



MapAble®

Visualize · Map · Collaborate

Manual: Visualisation

Version 2: April 2017

The information and instructions described below is subject to change and you should view our online manual that is periodically updated for up-to-date information (www.mapable.co.za/help).

Purpose of the module

This module is an advanced session on loading layers, visualisation and rendering in order to create maps that can be utilised in reports and alike.

Learning Objectives

After completing this module, you will achieve the following learning objectives:

- Introduction into - How to visualise your data in MapAble (Visualisation overview).
- Duplicating layers into your workspace.
- Single Point rendering.
- Unique Values rendering.
- Class breaks rendering.
- Labelling in MapAble.

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Data Visualisation

The data Visualisation Inputs dialog Box can be accessed by double clicking on a data layer in the [list of layers](#) or via the [Content>Edit](#) layer button. The Edit Layer function allows the user to customise the behaviour of a vector data layer.

Edit Layer

Layer Name: Gauteng land cover

File: SPDB:880

Type: Polygon

Search Field: ID

ToolTip Field: Class_Name

Icon: polyGreenFill.png

Legend: Select an image

Opacity (0-255): 100

Drawing Library: GDI

Preview:

Visualisation | Labels | Analysis | Info Box | Charts | Layer Description

Single Symbol | **Unique Values** | Class Breaks

Select Field: Class_Name

Values:

- bare
- cultivated
- low vegetation & grassland
- sports & golf
- tree dominated vegetation
- tree-bush dominated vegeta...
- water

Line Colour:

Fill Colour xx: FFCC99

Line Width: 1

Transparency: 0

Hatch Style: None

Hatch Bk Color: FFFFFFFF

Load:

OK Cancel Select Profiles Save Style Load Style

Main layer input fields

The Main Layer input field are a set of inputs that manages the layer's description, appearance in the list of layers as well as Search and Tooltip fields selection.

Label	Field	Value
1	Layer Name	Population Density (SP) 2001
2	File	SPDB:2822
3	Type	Polygon
4	Search Field	Density
5	ToolTip Field	Density
6	Icon	red2yellow2blue.png
7	Legend	Select an image
8	Opacity (0-255)	150
9	Drawing Order	Normal
10	Preview	[Color Bar]

1 Layer name Layer Name:

The user can give the specific layer an applicable name and edit it at any later stage.

2 File File:

The file name is an Administrative entry which indicate the layer's ID in the spatial database. The user cannot change it.

3 Type Type:

The file type is an Administrative entry which indicate the layer's spatial type in the spatial database. The user cannot change it.

4 Search field Search Field:

The user can add a search field if he/she wants to use this layer as a [searchable layer](#) to navigate with or run [spatial reports](#) from it.

5 Tooltip ToolTip Field:

The Tooltip function is a tool which when setup correctly, will show the text of a selected column in the attribute table at the mouse point when the user hover over an area. It typically looks like this:



Please note: Only use this tool with layers with unique values per entity

Not all layers or their attributes is to be regarded as searchable. An example of a good searchable layer is Towns. Each town is represented by a single point entity and once it is selected in the search box, it will zoom to that specific entity. An example of layer that is not regarded as searchable is Geology. There are many polygons in the set with the same attribute. One cannot search and zoom to more than one polygon at once. Thus, same layer will be unsuitable and illogical to be used with this function.

The user

can set the Tooltip by selecting the appropriate attribute column in the dropdown list:

ToolTip Field:	MUNICNAME
Icon:	ID
Legend:	PROVINCE
Opacity (0-255):	CATEGORY
Drawing Library:	CAT2
Preview:	CAT_B
	MUNICNAME
	MAP_TITLE
	DISTRICT
	AREA
	Shape_Leng
	Shape_Area
Line Colour:	MapNo
Fill Colour xx:	MUN_CD

The selected field will now appear in the Tooltip field:

Type:	Polygon
Search Field:	MUNICNAME
ToolTip Field:	MUNICNAME
Icon:	polyGreyThin.png

6 Icon

The icon is the image that will appear left of the layer name in the list of layers. The user can add any icon of his/her choice. The only requirement is that it should preferably be at a size 16x16 pixels or smaller to appear correctly in the legend.

