

Expanding knowledge One BUBBLE at a time . . .

User Manual

HODA Tools

Form Designer

www.hodasystem.com
www.axiome.ch

www.omrstudio.com

HODA System 



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1 HODA Tools-FormDesigner Workspace Tour

Becoming familiar with terminology and workspace available in the **HODA Tools FormDesigner (HFD)** helps you follow the concepts and procedure found in this user manual and online help.

Optical Mark Reader (OMR) and HODA Tools terms

Before you get started in **HFD**, you should be familiar with the following terms:

| Terms | Description |
|-----------------------------------|---|
| Bubble | A small box or ellipse on the paper form that is filled by user and read by OMR machine. |
| Clock Marks (Timing Marks) | A group of special black printed boxes, on left or right side of OMR form. Only the bubbles that are in front of these timing marks will be read by Axiome OMR Machines. |
| OMR | Optical Mark Reader is a proven solution for data capturing. It needs designing and printing OMR forms, filling printed forms by users and finally read them by OMR devices like Axiome machines, and save the results for more processing. |
| OMR Form | This is a special form which is designed to be read by OMR machines. It contains timing marks, OMR bubbles, text, image, shape and other objects on it. An OMR Form must be designed based on the OMR Ruler standards to be readable by the OMR machines. |
| OMR Form Standard | There are two kinds of OMR forms. In one of them, Clock Marks are printed on left side and in the second, Clock Marks are printed on right side of OMR forms. The first is called <i>American Standard</i> and second is called <i>Europe Standard</i> . |
| OMR Ruler | There are three standards for OMR form designing. In these standards there are 32, 40 and 48 tracks (OMR bubbles) in each row of form. OMR rulers are used to designing OMR forms according to these standards. |

OMR Object This object is for drawing customized Blocks of OMR bubbles with special properties and data inside the bubbles. This object helps to draw OMR bubbles easily on the form without being worried about the OMR Ruler standards.

Exploring the HFD windows

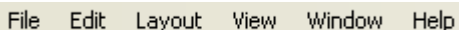
HFD contains elements and tools for designing OMR forms. These are reachable from the *menu bar*, *toolbars*, *property editor* and *items tree view*.

HFD contains the following main parts:

HFD MAIN PARTS

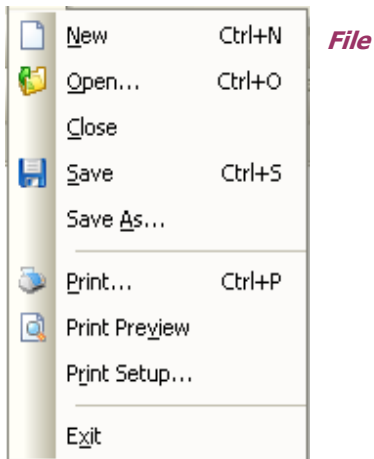
| Part | Description |
|-----------------|---|
| Menu bar | Used to access HFD main functionalities. |
| Toolbars | There are some toolbars that users can use to access HFD functionalities rapidly. For each toolbar, there are shortcuts from keyboard. |
| Items tree view | Using this object, users can view and select any object on the form via a standard tree view structure. |
| Property Editor | Property Editor shows selected item's properties to the user and user can change any desired property's value. |
| Status Bar | At any time, status bar shows you the status of HFD , like the active object and cursor position. |

Menu bar



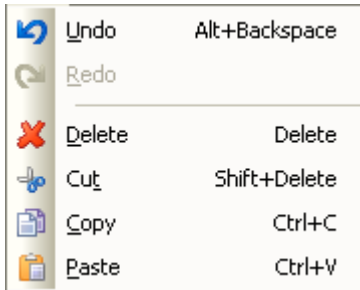
File Edit Layout View Window Help

Using menu bar you can access to main functionalities of **HFD**. You can view the Menu bar items and their sub items below:

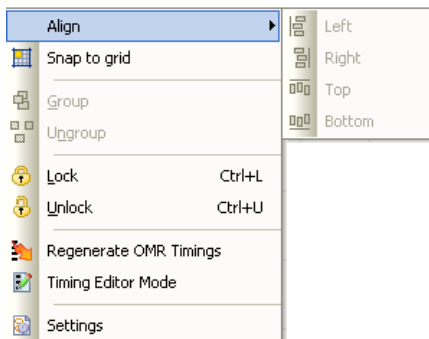


| Items of File | Short Cut | Description |
|---------------|---------------|--|
| New | <i>Ctrl+N</i> | Creates a new blank OMR form. User can draw any desired OMRs, shapes and other objects on it. |
| Open | <i>Ctrl+O</i> | Opens a saved OMR form. |
| Close | <i>Ctrl+L</i> | Closes the active OMR form. If form was changed, user should confirm a question to save the form or not. |
| Save | <i>Ctrl+S</i> | Saves the current active OMR form to a file. |
| Save As | <i>Ctrl+A</i> | Saves the current active OMR form with a new name. The original copy of the form remains unchanged. |
| Print | <i>Ctrl+P</i> | Prints the active OMR form. |
| Print Preview | | Shows the print preview of the active OMR form to the user. |
| Print Setup | | Opens the print setup window for changing the setup options. |
| Exit | | Exits from HFD . If there are some unsaved forms, HFD will save them by user confirmation. |

Edit



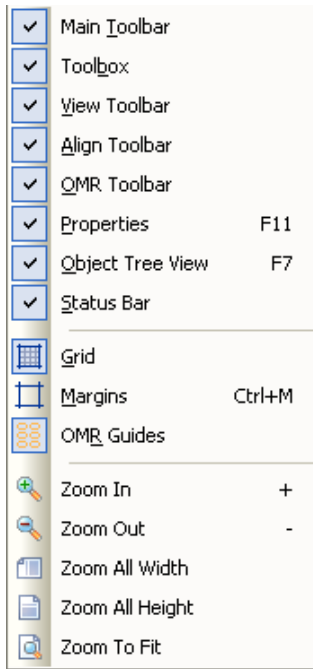
| Items of Edit | Short Cut | Description |
|---------------|---------------|--|
| Undo | <i>Ctrl+Z</i> | Cancels the last job done by the user. |
| Redo | <i>Ctrl+Y</i> | Cancels the undo done by user. |
| Delete | <i>Del</i> | Deletes the selected items from the form after user confirmation. |
| Cut | <i>Ctrl+X</i> | Cuts the selected object(s) to the clipboard and removes them from the form. |
| Copy | <i>Ctrl+C</i> | Copies the selected object(s) to the clipboard. |
| Paste | <i>Ctrl+V</i> | Pastes the contents of the clipboard on the active form. |



Layout

| Items of Layout | short Cut | Description |
|------------------------|-----------|--|
| Align Left | | Aligns the left side of selected objects on the form. |
| Align Right | | Aligns the right side of selected objects on the form. |
| Align Top | | Aligns the selected objects on the form from top. |
| Align Bottom | | Aligns the selected objects on the form from bottom. |
| Snap to grid | | Snaps all objects on the form to grid. |
| Group | | Groups the selected objects. |
| Ungroup | | Ungroup the selected objects. |
| Lock | | Lock the selected objects. You cannot change the position or size of the locked objects. |
| Unlock | | Unlock the locked objects |
| Regenerate OMR Timings | | Generate the required timing marks, in front of the OMR objects and Form ID's. |
| Timing Editor Mode | | Switch to timing editor mode, witch you can click on timing marks to activate or deactivate them. Click again in this button to switch to design mode. |
| Settings | | Displays the form settings window. Also you can double click on the form to bring the setting form. |

