

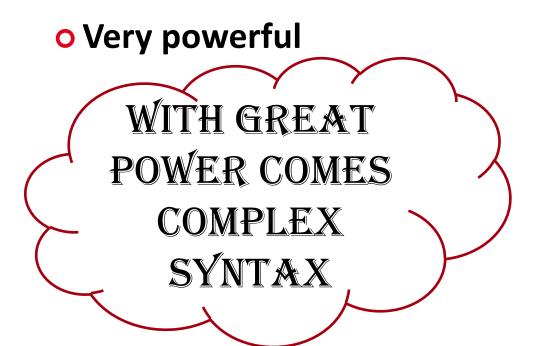
Oracle SQL Pattern Matching Made Easy

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MATCH_RECOGNIZE

- Added in Oracle 12cR1
- Enhanced analysis of row sequences
- For detecting matches to complex patterns
- A significant boost to the analytical capabilities of SQL

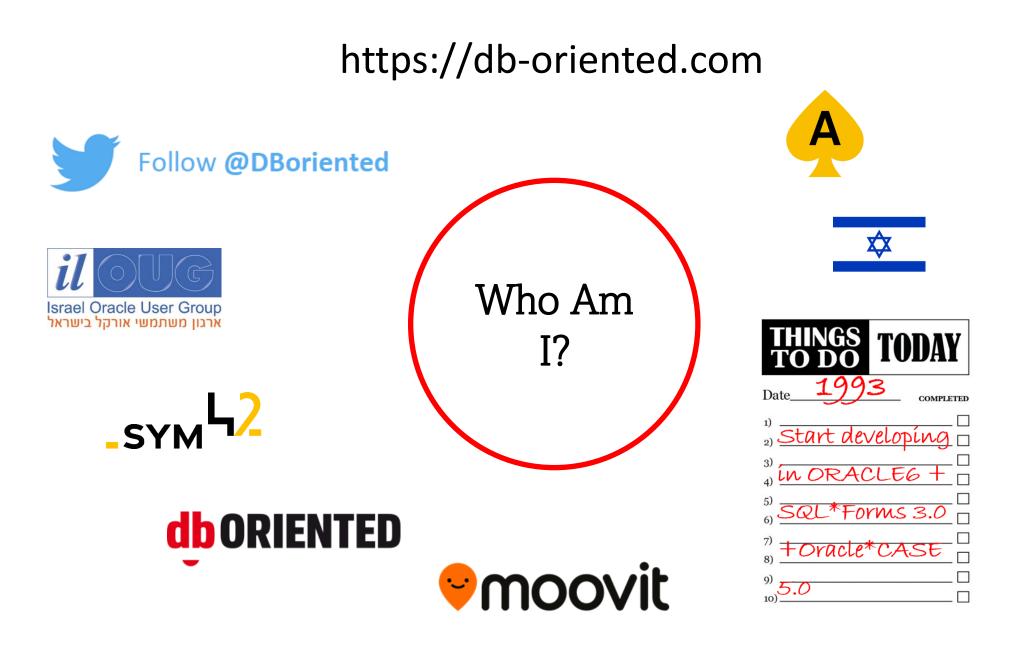


Agenda

• Start using Pattern Matching

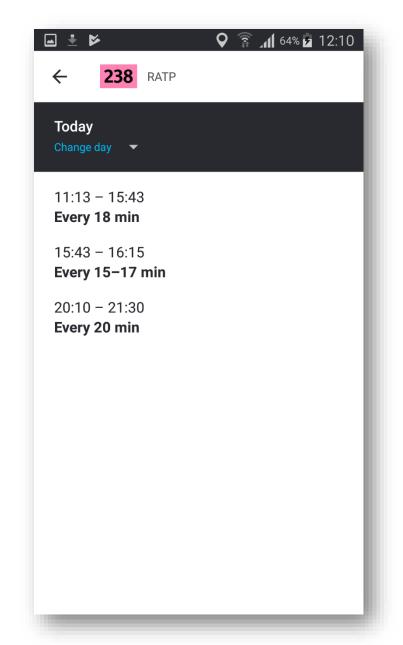
• Step by step

Not all the capabilities...
But all the essentials (and more)
Simple examples



A Real-Life Example

12:10 🥊	ଭି 🕏 🕸 ୖି କି ⊿di ⊂∎ 43%
← 238	RATP
Today Change day	•
14:13	Zac Des Louvresses
14:31	Zac Des Louvresses
14:49	Zac Des Louvresses
15:07	Zac Des Louvresses
15:25	Zac Des Louvresses
15:43	Zac Des Louvresses
16:00	Zac Des Louvresses
16:15	Zac Des Louvresses
20:10	Zac Des Louvresses
20:30	Zac Des Louvresses
20:50	Zac Des Louvresses
21:10	Zac Des Louvresses
21:30	Zac Des Louvresses



