

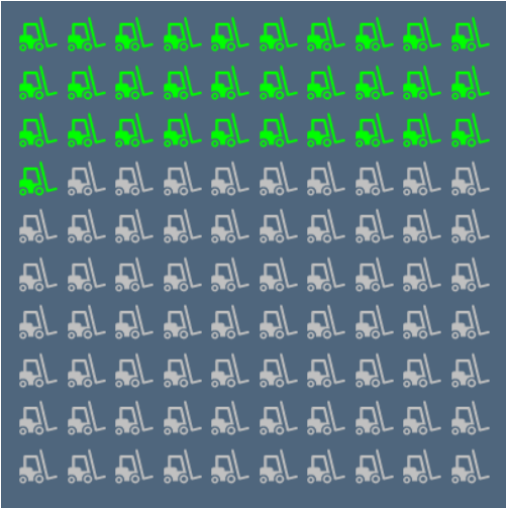
BI Version	Reporting Type	Visualization Type	Difficulty Level
IBM Cognos Analytics 11	Standard or Active Report	Pictograph	Intermediate
Associated Sample: None Sample Data: GO data warehouse (query) Visualization Name: Not applicable			


TIP 1: ADD A PICTOGRAPH

Explore Repeater Tables, SQL, Queries, Joins, Conditional Styles, and Images within your reports.

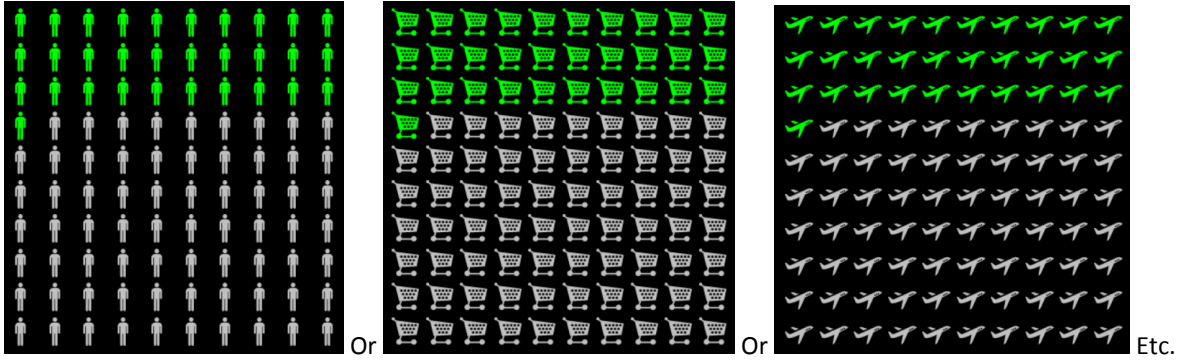
Here is a quick tutorial on how to add a Pictograph to an Active or Standard Report in IBM Cognos Analytics 11. A pictograph is used to show percentage data with images. Pictographs are very common today in Infographics.

In the example below, 31% of all revenue came from the Outdoors Shop, so a Pictograph of this data would highlight 31 out of the 100 forklifts:



The image that we are using (inf1_forklift_32.png ) is essentially a mask. The background is a solid color (#4F667D) and the shape itself of the forklift is hollow (transparent) so that it accepts the conditional styling color from underneath. **TIP:** Any other equivalent image could have been used, and you will find a sample library of fifty-five 32x32 PNG images with black and white backgrounds here:

```
<install directory>\webcontent\bi\samples\images\common\transparent
```

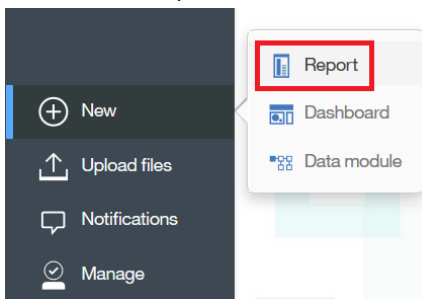


There are currently no Charts or Visualizations to achieve this, so in Cognos Analytics we will instead use SQL, four queries, and a repeater table with conditional styling. First we will make the queries. Then we will build the repeater table. Finally, we will establish the conditional styling.