View



| Items of View | Short Cut | Description |
|-----------------|-----------|-------------------------------------|
| Main Toolbar | | Shows/Hides the items main toolbar. |
| Toolbox | | Shows/Hides the Toolbox. |
| View Toolbar | | Shows/Hides the View toolbar. |
| Align Toolbar | | Shows/Hides the Align toolbar. |
| OMR Toolbar | | Shows/Hides the OMR toolbar. |
| Properties | | Shows/Hides the Properties Window. |
| Items Tree View | | Shows/Hides the items tree view. |
| Grid | Ctrl+G | Shows/Hides the grid. |
| Margins | Ctrl+M | Shows/Hides the margins. |
| OMR Guides | Ctrl+R | Shows/Hides the OMR guides. |

| | | |
|----------------|---|---|
| Zoom In | + | Zooms In the active form. |
| Zoom Out | - | Zooms Out the active form. |
| Zoom All Width | | Zooms the form to the size that all objects are visible without horizontal scrolling. |
| Fit to height | | Zooms the form to the size that all objects are visible without vertical scrolling. |
| Fit to width | | Zooms the form to the size that all objects are visible without scrolling. |

Window



Items of Window

Description

| | |
|------------|--|
| New Window | Creates and opens a new form. |
| Windows | Opens the Windows form, witch is containing the names of all opened OMR forms. |

Help



Items of Help

Short Cut

Description












| | | |
|----------------|-----------|----------------------------------|
| Contents | <i>F1</i> | Shows HFD help window. |
| Tip of the Day | | Shows HFD tip of the day window. |

- | | |
|-----------------------|----------------------------------|
| Application Shortcuts | Shows HFD shortcuts list. |
| About | Shows HFD about window. |

TOOLBARS










HFD has some toolbars that help users, to access **HFD** functionalities more rapidly. These toolbars are mobile. You can change their places in the screen or hide them.

Main Toolbar

| Press this button | To |
|---|--|
|  | Create a new OMR form. |
|  | Open an existing OMR form. |
|  | Save current active OMR form. |
|  | Go back to the previous job. |
|  | Cancel Undo |
|  | Cut the selected object(s) to clip board |
|  | Copy the selected object(s) to clip board |
|  | Paste contents of clipboard on the OMR form. |
|  | Delete the selected object(s) |
|  | Preview the form for print |
|  | Print the OMR form |




Important Note: Users can copy/paste items from one OMR form to others.

Align Toolbar

| | |
|---|---|
|  | Align the left side of selected object |
|  | Align the right side of selected object |
|  | Align the selected objects from top |
|  | Align the selected objects from bottom |
|  | Resize the selected objects to be the same size |
|  | Group the selected objects |
|  | Ungroup the selected objects |
|  | Lock the selected objects |
|  | Unlock the selected objects |


OMR Toolbar









Press this button To

| | |
|---|--|
|  | Shows/Hides the OMR grids, which shows the position of the OMR bubbles |
|  | Regenerate the timing marks, in front of the OMR objects |
|  | Switch to Timing Editor Mode |









View Toolbar

Press this button To

| | |
|---|--------------------|
|  | Show/Hide the grid |
|---|--------------------|

| | |
|---|---|
|  | Snap all objects on the form to grid |
|  | Show/Hide the margins |
|  | Zoom In the active form |
|  | Zoom Out the active form |
|  | Zoom the form to the size that all objects are visible without horizontal scrolling |
|  | Zoom the form to the size that all objects are visible without vertical scrolling |
|  | Zoom the form to the size that all objects are visible without scrolling |
|  | Display the form settings window |

Object Toolbox

| Press this button | To |
|---|----------------------------|
|  | Switch to the select tool |
|  | Select the Label tool |
|  | Select the Box tool |
|  | Select the Ellipse tool |
|  | Select the Line tool |
|  | Select the Picture tool |
|  | Select the Round Box tool |
|  | Select the OMR Object tool |