YEAR	WINNER	SONG	PERFORMER	POINTS	LANGUAGE	HOST	<u>ations</u>
1956	Switzerland	Refrain	Lys Assia		French	Switzerland	
1957	Netherlands	Net als toen	Corry Brokken	31	Dutch	Germany	
1958	France	Dors, mon amour	André Claveau	27	French	Netherlands	
1959	Netherlands	Een beetje	Teddy Scholten	21	Dutch	France	
						United	
1960	France	Tom Pillibi	Jacqueline Boyer	32	French	Kingdom	
1961	Luxembourg	Nous les amoureux	Jean-Claude Pascal	31	French	France	
1962	France	Un premier amour	Isabelle Aubret	26	French	Luxembourg	
						United	
1963	Denmark	Dansevise	Grethe and Jørgen Ingmann	42	Danish	Kingdom	
1964	Italy	Non ho l'età	Gigliola Cinquetti	49	Italian	Denmark	
		Poupée de cire, poupée					
1965	Luxembourg	de son	France Gall	32	French	Italy	
1966	Austria	Merci, Chérie	Udo Jürgens	31	German	Luxembourg	
	United						
1967	Kingdom	Puppet on a String	Sandie Shaw	47	English	Austria	
						United	
1968	Spain	La, la, la	Massiel	29	Spanish	Kingdom	
1969	Netherlands	De troubadour	Lenny Kuhr	18	Dutch	Spain	
		All Kinds of					
1970	Ireland	Everything	Dana	32	English	Netherlands	
		Un banc, un arbre, une					
1971	Мопасо	rue	Séverine	128	French	Ireland	
						United	
1972	Luxembourg	Après toi	Vicky Leandros	128	French	Kingdom	
1973	Luxembourg	Tu te reconnaîtras	Anne-Marie David	129	French	Luxembourg	
						United	

Find all the wins of Luxembourg

SELECT *
FROM EUROVISION_WINNERS
WHERE WINNER = 'Luxembourg';

Pattern

Find all the wins of Luxembourg

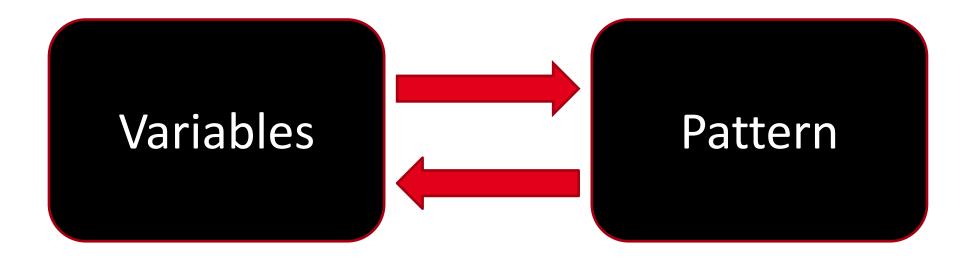
					Variable
	YEAR	WINNER	SONG	HOST	LUX
	1960	France	Tom Pillibi	United Kingdom	
	1961	Luxembourg	Nous les amoureux	France	$\overline{\mathbf{V}}$
-	1962	France	Un premier amour	Luxembourg	
	1963	Denmark SELEC	T YEAR, WINNER, SONG, HOST	ed Kingdom	
		Italy FROM	EUROVISION WINNERS	lark	
2	1965	Luxembourg MATCH	H RECOGNIZE (.y	
	1966			mbourg	
	1967	United Kin PA	TTERN (LUX)	ria	
	1968		INE LUX AS WINNER = 'Luxembour	g ed Kingdom	
	1969	Netherland		.n	
	1970	Ireland	ALL KINGS OF EVERYTHING	Necherlands	
	197	YEAR WINNER	SONG	HOST -	
3	197	1 1961 Luxembo	urg Nous les amoureux	France	$\overline{\checkmark}$
4		2 1965 Luxembo	urg Poupée de cire, poupée de son	italy	\checkmark
	197	3 1972 Luxembo	urg Après toi	United Kingdom	
	197	4 1973 Luxembo	urg Tu te reconnaîtras	Luxembourg	
	197	5 1983 Luxembo	urg [–] Si la vie est cadeau	Germany	
	1977	France	L'oiseau et l'enfant	United Kingdom	
	1978	Israel	A-Ba-Ni-Bi	France	