MapAble Icon Set:



To assist users, MapAble has a set of icons which can be used by all users. Please go to the [MapAble website](#) and download it.

7 Legend

The [Legend](#) is normally automatically generated for all vector images. In the case of graphics and layers derived from WMS services, a legend file can be uploaded to the server. This will always have to be in PNG graphic format. The suggested size is 270x270 pixels.

8 Opacity

The Opacity for the layer can be set at two places in MapAble. This opacity tool in the Main Layer Input Box can be used to set the global opacity of the layer. Some individual items can be set in the [Thematic visualisation toolbox](#).

The opacity is measured in an index of 0 - 255 of which 0 = none opacity (fully transparent) and 255 = full

9 Drawing Order

The Drawing Order refers to the way MapAble renders polygons and polylines. The Drawing Order is important in the construction of maps where the user wants certain layers to be displayed above others such as place names above certain polygons. A layer can either be positioned the top or bottom most or normal which means the layer order in the layer list.

Normal	▼
Top Most	
Normal	
Bottom Most	

10

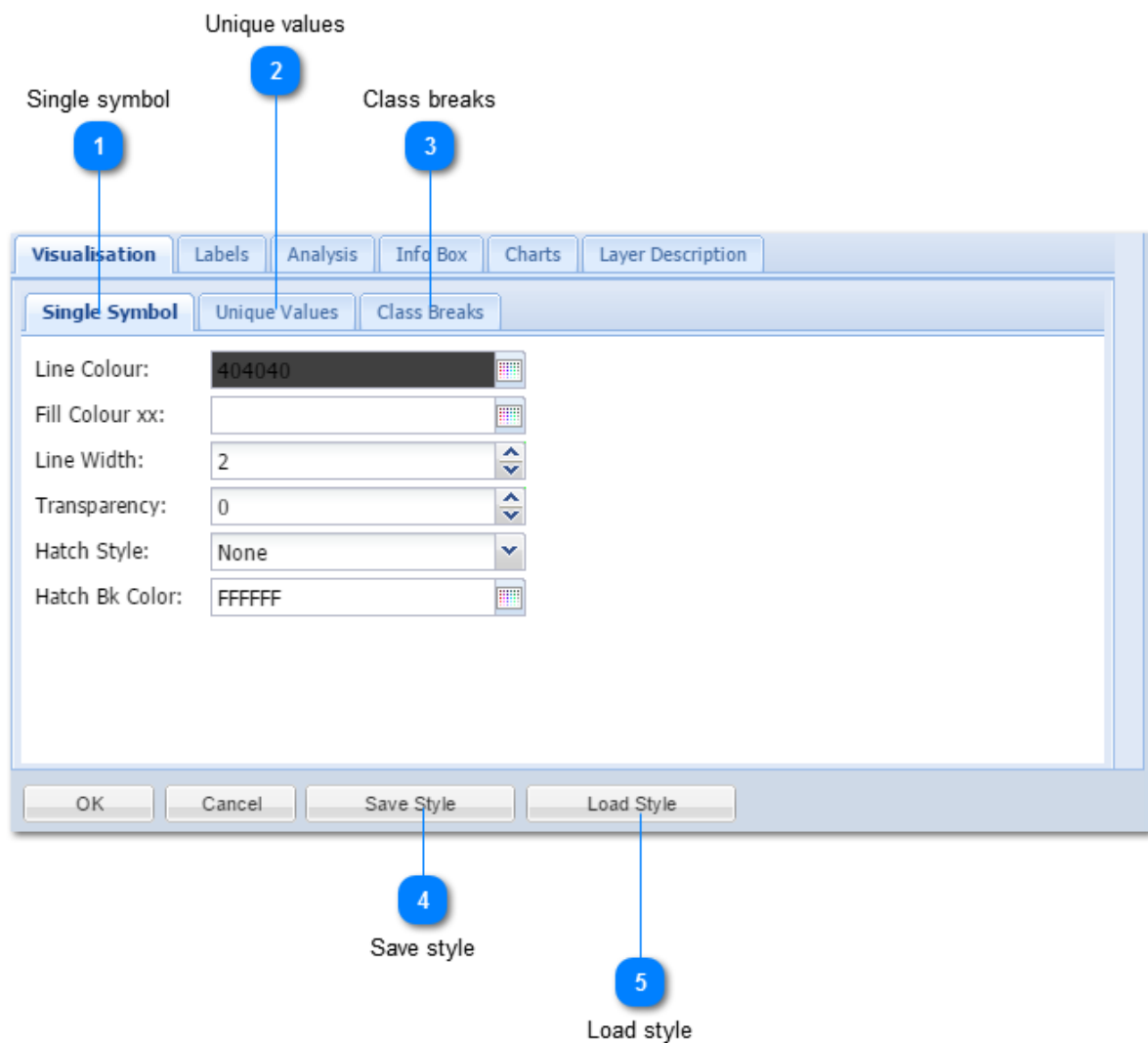
Icon Preview

Preview:



The [Icon](#) Preview shows how the selected Icon will look like in the List of Layers.

Thematic Visualisation



Thematic visualisation is the way in which a data layer is displayed on a map. There are many ways of visualisation. MapAble offers the user three different ways of displaying data in the [View Pane](#).

1


Single symbol

Single Symbol

The Single Symbol is the simplest way of displaying a layer. Only one foreground color and one outline color are used to display a layer. Different toolsets are available for different polygon types. The following tools will assist the user to prepare a single symbol layer:

Polygons


Line colour

The line colour refers to the outline of polygons. Click on the  button to get colour options or type in any HEX color code of choice

Fill colour:

The fill colour is the colour of the body of the polygon. Click on the  button to get colour options or type in any HEX color code of choice