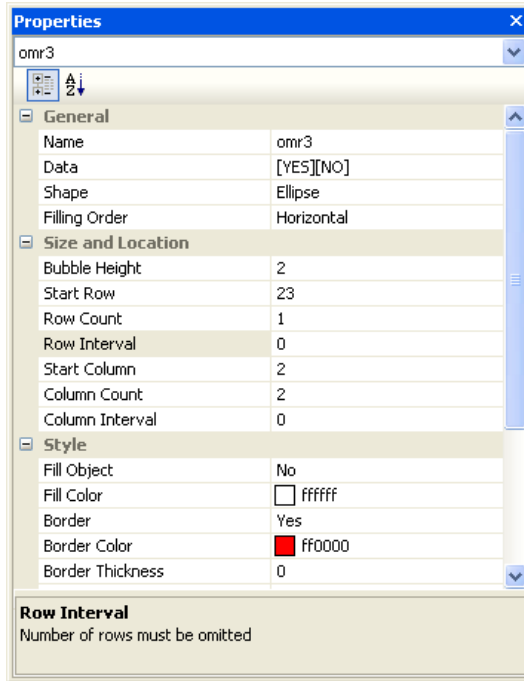
Items Tree View

Items tree view is a useful tool to access form main items quickly. Using Items tree view, user can select each item quickly and edit its properties in the property editor window.

Properties Editor

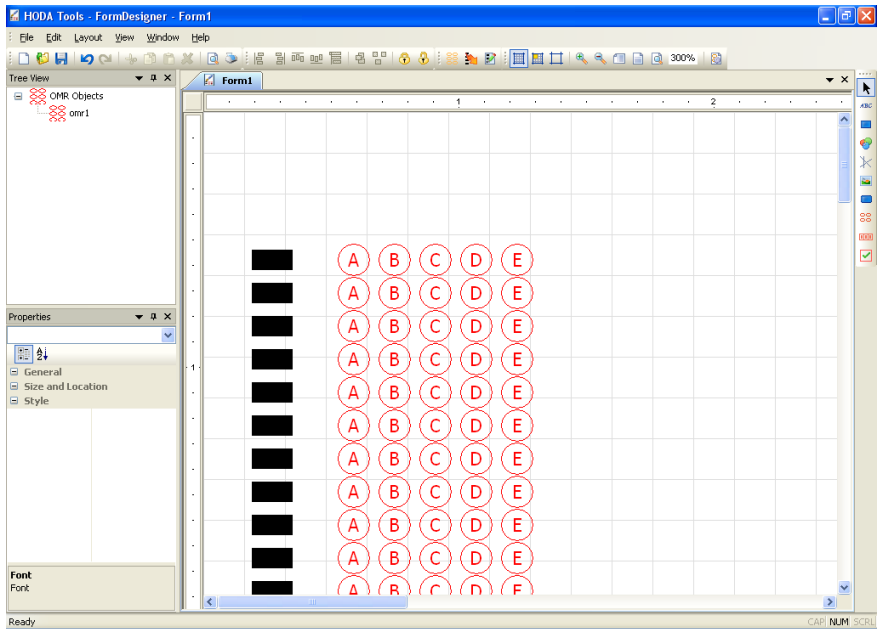
In **HFD** there is a properties box that shows the selected object's properties. Properties Editor is a user-friendly editing tool. You can edit each object's properties easily.

The object combo box at the top of the Properties Editor helps to choose the objects quickly from the drop-down list.



2 Designing an OMR Form

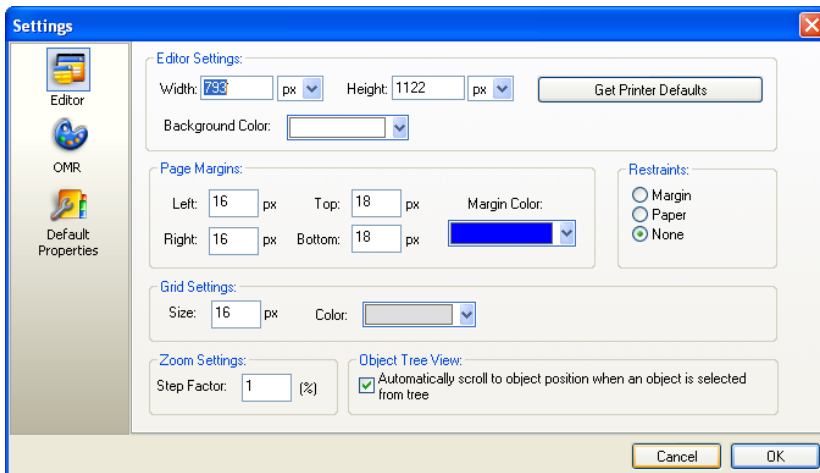
In the following picture you can see a blank OMR Form. In its body, you can write text, draw shapes and OMR bubbles, place images and design your form in the way you like by changing the form properties and settings. You can set the form properties in one of the following ways:



- Click settings button on the view toolbar
- Choose settings from Menu bar -> Layout -> settings
- Double click on the form

Editor

By default the Editor Settings panel displays first. You can change some general properties like page size, margins, grid size and zoom factor in this tab.



Editor Settings

The first group box is for changing the paper size and its background color. There are three options for setting paper size (pixels, inch and centimeter) that you can choose from the combo box and then set the forms width and height. *Back to Default* button changes the paper size to the default value (A4). You can change the forms background color by choosing it from the Background Color combo box.

Page Margins

The second group box relates to page margins. You can set your desired margins and its appearance color. Also you can set the restriction rules:

- Margin: means the objects can't place out side of the margins.
- Page: means that you can set the margins but there is no restriction to place objects.
- None: It makes the margins invisible and there is no restrictions to place objects.

Grid Settings

In this group box you can set the Grid size and its appearance color.

Zoom Settings

In this group box you can set the zoom steps.

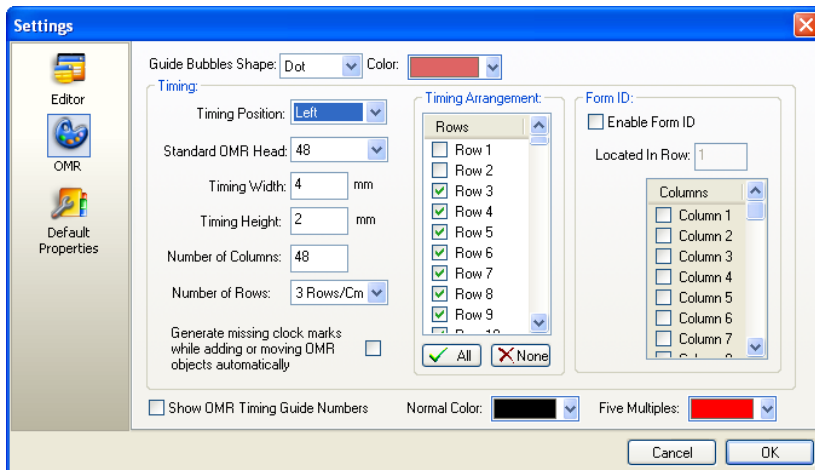
Object Tree View

If you check the corresponding check box, when you click on the object names

on the tree view, **HFD** scrolls to view the selected object, automatically.

OMR Settings

By clicking on the OMR button on the left panel in setting window the OMR Setting panel appears on the right side.



You can either change the bubble shape of the grid and its color by choosing the desired shape and color combo boxes.

The timing group box relates to the properties of the forms Timing Marks.

You can change the following properties in this group box:

- **Timing Position:** Timing Marks could be placed on the left, right, top or bottom of the form.
- **Standard OMR Head:** You can choose the standard OMR Head that is compatible with your OMR Machine.
- **Timing Width:** Sets the width of timing marks
- **Timing Height:** Sets the height of timing marks
- **Number of columns:** Sets the forms column number for drawing OMR objects
- **Number of Rows:** Sets the forms row number for drawing OMR objects
- **Generate missing clock marks while adding or moving OMR objects automatically:** If you check this check box, while you are drawing a OMR object timing marks places automatically in front of them
- **Show OMR Timing Guide Numbers:** if you check this box, **HFD** will show row number and column number guide lines.

In *Timing Arrangement* Group box you can set the timing marks visibility by checking the row number of the timing.

