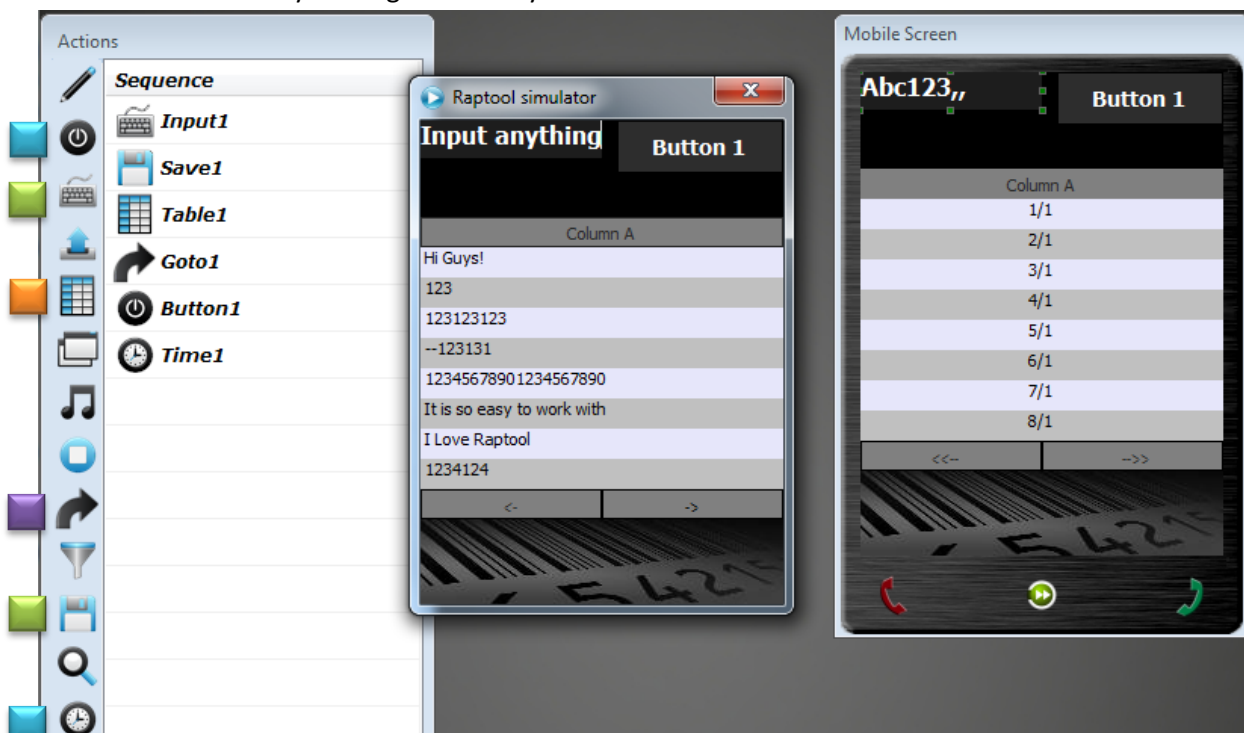
 Add a **Button** and a **Time**. Set Button1 to go to the Time1 if it is pushed. Place the button to the right of Input1. Your application should look something like the screen shot below.

Simulate your Application by pushing the Simulator button (Play) in the Top Menu.

Write something with your keyboard, press Enter, and repeat.

You should see the Table in the simulator filling up with the data you enter. Push the Arrow buttons in the table to brows back and forth in the file.

Push the "Button1" by clicking on it with your mouse arrow to exit.



Congratulations! You have made your first Raptool Application.

Now give your application some color, play around with the settings and see what happens.

5.2 How the application works

The first part of the Sequence:

Inputbox1. Waits for the user to enter a text and press enter, when this is done the Sequence moves to the next position:

Save1. Adds a new Row to the file you have defined: Data.csv and saves the Value from Input1 in Column1 (we only have one column in this case). When a Mobile device is docked, this file can be sent to the PC through the Raptool Communicator.

Table1. When the sequence gets here the file: Data.csv is read and the content is presented in the table. The Table is showing 8 Rows and 1 Column. The buttons allow you to brows back and forth in the file if the content cannot fit in 8 Rows.

Goto1. Is set to jump back to Input1 making your application into an infinite loop.

The exit function:

Button1. Whenever Buttons are pushed they execute their instructions which is a Go to. In this case we go to Time1.

Time1. Time reads the time from the internal clock in the device your application is running on and generates a Value other actions can use. In this case we only us it as an Exit function. We need somewhere that the Exit Button can jump that does not have any actions after it. This means that the Application exits. In a live Mobile application you don't need an exit button since the user should never go out of the application. But during the tests and development you will need a way to exit your application.

To learn more about developing software on the Raptool platform, please contact your Raptool partner for more information about our training courses.

6. Trouble shooting

6.1 Avoiding Errors

There are ways to make your application hang, not work right, go in to infinite loops etc. For most type of errors you will see a popup screen telling you what error has been made. Here are some examples of what to avoid:

- **Infinite Loops.** Making a Go to loop back to itself or actions above it in the sequence without a stop creates an infinite loop.
- **SQL Errors.** SQL has a limited number of allowed characters. If your database contains characters that are not allowed you will get an error. The same applies to trying to save characters that are not allowed. Consult an SQL expert if you run in to problems.
- **Mathematical Operations.** Trying to multiply "5 x Hello" will generate an error since "Hello" is not a number. Try to avoid this by making sure inputs and other actions used in Mathematical Operations only allow numeric values.
- **Removing or renaming an Action in your Sequence.** If other Actions Go to or use a Value generated by an Action that you have removed you need to change the settings for these Actions.

If you find an Error in any application. Report it to your reseller.