YEAR	WINNER		SONG	HOST
1960	France	СЕГ		ted Kingdom
1961	Luxembourg			nce
1962	France		A EUROVISION_WINNERS RE WINNER = 'Luxembourg';	embourg
1963	Denmark		RE WINNEL = 'Luxembourg';	ted Kingdom
1964	Italy		Non ho l'et	Denmark
1965	Luxembourg		Poupée de cire, poupée de son	Italy
1966	Austria		Merci, Chérie	Luxembourg
1967	United King	dom	Puppet on a String	Austria
1968	Spain		La, la, la	United Kingdom
1969	Netherlands		De troubadour	Spain
1970	Ireland		All Kinds of Everything	Netherlands
1971	Monaco		Un banc, un arbre, une rue	Ireland
1972	Luxembourg		Après toi	United Kingdom
1973	Luxembourg		Tu te reconnaîtras	Luxembourg
1974	Sweden		Waterloo	United Kingdom
1975	Netherlands		Ding-a-dong	Sweden
1976	United King	dom	Save Your Kisses for Me	Netherlands
1977	France		L'oiseau et l'enfant	United Kingdom
1978	Israel		A-Ba-Ni-Bi	France

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order by	<i>'</i>	0		Pattern Variable
YEAR	WINNER	SONG	HOST	LUX
1960	France	Tom Pillibi	United Kingdom	\bigcap
1961	Luxembourg	Nous les amoureux	good	
1962	France	Un premier amour	Pattern	
1963	Denmark SELE	CT YEAR, WINNER, SONG, HOST	Concatenation	
	Italy FROM	EUROVISION_WINNERS		
1965	Luxembourg MATCH	RECOGNIZE (y	
1966		DER BY YEAR	mbourg	
1967	United Kin ALI	ROWS PER MATCH	ria	
1968		TTERN (LUX LUX)	ed Kingdom	
1969	Nothe and and	INE LUX AS WINNER = 'Luxembour	e' n	
1970	Ireland		erlands	
1971	Monaco	on banc, an arbre, and rac	I erand	
1972	Luxembourg	Après toi	United Kingdom	$\overline{\mathbf{A}}$
1973	Luxembourg	Tu te reconnaîtras	Luxembourg	\checkmark
1974	Sweden	Waterloo	United Kingdom	
1975	Netherlands Ding-a-dong Swe		Sweden	
1976	United Kingdom	Save Your Kisses for Me	Netherlands	
1977	France	L'oiseau et l'enfant	United Kingdom	
1978	Israel	A-Ba-Ni-Bi	France	

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[order by	·	C		Pattern Variable
	YEAR	WINNER	SONG	HOST	LUX
	1960	France	Tom Pillibi	United Kingdom	\square
	1961	Luxembourg	Nous les amoureux	France	
	1962	France	Un premier amour	Luxembourg	
	1963	Denmark SELEC	CT YEAR, WINNER, SONG, HOST	ed Kingdom	
		Italy FROM	EUROVISION WINNERS	hark	
	1965		RECOGNIZE (.y	
	1966		DER BY YEAR	mbourg	
	1967	United Kin ALL	. ROWS PER MATCH	ria	
	1968	Custin	TERN (LUX LUX)	ed Kingdom	
	1969		INE LUX AS WINNER = 'Luxembour	e n	
	1970	Ireland		erlands	
	1971	Monaco	on banc, an arbre, and rac	Incland	
	1972	Luxembourg	Après toi	United Kingdom	
	1973	Luxembourg	Tu te reconnaîtras	Luxembourg	$\overline{\checkmark}$
	1974	Swed YEAR W	INNER - SONG - HOS	Tgdom	
	1975	Netr 1 1972 Lu	xembourg [—] Après toi [—] Unite	ed Kingdom	
	1976	Unit 2 1973 Lu	xembourg Tu te reconnaîtras Luxe	mbourg	
	1977	France	L'oiseau et l'entant	United Kingdom	
	1978	Israel	A-Ba-Ni-Bi	France	