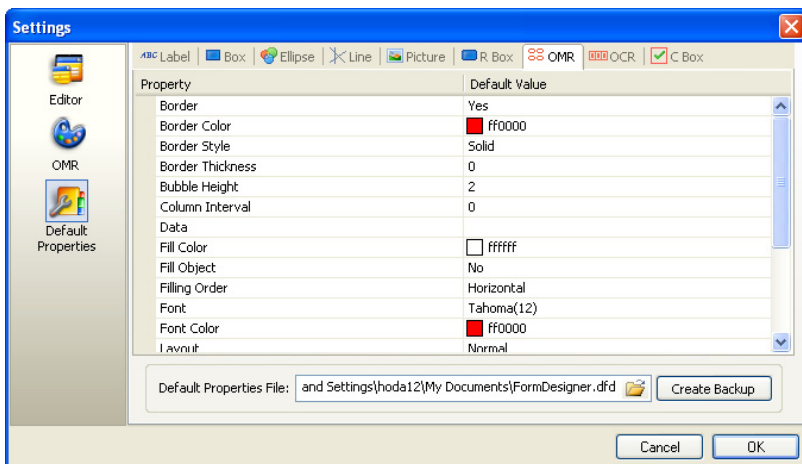
Important Note: You can use the corresponding tool to do clock marks arrangement, using Layout menu-> Timing Editor Mode command.

Form ID group box is useful when you want to have OMR Booklets. It means that you have two or more forms. Form ID helps the OMR Machine to recognize each forms template while reading them.

You can choose to mark columns by checking the desired column number.

Default Properties

By clicking on the Default Properties button on the left panel in setting window the Default Properties panel will be appeared on the right side.



You can set the default properties for all kind of objects and save them to be available always. For example you can define different color schemas for OMR objects and save them. Using this capability, you can restore the color themes and design different OMR forms with different colors.

Design an OMR Form

After you set the forms general properties, you can start to design the form. On each OMR form user can add these main objects:

- Label
- Box
- Ellipse
- Round Box
- Line
- Picture
- OMR Object

Label

To add Label:

- Click on the Label tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the label

Now you can change the properties of the label in the properties box

Label Properties

| Property | Description |
|-------------|---|
| Name | Each Label has a name that you can distinguish it from other labels on the form |
| Caption | You can write your desired text here |
| Left | The horizontal position of the label on the form |
| Top | The vertical position of the label on the form |
| Width | The width of the label |
| Height | The height of the label |
| Font | You can set the label font and font styles in a font dialog box |
| Orientation | If you want to rotate a label, you can change the orientation to rotated. The default angle is 90 but you can change the angle in the text angle property |
| Text Align | Sets the label alignment (Right- Center- Left) |
| Text Angle | You can set the rotation angle here |
| Bidi Mode | Sets the label bidi mode (Right to Left- Left to Right) |

Note: You can double click on the label to change its text property.

Box

To add Box:

- Click on the Box tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the box

Now you can change the properties of the box in the properties box

Box Properties

| Property | Description |
|------------------|---|
| Name | Each box has a name that you can distinguish it from other boxes on the form |
| Left | The horizontal position of the box on the form |
| Top | The vertical position of the box on the form |
| Width | The width of the box |
| Height | The height of the box |
| Fill Object | If you want to fill the box (fill color) you can change this property to Yes then set the fill color in next property |
| Fill Color | You can change the fill color here from a color dialog box |
| Border | This property sets if the box has a border or not |
| Border Color | You can change the border color here from a color dialog box |
| Border Thickness | You can change the border thickness here |
| Border Style | Sets the border style (Solid- Dashed- Dotted) |

Ellipse

To add Ellipse:

- Click on the Ellipse tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the ellipse