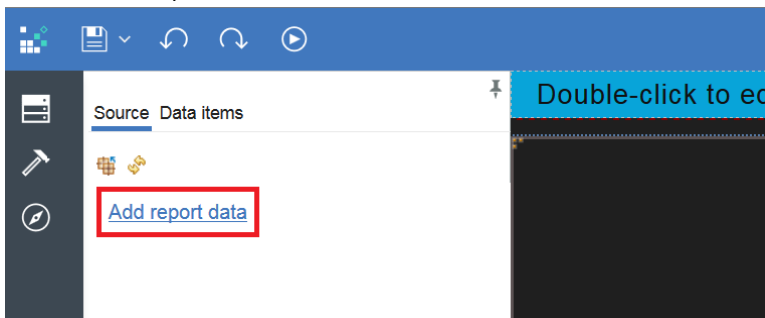
Now we would like to show you how we created the Pictograph...

STEP-BY-STEP




1. Create a new report:




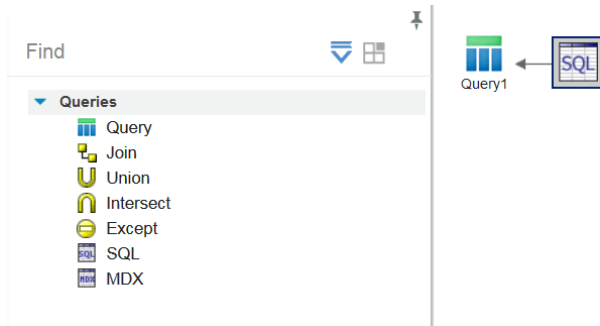
2. In the resulting *Templates and Themes* dialog, select the *1 column active report* template and the *Dark blue* theme and click OK.
3. Click the *Add report data* link:





4. Navigate to Team content | Samples | Models. Select the *GO data Warehouse (query)* package and click *Open*.

5. Click the *Navigate* icon , click the *Query Explorer* tab , and select the *Queries* folder  *Queries*. The right section of your screen will be blank because we haven't created any queries yet.

6. The first thing that we need to do is create 100 placeholder items using SQL. Click the *Toolbox* icon , select the *SQL* object, and drag it onto the Query Explorer. Your screen will now look like this:



7. Select the *SQL* object , click the *Properties* icon , and set the following parameters:
- SQL syntax: IBM Cognos
 - Data source: great_outdoors_sales
 - SQL:

```

Select
*
From (
values
        ( cast(1 as integer ) ),
        (2),
        (3),
        (4),
        (5),
        (6),
        (7),
        (8),
        (9),
        (10),
        (11),
        (12),
        (13),
        (14),
        (15),
        (16),
        (17),
        (18),
        (19),
        (20),
        (21),
        (22),
        (23),
        (24),
        (25),
        (26),
        (27),
        (28),
        (29),
        (30),
        (31),
        (32),
        (33),
        (34),
        (35),
        (36),
        (37),
        (38),
        (39),
        (40),
        (41),
        (42),

```

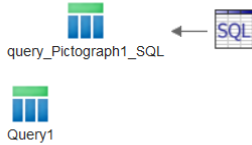
(43),
(44),
(45),
(46),
(47),
(48),
(49),
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(91),
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(94),
(95),
(96),
(97),
(98),
(99),
(100)


)
cellTable (numberOfCells)