SELECT YEAR, WINNER, SONG, HOST FROM EUROVISION_WINNERS MATCH_RECOGNIZE (ORDER BY YEAR ALL ROWS PER MATCH PATTERN (LUX LUX) DEFINE LUX AS WINNER = 'Luxembourg')



		YEAR	WINNER	SONG	HOST –
·	1	1972	Luxembourg	Après toi	United Kingdom
	2	1973	Luxembourg	Tu te reconnaîtras	Luxembourg

PATTERN Quantifiers

Pattern	Number of consecutive occurrences
Х	1
X{n}	n
X{n,}	n or more
X{n <i>,</i> m}	between n and m
X{,m}	between 0 and m
Χ*	0 or more
Χ?	0 or 1
Х+	1 or more

Find **one or more successive** wins of Luxembourg

	order by	-			Pattern Variable
	YEAR	WINNER	SONG	HOST	LUX
	1960	France	Tom Pillibi	United Kingdom	
	1961	Luxembourg	Nous les amoureux	France	\checkmark
-	1962	France	Un premier amour	Luxembourg	
	1963	Denmark SELEC	CT YEAR, WINNER, SONG, HOST	ed Kingdom	
		Italy FROM	EUROVISION WINNERS	lark	
2	1965	Luxembourg MATCH	H RECOGNIZE (.y	\checkmark
	1966		DER BY YEAR	mbourg	
	1967	United Kin ALI	. ROWS PER MATCH	ria	
	1968	Custin	TERN (LUX+)	ed Kingdom	
	1969	Nothe and and	INE LUX AS WINNER = 'Luxembour	g'.n	
	1970	Ireland		erlands	
	197	YEAR WINNER	SONG	HOST	
3	197i ·	1 1961 Luxembo	urg Nous les amoureux	France	\checkmark
		2 1965 Luxembo	urg ^m Poupée de cire, poupée de son ^m	italy	\checkmark
	197	3 1972 Luxembo	urg Après toi	United Kingdom	
	197 4		urg Tu te reconnaîtras	Luxembourg	
	197	5 1983 Luxembo	urg Si la vie est cadeau	Germany	
	1977	France	L'oiseau et l'enfant	United Kingdom	
	1978	Israel	A-Ba-Ni-Bi	France	

SELECT YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
 ORDER BY YEAR
 ALL ROWS PER MATCH
 PATTERN (LUX)
 DEFINE LUX AS WINNER = 'Luxembourg'

SELECT YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
 ORDER BY YEAR
 ALL ROWS PER MATCH
 PATTERN (LUX+)
 DEFINE LUX AS WINNER = 'Luxembourg'

	YEAR	WINNER	SONG	HOST
1	1961	Luxembourg	Nous les amoureux	France
2	1965	Luxembourg	Poupée de cire, poupée de son	Italy
3	1972	Luxembourg	Après toi	United Kingdom
4	1973	Luxembourg	Tu te reconnaîtras	Luxembourg
5	1983	Luxembourg	Si la vie est cadeau	Germany

	YEAR	WINNER	SONG	HOST
1	1961	Luxembourg	Nous les amoureux	France
2	1965	Luxembourg	Poupée de cire, poupée de son	Italy
3	1972	Luxembourg	Après toi	United Kingdom
4	1973	Luxembourg	Tu te reconnaîtras	Luxembourg
5	1983	Luxembourg	Si la vie est cadeau	Germany

A match is a consecutive sequence of(zero, one, or more) records, that matches a specific pattern

SELECT YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
 ORDER BY YEAR
 MEASURES
 MATCH_NUMBER() AS MATCH#
 ALL ROWS PER MATCH
 PATTERN (LUX)
 DEFINE LUX AS WINNER = 'Luxembourg'

```
SELECT YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
    ORDER BY YEAR
    MEASURES
    MATCH_NUMBER() AS MATCH#
    ALL ROWS PER MATCH
    PATTERN (LUX+)
    DEFINE LUX AS WINNER = 'Luxembourg'
```