Line width:

The outline width can be set by using the arrows .


Transparency:

The Transparency can be set from 0 to 255 of which 0 = No Transparency

Hatch style:


MapAble offers the user a range of Hatching styles. Click on the dropdown button to view all styles.

Hatch background colour:


The hatching color can be set here. Click on the  button to get colour options or type in any HEX color code of choice

Polylines

Line colour

Click on the  button to get colour options or type in any HEX color code of choice

Line width:

The line width can be set by using the arrows .


Transparency:

The Transparency can be set from 0 to 255 of which 0 = No Transparency

Line Border

An additional line border can be set in the tickbox to mask the line for better readability.

Border colour:

The line border colour can be set here. Click on the  button to get colour options or type in any HEX color code of choice

Points

Icon

This is the icon to be displayed on the map. This will normally be the same as the Icon in the [menu item](#). Choose an appropriate icon and upload it to the server. To assist users, MapAble has a set of icons which can be used by all users. Please go to the [MapAble website](#) and download it.

Icon width and height:

This gets automatically filled in when the icon is uploaded. The user can however change the size to make it smaller. It is not ideal to make it larger because the icon image will pixelate and result in a poor map.

Icon anchors X & Y:

This is the position where the icon will anchor relative to the centre of the spatial point. This is normally set to be the centre of the image, but can be changed if necessary. The centre position is normally the middle of the width and height number

Icon shadow:

A shadow can be set for each icon by ticking the tickbox.

Cluster points:

If a point layer causes a map to be too busy, they can be displayed as cluster points instead. Cluster point shows a group of spatially clustering points as a single point with a colour code.

Preview:

This shows how the icon will be displayed on the map.