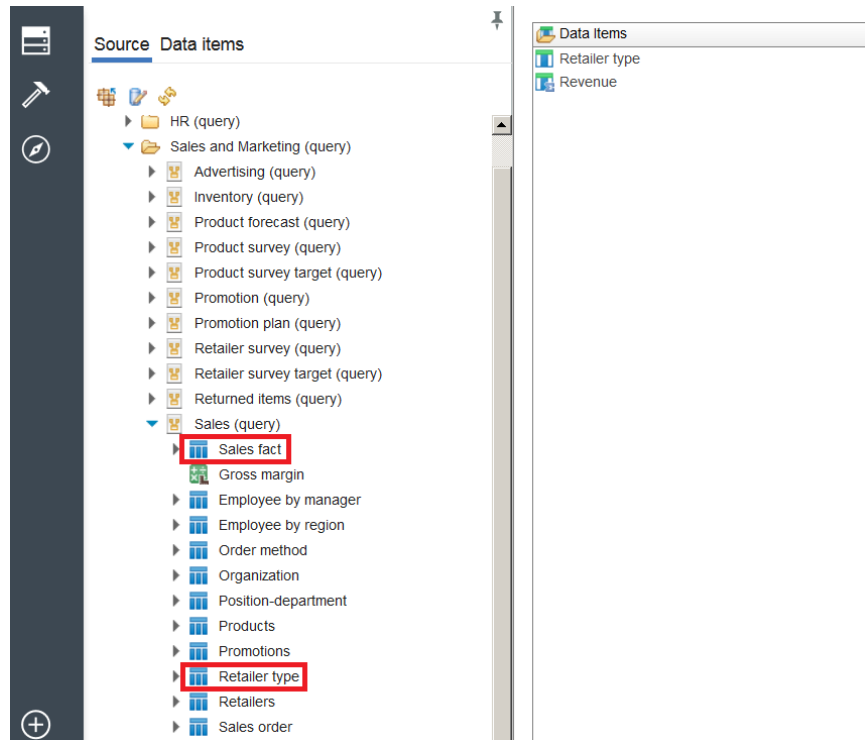
8. Select the *Query1* object and set the following properties:
 - a. Name: query_Pictograph1_SQL

9. Now we need to build a query that will contain the total for our measure. In the Toolbox, select the *Query* object and drag it onto the Query Explorer. Your screen will now look like this:







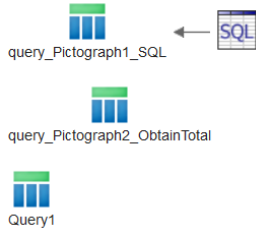
10. Select the *Query1* object  and set the following properties:
 - a. Name: query_Pictograph2_ObtainTotal
11. Now we need to add some data items to this new query. Double-click the query to view its contents. Everything will be empty now.


12. Click the *Data* icon . Scroll down the tree and:
 - a. Open *Sales and Marketing (query)*
 - b. Open *Sales (query)*
 - c. Open *Retailer type*
 - d. Drag *Retailer type* and drop it in the *Data Items* box
 - e. Scroll up a bit and open *Sales fact*
 - f. Drag *Revenue* and drop it in the *Data Items* box
 - g. Your report should look like this:

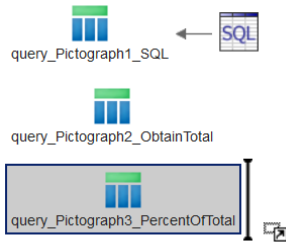


13. Select *Revenue* in the *Data Items* box and set the following properties:
 - a. Expression: `[Sales (query)].[Sales fact].[Revenue] / total([Sales (query)].[Sales fact].[Revenue] for report)`
 - b. **NOTE:** We can't just use straight *Revenue* here. If we don't divide each item by the total for the whole report, our values will be too high.

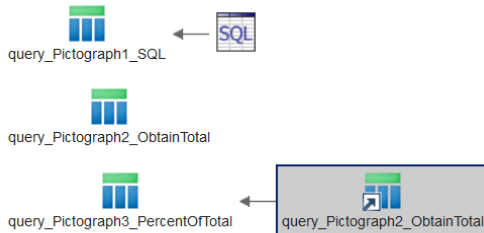
14. Click the *Navigate* icon , click the *Query Explorer* tab , and click the *Queries* folder  *Queries* .
15. Now we need to build a query that will contain the % of the total for our measure. Click the *Toolbox* icon , select the *Query* object, and drag it onto the Query Explorer. Your screen will look like this:


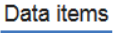


16. Select the *Query1* object  and set the following properties:
- Name: query_Pictograph3_PercentOfTotal
17. In the Query Explorer, select *query_PictoChart2_ObtainTotal* and drag it to the right of *query_PictoChart3_PercentOfTotal* until you see a vertical bar like this:

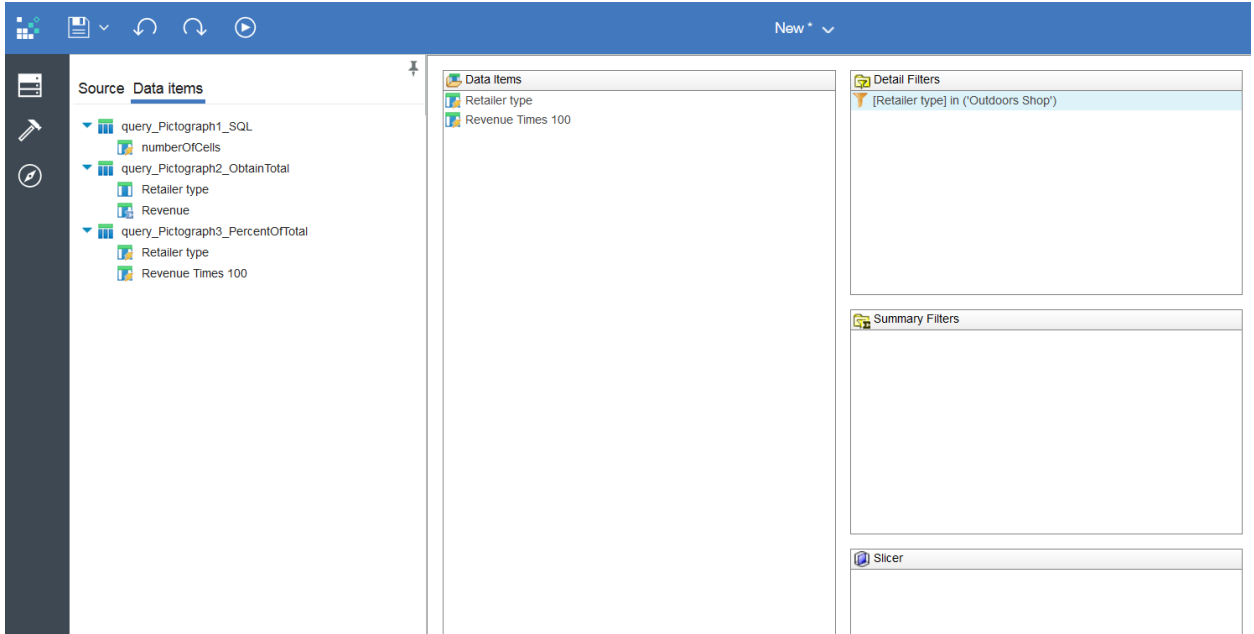


Drop it there, creating this result:




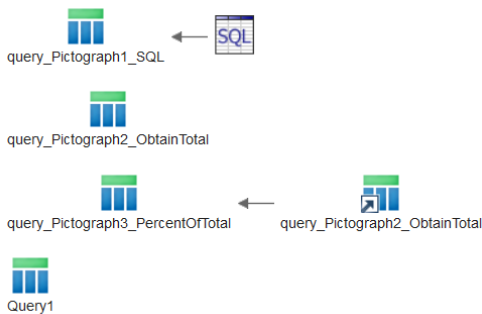
18. Double-click the query called *query_Pictograph3_PercentOfTotal* to see its contents. It will be empty.
19. Click the *Data* icon , click the *Data items* tab  *Data items* , and:
- Select *Retailer type* (from *query_Pictograph2_ObtainTotal*) and drag it into the *Data Items* box
 - Select *Revenue* (from *query_Pictograph2_ObtainTotal*) and drag it into the *Data Items* box
20. Select *Revenue* in the *Data Items* box and set the following properties:
- Name: Revenue Times 100
 - Expression: [query_Pictograph2_ObtainTotal].[Revenue] * 100