Now you can change the properties of the ellipse in the properties box

Ellipse Properties

| Property | Description |
|----------|--|
| Name | Each Ellipse has a name that you can distinguish it from other ellipse on the form |
| Left | The horizontal position of the ellipse on the form |

| | |
|------------------|---|
| Top | The vertical position of the ellipse on the form |
| Width | The width of the ellipse |
| Height | The height of the ellipse |
| Fill Object | If you want to fill the ellipse (fill color) you can change this property to Yes then set the fill color in next property |
| Fill Color | You can change the fill color here from a color dialog box |
| Border | This property Sets if the ellipse has a border or not |
| Border Color | You can change the border color here from a color dialog box |
| Border Thickness | You can change the border thickness here |
| Border Style | Sets the border style (Solid- Dashed- Dotted) |

Line

To add Line:

- Click on the Line tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the line

Now you can change the properties of the line in the properties box

Line Properties

| Property | Description |
|----------|---|
| Name | Each line has a name that you can distinguish it from other lines on the form |
| Left | The horizontal position of the line on the form |
| Top | The vertical position of the line on the form |
| Width | The width of the line |

| | |
|-----------|--|
| Height | The height of the line |
| Color | You can change the line color here from a color dialog box |
| Thickness | You can change the line thickness here |
| Style | Sets the line style (Solid- Dashed- Dotted) |

Picture

To add Picture:

- Click on the Line tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form

Now you can change the properties of the picture in the properties box

Picture Properties

| Property | Description |
|------------------|---|
| Name | Each picture has a name that you can distinguish it from other pictures on the form |
| Left | The horizontal position of the picture |
| Top | The vertical position of the picture |
| Width | The width of the picture |
| Height | The height of the picture |
| Border | This property sets if the picture has a border or not |
| Border Color | You can change the border color here from a color dialog box |
| Border Thickness | You can change the border thickness here |
| Border Style | Sets the border style (Solid- Dashed- Dotted) |

Note: You can double click on the picture to select an image file.

Round Box

To add Box:

- Click on the Round Box tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the round box

Now you can change the properties of the Round Box in the properties box

Round Box Properties

| Property | Description |
|------------------|---|
| Name | Each round box has a name that you can distinguish it from other round boxes on the form |
| Corner Radius | Sets the radius of the round corners |
| Left | The horizontal position of the round box on the form |
| Top | The vertical position of the round box on the form |
| Width | The width of the round box |
| Height | The height of the round box |
| Fill Object | If you want to fill the round box (fill color) you can change this property to Yes then set the fill color in next property |
| Fill Color | You can change the fill color here from a color dialog box |
| Border | you can set this property to draw a bordered for round box |
| Border Color | You can change the border color here from a color dialog box |
| Border Thickness | You can change the border thickness here |
| Border Style | you can set the border style (Solid- Dashed- Dotted) |

OMR Object

To add OMR Object:

- Click on the OMR Object tool in Toolbox
- Move mouse to the desired position on the OMR form
- Click on the form and draw the OMR Object

Now you can change the properties of the OMR Object in the properties box

OMR Object Properties

| Property | Description |
|-----------------|--|
| Name | Each OMR object has a name that you can distinguish it from other OMR objects on the form |
| Data | Sets the data that you want to show in the bubbles |
| Shape | Sets the shape of the bubbles (Ellipse- Circle-Rectangle- Square- Round Corner Rectangle-Round Corner Square- Six Dimensional Polygon-Six Dimensional Polygon (W=H)) |
| Filling Order | specified the fill order as horizontally or vertically |
| Bubble Height | Sets the height of the bubbles |
| Start Row | Sets the start row of the OMR object |
| Row Count | Sets the row number of OMR object |
| Row Interval | Sets the interval between rows of OMR object |
| Start Column | Sets the start column of the OMR object |
| Column Count | Sets the column number of OMR object |
| Column Interval | Sets the interval between columns of OMR object |
| Fill Object | If you want to fill in the bubbles (fill color) you can change this property to Yes then set the fill color in next property |
| Fill Color | You can change the fill color here from a color dialog box |