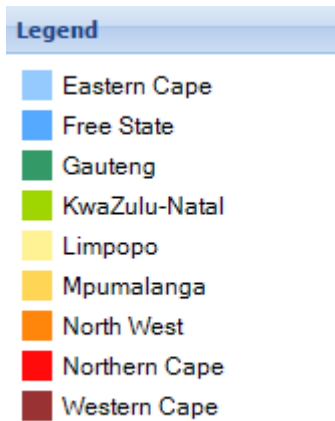
2

Unique values

Unique Values

Unique values are applied when data layers have several explicit classes (e.g. Province names, Geological types). Different toolsets are available for different polygon types. The following tools will assist the user to prepare a unique value layer:

Polygons



Single Symbol **Unique Values** Class Breaks

Select Field: PROVINAME

Values:

- Eastern Cape
- Free State
- Gauteng
- KwaZulu-Natal
- Limpopo
- Mpumalanga
- North West

Line Colour: FFFFFFFF

Fill Colour xx: 95CAFF

Line Width: 1

Transparency: 0

Hatch Style: None

Hatch Bk Color: FFFFFFFF

Load: Load Palette


Select field

The user need to select a field in the attribute table where the unique values reside. Click on the dropdown box to choose.


Values:

The list of unique values will be displayed in the list box after the field was selected.


Line colour

The line colour refers to the outline of polygons. Click on the  button to get colour options or type in any HEX color code of choice

Fill colour:

The fill colour is the colour of the body of the polygon. Click on the  button to get colour options or type in any HEX color code of choice

Line width:

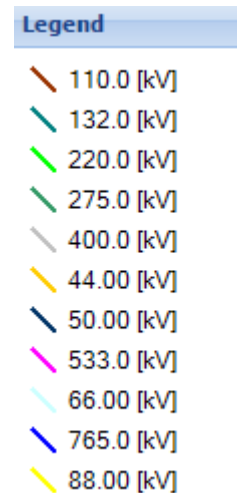
The outline width can be set by using the arrows .

Transparency:

The Transparency can be set from 0 to 255 of which 0 = No Transparency

Hatch style:

Polylines



Single Symbol **Unique Values** Class Breaks

Select Field: voltage

Values:

- 110.0 [kV]
- 132.0 [kV]
- 220.0 [kV]
- 275.0 [kV]
- 400.0 [kV]
- 44.00 [kV]
- 50.00 [kV]

Line Colour: 00FF00

Line Width: 2

Transparency: 0

Line Border: ☐

Border Colour: 000000


Select field

The user need to select a field in the attribute table where the unique values reside. Click on the dropdown box to choose.


Values:

The list of unique values will be displayed in the list box after the field was selected.

Line colour

Click on the  button to get colour options or type in any HEX color code of choice

Line width:

The line width can be set by using the arrows .


Transparency:

The Transparency can be set from 0 to 255 of which 0 = No Transparency

Line Border


An additional line border can be set in the tickbox to mask the line for better readability.

Border colour:

The line border colour can be set here. Click on the  button to get colour options or type in any HEX color code of choice

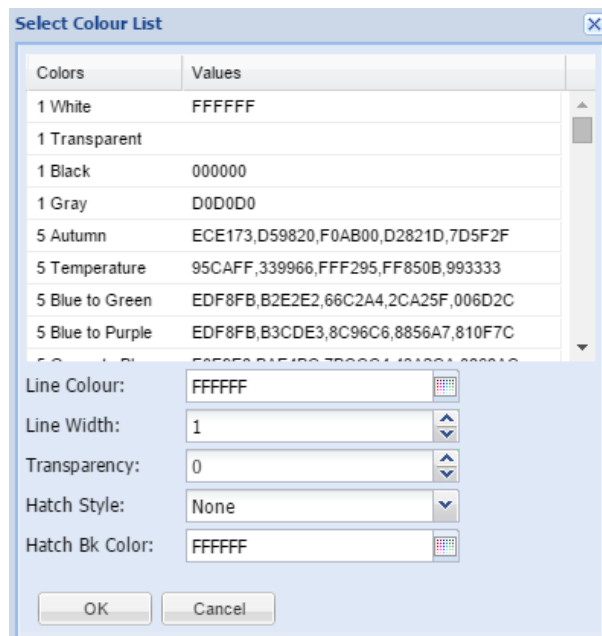
MapAble offers the user a range of Hatching styles. Click on the dropdown button to view all styles.

