ESR Business Intelligence Quick Reference Guide for BI Administrators

Author:James HaddonReviewers:NHS Development Team

Change Record

Date	Author	Version	Change Reference
28/12/2012	James Haddon	0.1	Initial draft
19/03/2013	James Haddon	0.2	Updated to include useful calculations
22/03/2013	James Haddon	1.0	Initial release
07/05/2013	James Haddon	2.0	Update to include HTML
20/06/2019	Chris Holroyd	4.0	Update following developments
01/03/2025	Matt Madya	5.0	Update following developments



Available Analysis Logos. Usage: fmap:images/image_name.jpg

X	report_account_appl.jpg	12	report_activities.jpg	\$	report_agreements.jpg	2	report_automotive1.jpg	-	report_automotive2.jpg
	report_bad_percentage.jpg	9	report_bankBalances.jpg	II-	report_bad_value.jpg	S.	report_bankAccount.jpg	Nin.	report_bad_progress.jpg
-97	report_call.jpg	1	report_cautionary_value.jpg	This	report_cautionary_progress.jpg		report_cautionary_percentage.jpg		report_callcenter.jpg
2	report_comm2.jpg	स्रेल्स ि	report_cust_sat.jpg		report_email.jpg	A	report_expiration.jpg	急	report_comm1.jpg
1711	report_generic.jpg	20	report_geographical.jpg		report_good_percentage.jpg		report_good_progress.jpg		report_forecasting.jpg
m	report_household.jpg	5	report_insuranceClaim.jpg	(G)	report_insurance_Policy.jpg	Ø	report_investigative.jpg		report_good_value.jpg
E B	report_location.jpg		report_medicalResearch.jpg	1 TH	report_mktShare.jpg	1	report_order.jpg	1	report_invoices.jpg
	report_pipeline.jpg		report_reportsCatalog.jpg		report_retailAudit.jpg		report_salesrep.jpg	8	report_phone.jpg
1	report_scorecard.jpg	-	report_serviceRequest.jpg	11	report_service_profitibility.jpg		report_targetActual.jpg	Tin.	report_salesVolume.jpg
5	report_tradefund.jpg	5	report_tradepromo.jpg	(China)	report_trends.jpg	Tit!	report_universal_queue.jpg		report_topN.jpg
£.	report_win_lossDeals.jpg								

Reference: http://obiee101.blogspot.co.uk/2011/08/obiee11g-report-logos.html

Useful Functions. Full documentation available here.

Conversion Functions

Function	Syntax	Example
CAST: Changes the data type of an	CAST(expr AS	CAST(staffgroup AS CHAR)
expression to another data type.	data_type)	
data_types = CHARACTER, VARCHAR,		
INTEGER, FLOAT, SMALLINT, DOUBLE		
PRECISION, DATE, TIME, TIMESTAMP,		
BIT, BIT VARYING		
IFNULL: Tests if an expression evaluates	IFNULL(expr, value)	IFNULL(FTE,0)
to a null value, and if it does, assigns		
the specified value to the expression.		

Date/Time Functions

Function	Syntax	Example
CURRENT_DATE: Returns the	CURRENT_DATE	CURRENT_DATE
current date.		
DAYNAME: Returns the name of	DAYNAME(dateExpr)	DAYENAME(startDate)
the day of the week for a		
specified date.		
MONTHNAME: Returns the	MONTHNAME(dateExpr)	MONTHNAME(startDate)
name of the month for a		
specified date.		
WEEK_OF_YEAR: Returns a	WEEK_OF_YEAR(dateExpr)	WEEK_OF_YEAR(startDate)
number (between 1 and 53)		
corresponding to the week of the		
year for the specified date.		
DAYOFMONTH: Returns the	DAYOFMONTH(dateExpr)	DAYOFMONTH(startDate)
number corresponding to the day		
of the month.		
TIMESTAMPADD	TIMESTAMPADD(interval,	This example asks for the
Adds a specified number of	intExpr, timestamp)	resulting timestamp when 3
intervals to a specified	Intervals =	days are added to 2000-02-27
timestamp, and returns a single	SQL_ISI_SECOND	14:30:00. Since February, 2000 is
timestamp. Adding a week	SQL_TSI_MINUTE	a leap year, the query returns a
translates to adding seven days,	SQL_TSI_HOUR	single timestamp of 2000-03-01
and adding a quarter translates	SQL_TSI_DAY	14:30:00.
to adding three months. A	SQL_ISI_WEEK	
negative integer value results in a	SQL_ISI_MONTH	TIMESTAMPADD(SQL_TSI_DAY,
subtraction (such as going back in	SQL_TSI_QUARTER	3, TIMESTAMP'2000-02-27
time).	SQL_TSI_YEAR	14:30:00')