- c. **NOTE:** Multiplying by 100 will give us the correct numbers as percentages.
21. We need to set a filter here so that the total is for a single retailer rather than all retailers. To do that we drag *Retailer type* from the *Data Items* box and drop it in the *Detail Filters* box. In the resulting Expression dialog, enter [Retailer type] in ('Outdoors Shop') in the *Expression Definition* box and click *OK*. The whole query now looks like this:




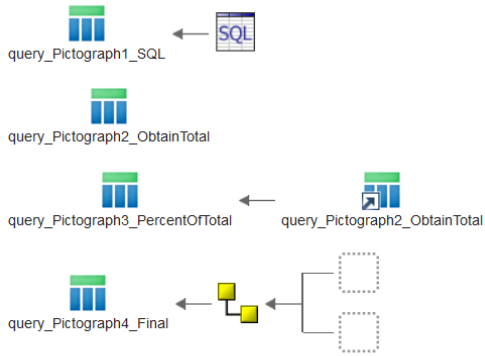
22. Click the *Navigate* icon , click the *Query Explorer* tab , and click the *Queries* folder .

23. Click the *Toolbox* icon , select the *Query* object, and drag it onto the Query Explorer. Your screen will look like this:

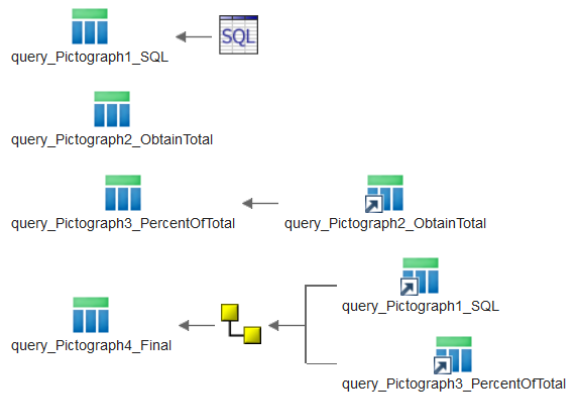



24. Select the *Query1* object  and set the following properties:
- Name: query_Pictograph4_Final

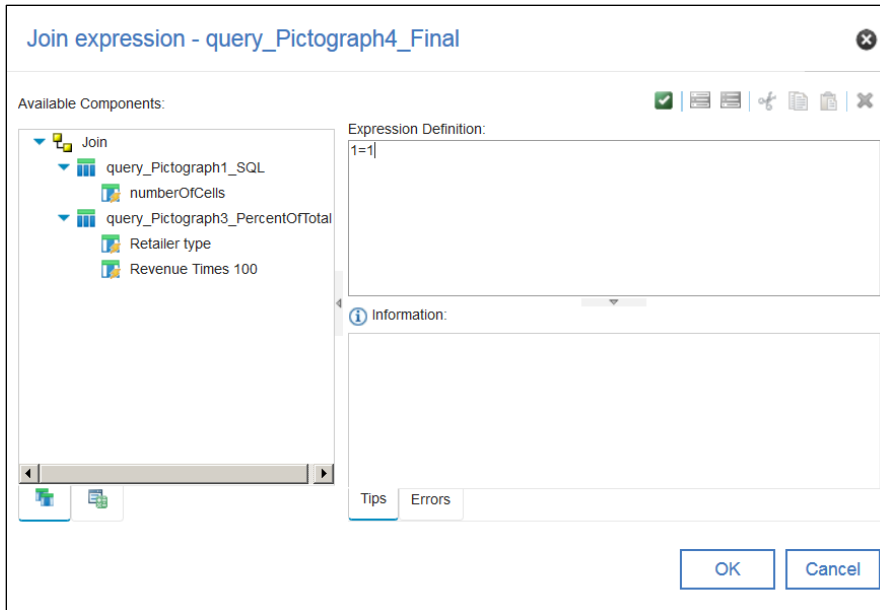
25. Select the *Join* object  **Join** in the Toolbox and drag it to the right of *query_Pictograph4_Final*, like this:







26. Drag *query_Pictograph1_SQL* and drop it in the upper empty box. Drag *query_Pictograph3_PercentOfTotal* and drop it in the lower empty box:



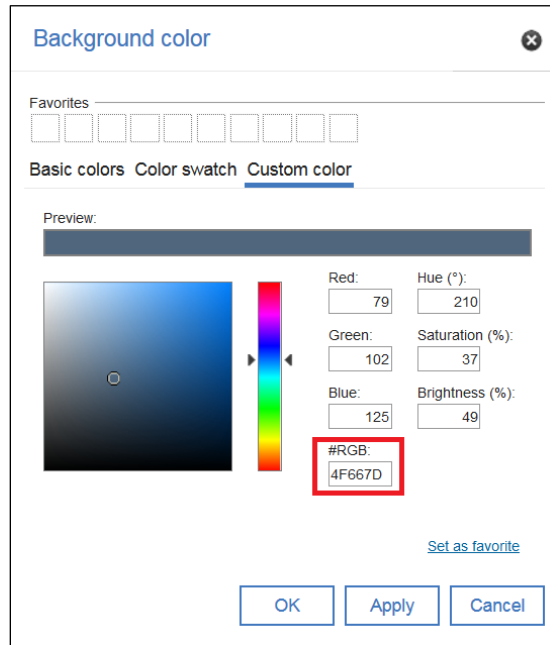
27. Double-click the *Join* icon , click the *Convert to expression...* button, and type $1=1$ in the *Expression Definition* box. Click *OK*.




NOTE: Using the expression `1=1` tells the join to join every record.

28. Double-click the query called *query_Pictograph4_Final* to see its contents. It will be empty.
29. Click the *Data* icon , click the *Data items* tab Data items, and:
 - a. Select *Retailer type* (from *query_Pictograph3_PercentOfTotal*) and drag it into the *Data Items* box
 - b. Select *Revenue Times 100* (from *query_Pictograph3_PercentOfTotal*) and drag it into the *Data Items* box
 - c. Select *numberOfCells* (from *query_Pictograph1_SQL*) and drag it into the *Data Items* box
30. Select *numberOfCells* in the *Data Items* box and set the following properties:
 - a. Pre-sort: Sort Ascending
31. The queries are finished! Now we will build the report itself. Click the *Navigate* icon , click the *Page Explorer* tab , and click  *Page1*.
32. Select the main table cell of the report and set the following properties:

- a. Background color: 4F667D

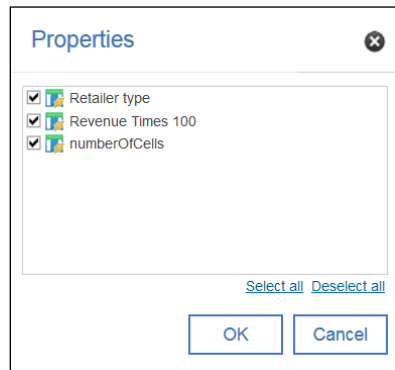


- b. Horizontal alignment: Center
- c. Vertical alignment: Top
- d. **TIP:** It is a good idea to set the background color of the container table cell to the background color of the image that you are using.

33. Click the *Toolbox* icon , scroll down to the *Data Container* section, and drag a *Repeater Table* onto the report. In the resulting dialog, set the *Query Name* to *query_Pictograph4_Final* and click *OK*.