Hatch background colour:

The hatching color can be set here. Click on the  button to get colour options or type in any HEX color code of choice

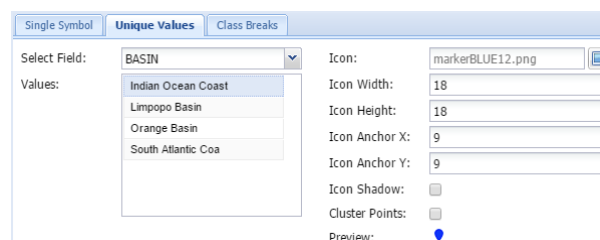
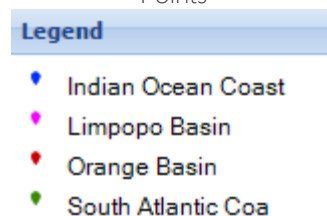
Load Palette:

Predefined colour palettes can be loaded from here to automatically do the colours of all the unique values. The user click on the Load Palette button to open a list box to choose from:



From here the outline can also be customised.

Points



Select field

The user need to select a field in the attribute table where the unique values reside. Click on the dropdown box to choose.

Values:

The list of unique values will be displayed in the list box after the field was selected.

Icon

This is the icon to be displayed on the map. This will normally be the same as the Icon in the [menu item](#). Choose an appropriate icon and upload it to the server. To assist users, MapAble has a set of icons which can be used by all users. Please go to the [MapAble website](#) and download it.

Icon width and height:

This gets automatically filled in when the icon is uploaded. The user can however change the size to make it smaller. It is not ideal to make it larger because the icon image will pixelate and result in a poor map.

Icon anchors X & Y:

This is the position where the icon will anchor relative to the centre of the spatial point. This is normally set to be the centre of the image, but can be changed if necessary. The centre position is normally the middle of the width and height number

Icon shadow:

A shadow can be set for each icon by ticking the tickbox.

Cluster points:

If a point layer causes a map to be too busy, they can be displayed as cluster points instead. Cluster point shows a group of spatially clustering points as a single point with a colour code.


















Preview:

This shows how the icon will be displayed on the map.



When mapping quantities (numeric values), it is normally better to classify them in classes. When you classify your data, you can use two standard classification methods provided in MapAble, or you can manually define your own custom class ranges. This topic describes these classification methods:

Polygons and Polylines


Legend	Legend
 251,526 - 4736,09775	 0,424853 - 125,930443
 4736,09775 - 9220,6695	 126,732857 - 1188,20459
 9220,6695 - 13705,24125	 1190 - 3078,717041
 13705,24125 - 18189,813	 3079,863525 - 5425,068359
 18189,813 - 22674,38475	 5425,524902 - 8924,357422
 22674,38475 - 27158,9565	 8931,006836 - 15274,832031
 27158,9565 - 31643,52825	 15302,363281 - 28604,365234
 31643,52825 - 36128,1	 28638,021484 - 518535,625
	

From	To	Colour
251.526	4736.09775	95CAFF
4736.09775	9220.6695	55AAFF
9220.6695	13705.24125	339966
13705.24125	18189.813	9FD500
18189.813	22674.38475	FFF295
22674.38475	27158.9565	FFD555
27158.9565	31643.52825	FF850B

Select field:

The user need to select a field in the attribute table where the unique values reside. Click on the dropdown box to choose.