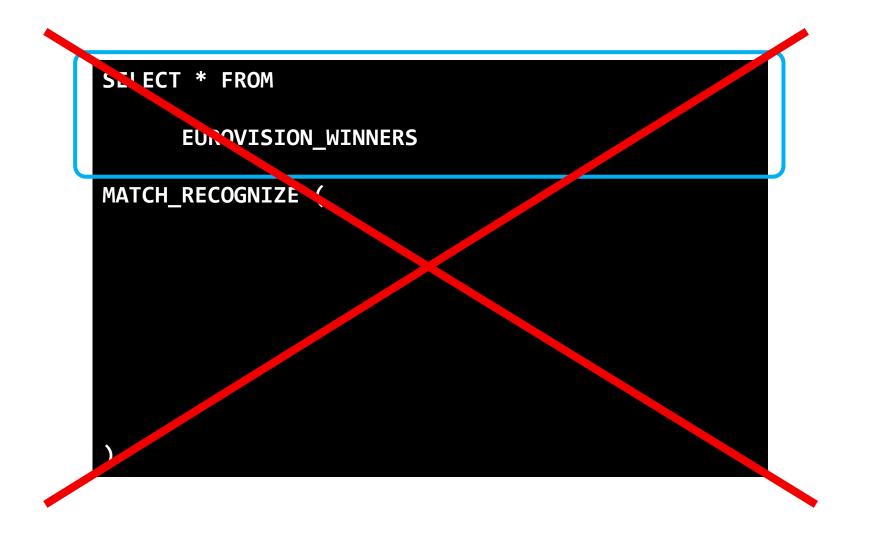
SELECT MATCH#, YEAR, WINNER, SONG, HOST	SELECT MATCH#, YEAR, WINNER, SONG, HOS
FROM EUROVISION_WINNERS	FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (MATCH_RECOGNIZE (
ORDER BY YEAR	ORDER BY YEAR
MEASURES	MEASURES
MATCH_NUMBER() AS MATCH#	MATCH_NUMBER() AS MATCH#
ALL ROWS PER MATCH	ALL ROWS PER MATCH
PATTERN (LUX)	PATTERN (LUX+)
DEFINE LUX AS WINNER = 'Luxembourg'	DEFINE LUX AS WINNER = 'Luxembourg'

	MATCH# YEAR WINNER SONG HOST					
1		/1	1961	Luxembourg	Nous les amoureux	France
2	2	2	1965	Luxembourg	Poupée de cire, poupée de son	Italy
3		3	1972	Luxembourg	Après toi	United Kingdom
4	•	4	1973	Luxembourg	Tu te reconnaîtras	Luxembourg
5	;	5	1983	Luxembourg	Si la vie est cadeau	Germany

	MATCH	#	YEAR -	WINNER	SONG	HOST
1		1	1961	Luxembourg	Nous les amoureux	France
2		2	1965	Luxembourg	Poupée de cire, poupée de son	Italy
3		3	1972	Luxembourg	Après toi	United Kingdom
4		3	1973	Luxembourg	Tu te reconnaîtras	Luxembourg
5		4	1983	Luxembourg	Si la vie est cadeau	Germany

HOST





SELECT * FROM

EUROVISION_WINNERS

MATCH_RECOGNIZE (

SELECT XYZ.* FROM

EUROVISION_WINNERS

MATCH_RECOGNIZE (

) XYZ

SELECT * FROM (SELECT YEAR, WINNER, SONG, HOST FROM EUROVISION_WINNERS WHERE YEAR BETWEEN 1990 AND 2000) MATCH_RECOGNIZE (

);

YEAR	WINNER	SONG	HOST
1990	Italy	Insieme: 1992	Yugoslavia
1991	Sweden	Fångad av en stormvind	Italy
1992	Ireland	Why Me?	Sweden
1993	Ireland	In Your Eyes	Ireland
1994	Ireland	Rock 'n' Roll Kids	Ireland
1995	Norway	Nocturne	Ireland
1996	Ireland	The Voice	Norway
1997	United Kingdom	Love Shine a Light	Ireland
1998	Israel	Diva	United Kingdom
1999	Sweden	Take Me to Your Heaven	Israel
2000	Denmark	Fly on the Wings of Love	Sweden