Function	Syntax	Example
TIMESTAMPDIFF: Returns the	TIMESTAMPDIFF(interval,	Difference in days between
total number of specified	timestamp1, timestamp2)	timestamps 1998-07-31
intervals between two	Intervals =	23:35:00 and 2000-04-01
timestamps.	SQL_TSI_SECOND	14:24:00. It returns a value of
	SQL_TSI_MINUTE	610. Notice that the leap year in
	SQL_TSI_HOUR	2000 results in an additional day.
	SQL_TSI_DAY	TIMESTAMPDIFF
	SQL_TSI_WEEK	(SQL_TSI_DAY,
	SQL_TSI_MONTH	TIMESTAMP'1998-07-31
	SQL_TSI_QUARTER	23:35:00',TIMESTAMP'2000-04-
	SQL_TSI_YEAR	01 14:24:00')

String Functions

Function	Syntax	Example
CHAR_LENGTH: Returns the length,	CHAR_LENGTH(strExpr)	CHAR_LENGTH(orgName)
in number of characters, of a		
specified string. Leading and trailing		
blanks are not counted in the length		
of the string.		
CONCAT: Concatenates two	CONCAT(strExpr1,	CONTACT(firstName,lastName)
character strings	strExpr2)	
INSERT: Inserts a specified character	INSERT(strExpr1,	In the first string, starting at the
string into a specified location in	integer1, integer2,	second position, three
another character string.	strExpr2)	characters (the numbers 2, 3,
		and 4) are replaced by the string
		abcd.
		INSERT('123456', 2, 3, 'abcd')
		Result: 1abcd56
LEFT: Returns a number of	LEFT(strExpr, integer)	LEFT('123456', 3)
characters from the left of a string.		Result:123
LENGTH: Returns the length, in	LENGTH(strExpr)	LENGTH('abcd')
number of characters, of a string.		Result: 4
LOCATE: Returns the numeric	LOCATE(strExpr1,	LOCATE('d', 'abcdef')
position of a character string in	strExpr2 [, integer])	Result: 4
another character string. If the	strExpr1 = needle	LOCATE('g', 'abcdef')
string cannot be found, 0 is	strExpr2 = haystack	Result: 0
returned.		
REPLACE: Replaces one or more	REPLACE(strExpr1,	Replace('abcd1234', '123', 'zz')
characters from a character	strExpr2, strExpr3)	
expression with one or more other		Result: abcdzz4
characters.		

SUBSTRING: Creates a new string	SUBSTRING(strExpr	SUBSTRING('ABCDE' FROM 2)
starting from a fixed number of	FROM	Result: BCDE
characters into the original string.	starting_position)	

Aggregate Functions

Function	Syntax	Example
AGGREGATE AT: Aggregates columns	AGGREGATE(expr AT	AGGREGATE(sales AT Year)
based on the level or levels you	level [, level1,	
specify.	levelN])	
AVG: Calculates the average (mean)	AVG(numExpr)	AVG(FTE)
value of an expression in a result set.		
BOTTOMN: ranks the lowest n values	BOTTOMN(numExpr,	BOTTOMN(absenceDays, 10)
of the expression argument from 1 to	integer)	
n, 1 = the lowest numeric value.		
COUNT: Calculates the number of	COUNT(expr)	Count(empNo)
rows having a nonnull value for the		
expression		
COUNTDISTINCT: Count the number of	COUNT(DISTINCT	COUNT(DISTINCT empNo)
distinct values in a result set.	expr)	
COUNT(*): Counts the number of	COUNT(*)	COUNT(*)
rows.		
MIN: Calculates the minimum value	MIN(numExpr)	MIN(absDays)
(lowest numeric value) of the rows.		
MAX: calculates the maximum value	MAX(numExpr)	MAX(absDays)
(highest numeric value) of the rows.		
MEDIAN: Calculates the median	MEDIAN(numExpr)	MEDIAN(absDays)
(middle) value of the rows satisfying		
the numeric expression argument.		
When there are an even number of		
rows, the median is the mean of the		
two middle rows.		
RANK: calculates the rank for each	RANK(numExpr)	Rank(empScore)
value satisfying the numeric		
expression argument. The highest		
number is assigned a rank of 1, and		
each successive rank is assigned the		
next consecutive integer (2, 3, 4,). If		
certain values are equal, they are		
assigned the same rank (for example,		
1, 1, 1, 4, 5, 5, 7).		