Border colour:

The border colour refers to the outline of polygons. Click on the  button to get colour options or type in any HEX color code of choice

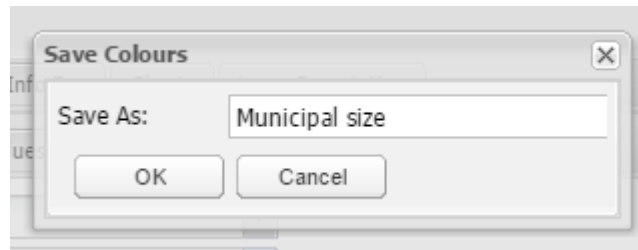
Calculate:

To calculate the classes the user clicks first on the Calculate Button. The following screen will appear:

The user selects the number of classes, the method between Linear (Equal intervals) and Quantiles, and the start and end colours of choice. The user can still manually edit the colours from the Values display.

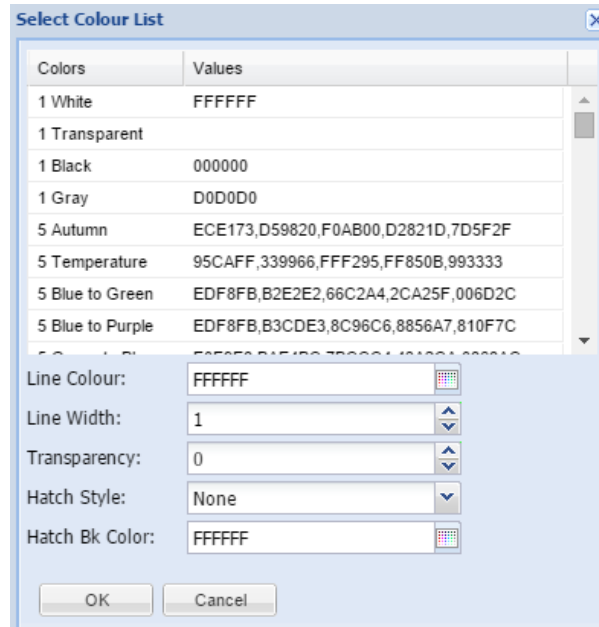
Save colours:

The user can save a colour set by using the save colours button. The following input box will appear:



Load colours:

All save colour palettes can be loaded afterwards by using the load colours button from where a list of colours palettes will be shown

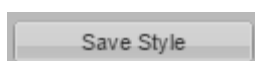


Values:

The final legend values and colours can be viewed in the values box. The user can still edit the colours as well as the values from the Values box itself.

4

Save style

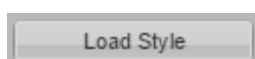


A style is a file that remembers all the visualisation settings of a particular layer. The user can save the style with an appropriate descriptive name:

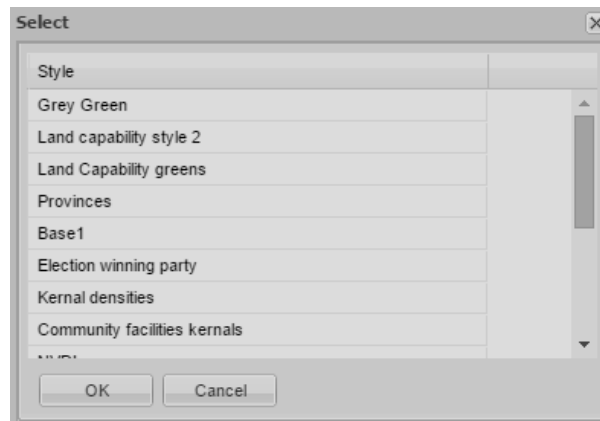


5

Load style



A saved style can always be opened for later use by opening the Load style button:



The user can select the style and the layer's visualisation setting will change accordingly.



Please note:

A saved style can only be re-applied to the same layer. All the saved settings are only applicable to the structure of the specific layer it was built upon.