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SONG	HOST
Insieme: 1992	Yugoslavia
Fångad av en stormvind	Ttaly
M	
, WINNER, SONG, HOST	
SION_WINNERS	
BETWEEN 1990 AND 2000)	
IZE (
EAR	
IMBER() AS MATCH#	
PER MATCH	
÷	
	Insieme: 1992 Eångad av en stormvind M R, WINNER, SONG, HOST SION_WINNERS BETWEEN 1990 AND 2000) HZE (YEAR MBER() AS MATCH# PER MATCH

order	by		
YEAR	WINNER	SONG	HOST
1990	Italy	Insieme: 1992	Yugoslavia
1991	Sweden	Fångad av en stormvind	Italy
1992	Ireland	Why Me?	Sweden
1993	Ireland	In Your Eyes	Ireland
1994	Ireland	Rock 'n' Roll Kids	Ireland
1995	Norway	Nocturne	Ireland
1996	Ireland	The Voice	Norway
1997	United Kingdom	Love Shine a Light	Ireland
1998	Israel	Diva	United Kingdom
1999	Sweden	Take Me to Your Heaven	Israel
2000	Denmark	Fly on the Wings of Love	Sweden
	PATTERN (DEFINE)	

);

order by

Pattern Variables

YEAR	WINNER	SONG	HOST	Ι
1990	Italy	Insieme: 1992	Yugoslavia	?
1991	Sweden	Fångad av en stormvind	Italy	
1992	Ireland	Why Me?	Sweden	?
1993	Ireland	In Your Eyes	Ireland	?
1994	Ireland	Rock 'n' Roll Kids	Ireland	?
1995	Norway	Nocturne	Ireland	
1996	Ireland	The Voice	Norway	?
1997	United Kingdom	Love Shine a Light	Ireland	
1998	Israel	Diva	United Kingdom	?
1999	Sweden	Take Me to Your Heaven	Israel	
2000	Denmark	Fly on the Wings of Love	Sweden	

PATTERN () DEFINE I AS WINNER LIKE 'I%'

);

order by

Pattern	
Variables	

YEAR	WINNER	SONG	HOST	Ι	LN
1990	Italy	Insieme: 1992	Yugoslavia	?	
1991	Sweden	Fångad av en stormvind	Italy		?
1992	Ireland	Why Me?	Sweden	?	
1993	Ireland	In Your Eyes	Ireland	?	
1994	Ireland	Rock 'n' Roll Kids	Ireland	?	?
1995	Norway	Nocturne	Ireland		
1996	Ireland	The Voice	Norway	?	
1997	United Kingdom	Love Shine a Light	Ireland		?
1998	Israel	Diva	United Kingdom	?	
1999	Sweden	Take Me to Your Heaven	Israel		?
2000	Denmark	Fly on the Wings of Love	Sweden		?

PATTERN (DEFINE I AS WINNER LIKE 'I%', LN AS LENGTH(SONG)>=18

);

UK

Multiple Pattern Variables

order by

Pattern	
Variables	

LN

YEAR	WINNER	SONG	HOST	I
1990	Italy	Insieme: 1992	Yugoslavia	?
1991	Sweden	Fångad av en stormvind	Italy	
1992	Ireland	Why Me?	Sweden	?
1993	Ireland	In Your Eyes	Ireland	?
1994	Ireland	Rock 'n' Roll Kids	Ireland	?
1995	Norway	Nocturne	Ireland	
1996	Ireland	The Voice	Norway	?
1997	United Kingdom	Love Shine a Light	Ireland	
1998	Israel	Diva	United Kingdom	?
1999	Sweden	Take Me to Your Heaven	Israel	
2000	Denmark	Fly on the Wings of Love	Sweden	

י י		
	?	
?		
? ? ?		
?	?	
?		
	?	
?		?
	?	
	?	

PATTERN () DEFINE I AS WINNER LIKE 'I%', LN AS LENGTH(SONG)>=18,

UK AS HOST='United Kingdom'

);

UK

 $\mathbf{\nabla}$

Multiple Pattern Variables

order by

);

Pattern	
Variables	

LN

 \checkmark

 $\mathbf{\nabla}$

 $\mathbf{\nabla}$

	V					
	YEAR	WINNER	SONG	HOST	I	
1	1990	Italy	Insieme: 1992	Yugoslavia	$\overline{\mathbf{A}}$	
	1991	Sweden	Fångad av en stormvind	Italy		
	1992	Ireland	Why Me?	Sweden	$\overline{\mathbf{A}}$	
0	1993	Ireland	In Your Eyes	Ireland	\square	
2	1994	Ireland	Rock 'n' Roll Kids	Ireland		
	1995	Norway	Nocturne	Ireland		
	1996	Ireland	The Voice	Norway	$\mathbf{\overline{A}}$	
3	1997	United Kingdom	Love Shine a Light	Ireland		
	1998	Israel	Diva	United Kingdom		
	1999	Sweden	Take Me to Your Heaven	Israel		
	2000	Denmark	Fly on the Wings of Love	Sweden		
		PATTERN (I	LN UK?)			