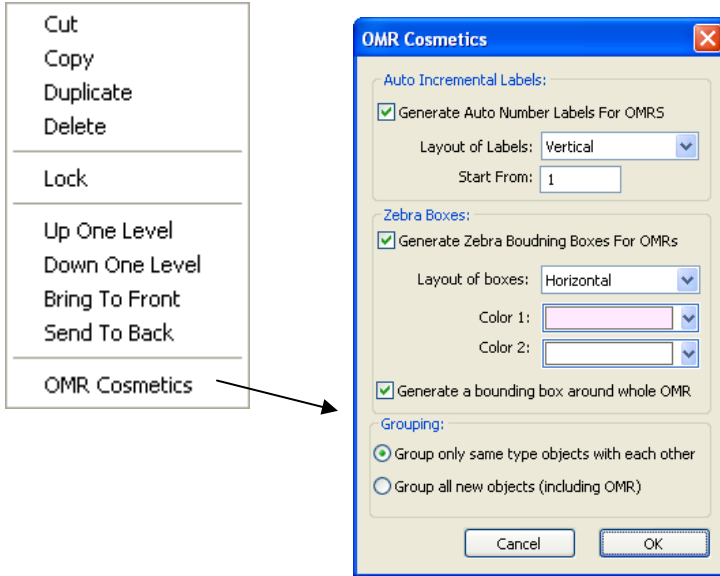
| | |
|------------------|---|
| Border | You can set this property if you want to draw a border for bubbles |
| Border Color | You can change the border color here from a color dialog box |
| Border Thickness | You can change the border thickness here |
| Border Style | Sets the border style (Solid- Dashed- Dotted) |
| Font | You can set the bubbles font and font styles in a font dialog box |
| Orientation | If you want to rotate a data in the bubbles, you can change the orientation to rotated. The default angle is 90 but |
| Text Angle | You can set the rotation angle here |
| Layout | Sets the direction of OMR data (Normal-Reverse) |

Tips and Tricks

There are some points that help you to design an OMR form in easier fashion:

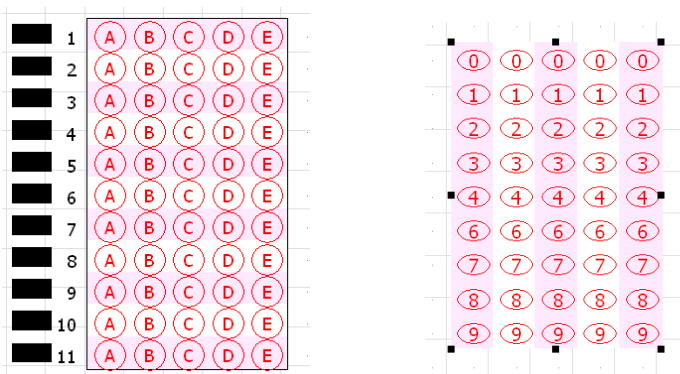
- After adding OMR Objects on the form you can rearrange the timing marks in this way:
Main Menu -> Layout -> Regenerate OMR Timings
- You can switch to Timing Editor Mode to activate or deactivate the timings marks on your forms. In Timing Editor Mode, click on each clock marks to enable or disable it. Click again on this command to switch to the design mode.
- You can move objects with arrow keys on the form.
- For resizing objects you can use Shift + Arrow Keys.
- For zooming you can use the mouse wheel.
- For selecting two or more objects use Ctrl + Click.
- Right click on each object to bring the fast access menu.
-

- You can right click on the OMR object and select OMR Cosmetics command to add sequence numbers and coloring the OMR object:

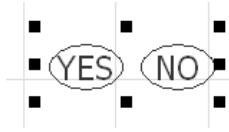


- To add sequence numbers to the OMR object, check the **Generate Auto Number Labels for OMRs** and specify the start number.
- To colorize the OMR background check the **Generate Zebra Bounding Boxes For OMRs** and specify the Color1, Color2 and direction of the boxes.

As a sample of this capability the following pictures show two generated OMR objects using these options:



- To add multiple characters as bubble data, you can enter them using '[' and ']' characters. For example entering [YES][NO] as data for an OMR object with 2 bubbles creates the following picture:



Notes:

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Expanding knowledge One BUBBLE at a time . . .