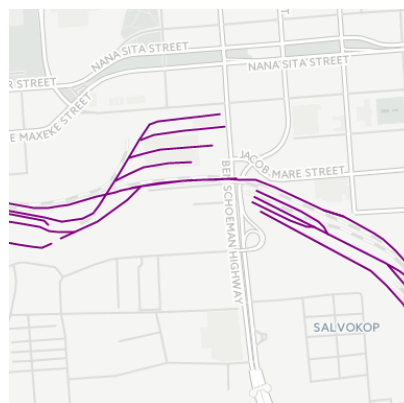
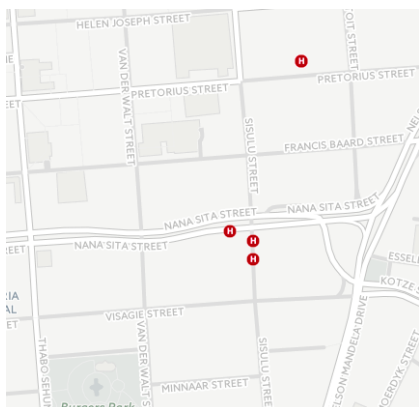
Examples of point/polyline/polygon in terms of single symbol, unique value and class break visualisation:

Point

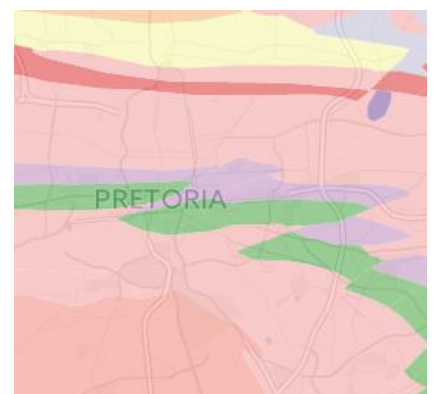
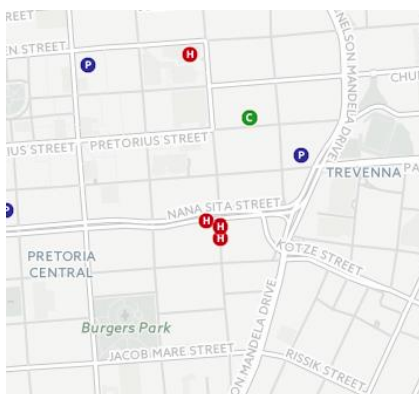
Polyline/Line