STDDEV: returns the standard	STDDEV([ALL	STDDEV(empScore)
deviation for a set of values. If ALL is	DISTINCT] numExpr)	
specified, the standard deviation is		
calculated for all data in the set.		
SUM: Calculates the sum obtained by	SUM(numExpr)	SUM(empScore)
adding up all values		
TOPN: Ranks the highest n values of	TOPN(numExpr,	Top 10 rows by absence days:
the expression argument from 1 to n,	integer)	
1 = the highest numeric value.		TOPN(absDays, 10)

Colour Palette

NHS Blue Pantone: 300 CMYK: 99/50/0/0 RGB: 0/94/184 #005EB8 RAL: 5017	White CMYK: RGB: 25 #FFFFF	0/070/0 5/255/255
NHS Dark Blue Pantone: 287 CMYK: 100/75/2/18 RGB: 0/48/135 #003087	NH5 Blue Pantone: 300 CMYK: 99/50/0/0 RGB: 0/94/184 #005EB8	NHS Bright Blue Pantone: 285 CMYK: 90/48/0/0 RGB: 0/114/206 #0072CE
NHS Light Blue Pantone: 298 CMYK: 6772/0/0 RGB: 65/182/230 #41B6E6	NHS Aqua Blue Pantone: 312 CMYK: 88/0/11/0 RGB: 0/169/206 #00A9CE	
NH5 Black Pantone: Black 6 CMYK: 100k RGB: 35/31/32 #231f20	NHS Dark Grey Pantone: 7545 CMYK: 58/22/18/54 RGB: 66/85/99 #425563	NH5 Mid Grey Pantone: 7544 CMYK: 35/14/11/34 RGB: 118/134/146 #768692
NHS Pale grey Pantone: 7541 CMYK: 7/1/3/2 RGB: 232/237/238 #E8EDEE	White CMYK: 0/0/0/0 RGB: 255/255/255 #FFFFFF	

Colour Palette

NHS Dark Green Pantone: 342 CMYK: 93/10/75/43 RGB: 0/103/71 #006747	NHS Green Pantone: 355 CMYK: 91/0/100/0 RGB: 0/150/57 #009639	NHS Light Green Pantone: 368 CMYK: 65/0/100/0 RGB: 120/190/32 #78BE20
NHS Aqua Green Pantone: 3272 CMYK: 94/0/48/0 RGB: 0/164/153 #00A499		
NHS Purple Pantone: 2685 CMYK: 90/99/0/8 RGB: 51/0/114 #330072	Dark Pink Pantone: 683 CMYK: 26/99/12/50 RGB: 124/40/85 #7C2855	NHS Pink Pantone: 675 CMYK: 18/100/0/8 RGB: 174/37/115 #AE2573
NHS Dark Red Pantone: 1955 CMYK: 9/100/54/43 RGB: 138/21/56 #8A1538	Emergency Services Red Pantone: 485 RAL 3020 Traffic Red CMYK: 0/95/100/0 RGB: 218/41/28 #DA291C	
NHS Orange Pantone: 144 CMYK: 0/51/100/0 RGB: 237/139/0 #ED8B00	NHS Warm Yellow Pantone: 1235 CMYK: 0/31/98/0 RGB: 255/184/28 #FFB81C	NHS Yellow Pantone: Process Yellow CMYK: 0/0/100/0 RGB: 250/225/0 #FAE100