34. With the *Repeater Table* selected, set the following properties:

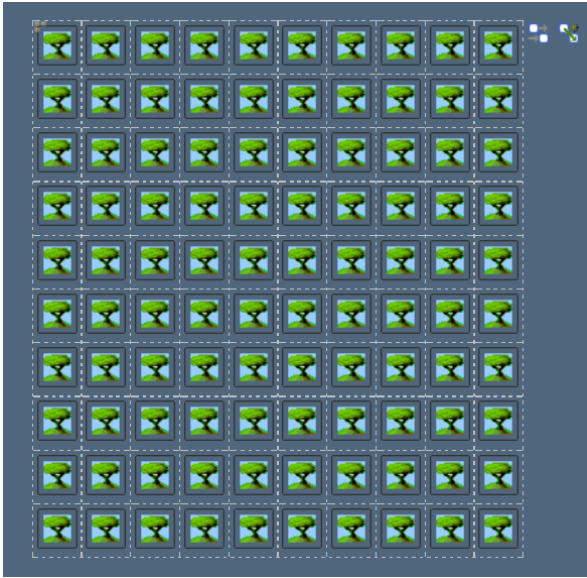
- a. Across: 10
- b. Down: 10
- c. Show hover: No
- d. Properties: click the ellipsis button and select all of the following:



35. Select the *Repeater Table Cell* and set the following properties:

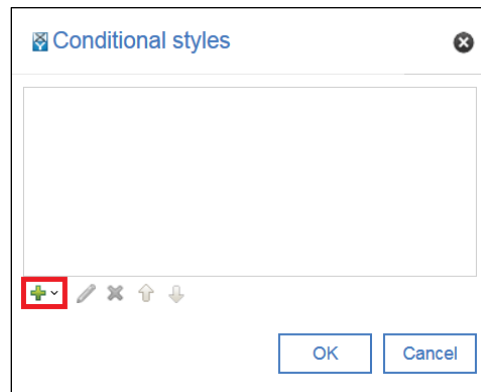
- a. Padding: 3px 3px 3px 3px

36. In the Toolbox, scroll down to the *Layout* section and drag an *Image* into the Repeater Table Cell:

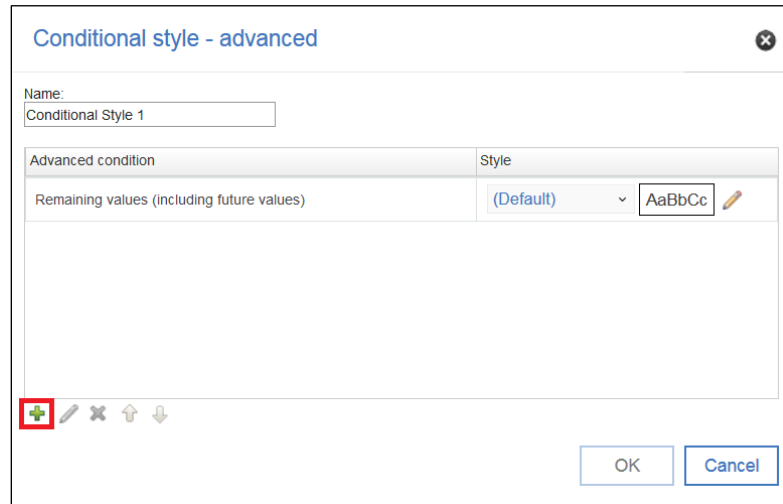


37. Select the first Image and set the following properties:

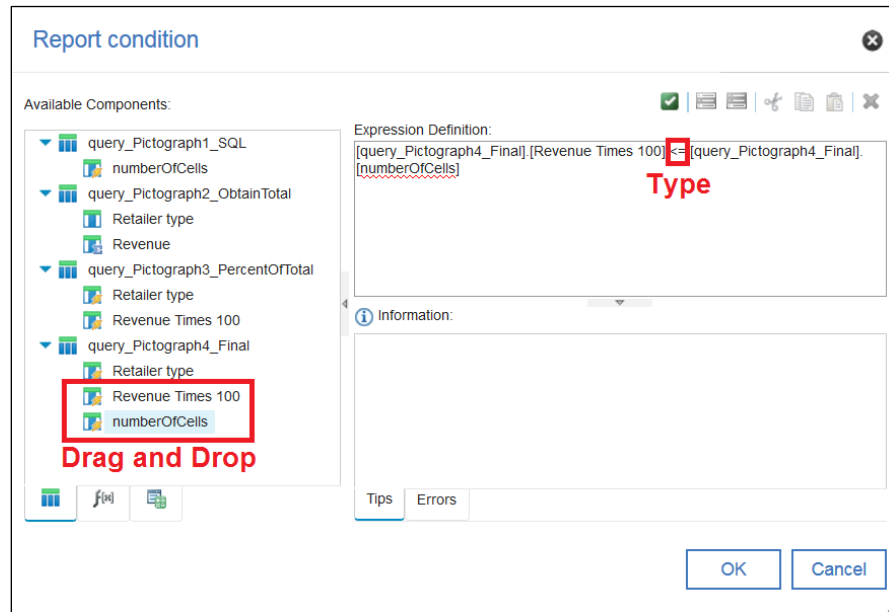
- a. URL: ../samples/images/inf1_forklift_32.png
- b. **TIP:** Use this path ../samples/images/common/transparent/Airplane_black.png to access any of the supplied 55 sample images.
- c. Size & overflow: 32px 32px
- d. Conditional styles:
 - i. Click the *New Conditional Style* icon and select *Advanced Conditional Style...*:



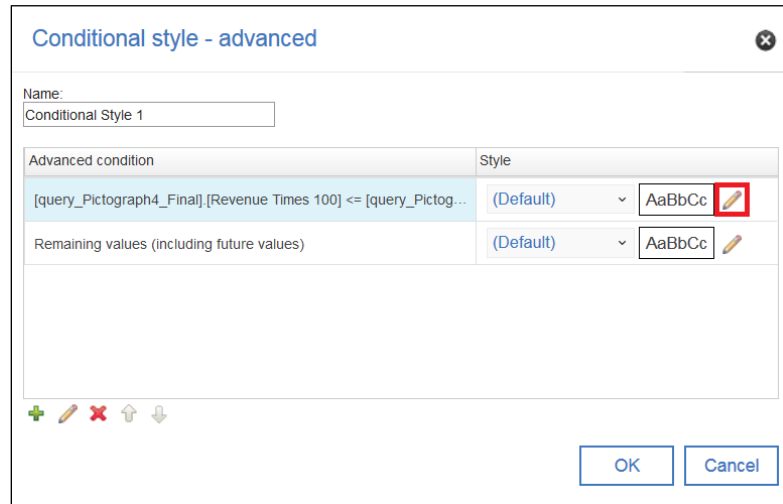
ii. Click the *New advanced condition* icon:



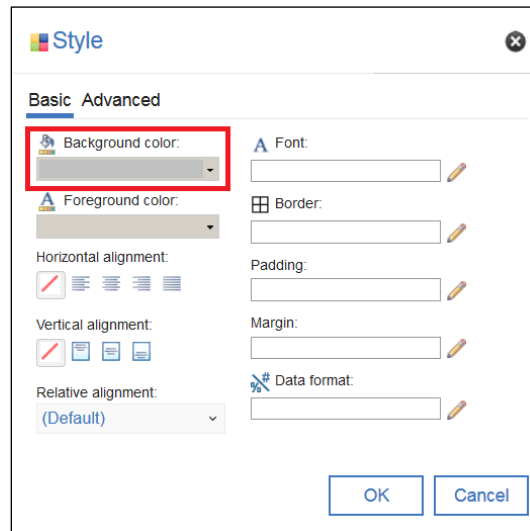
iii. In the *Report Condition* dialog, drag and drop the following items, combined with some type-in, to create this expression and click *OK*:



- iv. Click the Pencil icon for the first condition:



- v. Set the *Background color* to *Silver* and click *OK*:



- vi. Click the Pencil icon for the second condition.
- vii. Set the *Background color* to *Lime* and click *OK* and *OK* and *OK*.
- viii. **NOTE:** The conditional style works like this – as long as the *Revenue Times 100* value (e.g. 31.866) is less than the current cell number (from 1 to 100) , highlight the image in lime. Otherwise, highlight the image in silver.

38. Click the *Run options* icon  and select *Run Active Report*.

TIP: After you set all of this up once, you can easily modify the queries to use any Category and any Measure. You can also choose an appropriate image for your data’s context.