Polygon/Area

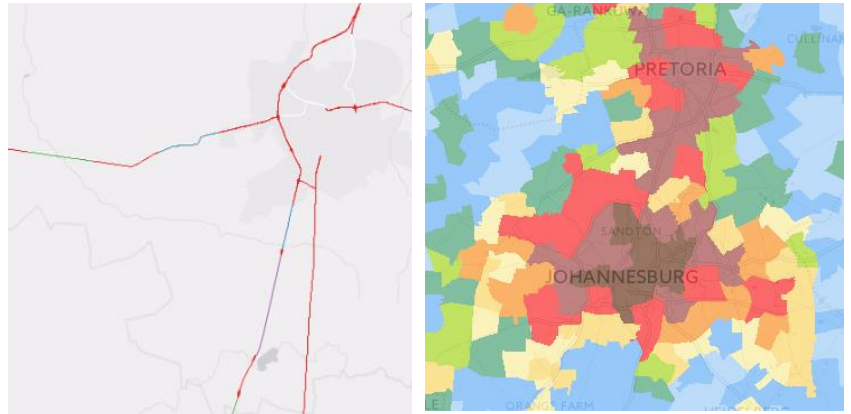
Single Symbol



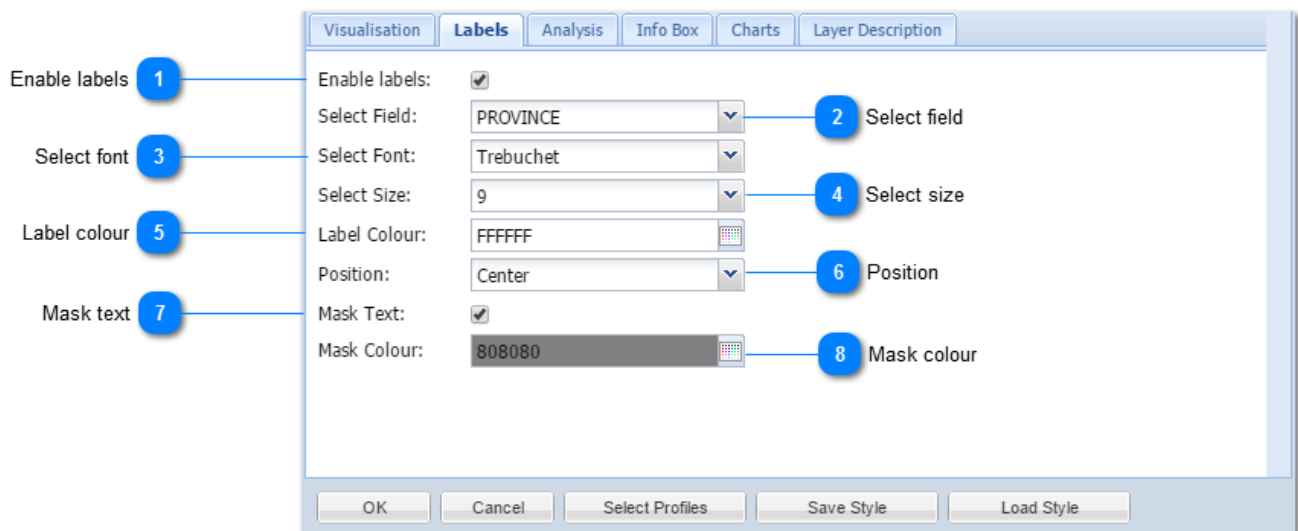
Unique Value



Point data layers cannot be visualised using the Class Breaks Visualisation feature



Labeling



MapAble offer the user a range of tools to add and customise Labels of layers in the map. The following section will describe these labeling tools:



The enable labels button needs to be ticked if the user want to label the layer. This is very handy to tick on and of when labels start to clutter maps.



The user need to select the specific column in the attribute table which the labels will be retrieved from. When clicking on the drop-down list, the desired column can be selected.

3 Select font

MapAble offers the user a selection of fonts to use for labeling. The following fonts are available:

- Arial
- Arial Black
- sans-serif
- Comic Sans
- Courier New
- Georgia1
- Impact
- Lucida Console
- Palatino Linotype
- Tahoma
- Times New Roman
- Times
- Trebuchet
- Verdana

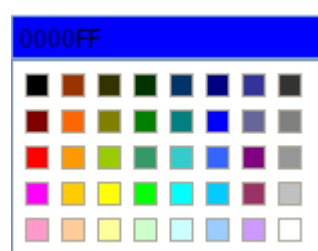
4 Select size

The size of the font can be selected from a drop-down list.

5 Label colour

Click on the  button to get colour options or type in any HEX color code of choice.

The default colour palette looks like this:



6 Position

The position relative to the layer entity can be set here. This is mostly applicable to point layers. The Position drop down list looks like this:

- Above Left
- Above
- Above right
- Left
- Center
- Right
- Below Left
- Below
- Below right

7

Mask text

Mask Text:

☐

A mask is a little halo that can be placed around the text to make it a bit more accentuated.

A non-masked label looks like this:

Sekhukhune

A masked label looks like this:

Sekhukhune

8

Mask colour

Mask Colour:

808080

The mask colour of choice can be set here. Click on the  button to get colour options or type in any HEX color code of choice.