Useful Calculations

Calculation	Description
Repository Variable: CURRENT_DATE	Returns the current system date
TIMESTAMPADD(SQL_TSI_DAY, -1,	Yesterday
CURRENT_DATE)	
TIMESTAMPADD(SQL_TSI_MONTH, -1,	First day of previous month
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(
CURRENT_DATE) * -(1) + 1, CURRENT_DATE))	
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(First day of current month
CURRENT_DATE) * -(1) + 1, CURRENT_DATE)	-
TIMESTAMPADD(SQL_TSI_MONTH, 1,	First day of next month
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(
CURRENT_DATE) * -(1) + 1, CURRENT_DATE))	
TIMESTAMPADD(SQL_TSI_DAY , -(1),	Last day of previous month
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(
CURRENT_DATE) * -(1) + 1, CURRENT_DATE))	
TIMESTAMPADD(SQL_TSI_DAY , -(1),	Last day of current month
TIMESTAMPADD(SQL_TSI_MONTH , 1,	
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(
CURRENT_DATE) * -(1) + 1, CURRENT_DATE)))	
TIMESTAMPADD(SQL_TSI_DAY , -(1),	Last day of next month
TIMESTAMPADD(SQL_TSI_MONTH , 2,	
TIMESTAMPADD(SQL_TSI_DAY , DAYOFMONTH(
CURRENT_DATE) * -(1) + 1, CURRENT_DATE)))	
SELECT CASE WHEN 1=0 THEN "Time"."Date"	Default a date in prompt (today – 12
ELSE TIMESTAMPADD(SQL_TSI_MONTH, -12,	months in this example)
CURRENT_DATE) END FROM "Human Resources	
- Workforce Profile"	

Best Practice

Dashboard Layout

Title / Prompts: Give each dashboard page a title, in title case. Ensure prompts are provided horizontally across the top of the dashboard taking up as little space as possible.

NHS Electronic Staff Record - Business Intelligence

Absence Type(s) (All Column Values)
From Date >= 01/01/2012 00:0(
To Date <= 30/12/2012 00:0(
Apply Reset >

If you have a large number of prompts, you may wish to make the section collapsible. Always include an 'Apply' and 'Reset' button for prompts.

Screen Resolution: Always build / configure your dashboards with a resolution of 1024x768 in mind as this is the most common resolution for desktop PCs. If you know your organisation uses a different resolution, ensure you conform to this.

Report Links: Include links that users will actually need to use, and not all links. Try to keep the number of 'options' a user has to a minimum in a simple dashboard.

STI DACK Problems		
Development		
	Refresh - Print - Exp	oort

5.U 2.0

Supporting Text: Dashboard developers are able to add 'Static Text' areas to dashboards. If you have complex analyses in a dashboard, think about including a static text area to help users understand what is being shown to them.

HTML: HTML can be added to dashboards and analyses to support users in using the system. For example –hyperlinks can be added to a page to direct users to an external site or document.

There are no restrictions on the links that can be added to BI - BI Administrators must ensure any HTML used has been checked and where external links are used they are checked regularly to ensure they do not misdirect users to potentially unsafe sites. Organisations are responsible for the HTML used in any locally created dashboards and must be aware that the use of HTML in dashboards is not supported.

Analysis Design

AND Assignment Category is prompted

Colour Scheme: Always use the colour scheme to base your charts on. Try to ensure that colours used have the same or similar meanings on all analyses.

Prompts: Where possible, try not to include prompts for individual analyses. Users will find it easier to complete all prompts in one place (i.e. at the top of the dashboard) rather than having to complete them several times for each analysis.

	- FI
Filter Location and Contents	~
Filter Location	CI
/Shared Folders/NHS Standard Dashboards/Subject Area Contents/NHS Generic Workforce Filter	
Contents of Filter	
\mathbb{Y} Organization Name is prompted	da
AND TPerson Type is prompted	+h
AND TEmployee Person Type is prompted	u
AND W Main Staff Group is prompted	1

Filters: Where possible, try to create a 'Saved' filter that you can apply to all of your dashboards, rather than creating the same filter multiple times. This also helps when drilling from one dashboard to another

as any 'Prompted' filters take values from the drilled-from dashboard.

Action Links: By default, some data items will have 'drillable' functionality included. This may not always be right for your analysis (for example, you may wish the user to be navigated to a different dashboard rather than drilling on the same analysis). Try to create a 'Repository' of action links to use in your dashboards rather than creating a new action link for each one.

Formatting: Where possible, use the 'Format Copy' functionality to copy formatting from one analysis to another. Not only does this reduce your workload, it also ensures analyses are formatted in the same way to make them easy to understand.



Analysis Criteria

Reduce Data with Filters: ESRBI is provided to enable users to see an easy view aggregated data to enable them to make business decisions. ESRBI is not provided as an 'Export' tool to export large amounts of data. When creating

analyses, limit and appropriately aggregate your data to ensure your dashboards are usable and performant.