DEFINE I AS WINNER LIKE 'I%', LN AS LENGTH(SONG)>=18, UK AS HOST='United Kingdom'

(

IVI	order by								Pattern ariable			
	YEAR	WINNER			SON	IG		HOST	I	LN	UK	
	1990	Italy		Insi	eme: 1992		Y	ugoslavia	\checkmark			
	1991	Sweden		0	ad av en s	stormvin	d I	taly				
	1992	SELECT *					SI	weden	$\overline{\mathbf{A}}$			
2	1993				_		I	reland	\checkmark			
	1994	InEROMdEUR	OVIS	SION_W	INNERS 11	Kids	I	reland		$\mathbf{\nabla}$		
	1995	NoWHERE YE	AR E	BETWEE	IN 1990 AN	ID 2000)	I	reland				
	1996	<u>∎MATCH_</u> REC					N	orway	$\mathbf{\nabla}$			
3	1997	UniORDER1B	Yd Yf	EARove	Shine a	Light	I	reland				
-	1998	IsrMEASURE	S	Diva			UI	nited Kingd <mark>o</mark> m			\checkmark	
	1999	SwedeMATCH	_NUM	MBER()	AS MATCH	l# Heave	n Is	srael				
	2000	DenAbbkROW	S PE	ERFMAT	CH the Wi	ngs of L	ove Si	weden				
		PATTERN	Y	EAR -	MATCH#	WINNER	Ĺ	SONG		— H	IOST	
		DEFINE	1	1990	1	Italy		Insieme: 1992		Y	'ugos	lavia –
			2	1991	1	Sweden		Fångad av en s	tormvin	nd 🕆 It	aly	
			3	1993	2	Ireland		In Your Eyes		Ir	eland	
);	4	1994	2	Ireland		Rock 'n' Roll Ki	ds	Ir	eland	
			5	1996		Ireland		The Voice			lorwa	
			6	1997			ingdom	Love Shine a L	ight		eland	
			7	1998	3	Israel		Diva		U	nited	Kingdom —

SELECT * FROM
(SELECT YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
WHERE YEAR BETWEEN 1990 AND 2000)
MATCH_RECOGNIZE (
ORDER BY YEAR
MEASURES
MATCH_NUMBER() AS MATCH#
ALL ROWS PER MATCH
PATTERN (I LN UK?)
DEFINE I AS WINNER LIKE 'I%',
LN AS LENGTH(SONG)>=18,
UK AS HOST='United Kingdom'
):

15

Find two or more successive wins of the same country



YEAR	WINNER	SONG	HOST		SAME
1977	France	L'oiseau et l'enfant	United Kingdom 🦯	PREV	
1978	Israel	A-Ba-Ni-Bi	France 🔶	NEXT `	\checkmark
1979	Israel	Hallelujah	Israel 🤤		
1980	Ireland	What's Another Year	Netherlands		
1981	United Kingdom	<pre>Maki SELECT MATCH#, YEAR,</pre>		\circ	
1982	Germany	Ein FROM EUROVISION_WINN	ERS	° 🗹	
1983	Luxembourg	<pre>Si 1: MATCH_RECOGNIZE (</pre>		Vsical Gation	
1984	Sweden	Digg: ORDER BY YEAR			
1985	Norway	La de MEASURES		Jation	
1986	Belgium	J'air MATCH_NUMBER() AS	S MATCH#		
1987	Ireland	Hold ALL ROWS PER MATCH		\checkmark	
1988	Switzerland	Ne p: PATTERN (X SAME+)	•		
1989	Yugoslavia	Rock DEFINE SAME AS WIN	NER = PREV (WINNER)		
1990	Italy	Insi();		\checkmark	
1991	Sweden	Fångad av en stormvind	Italy		
1992	Ireland	Why Me?	Sweden	$\overline{\checkmark}$	
1993	Ireland	In Your Eyes	Ireland		$\overline{\mathbf{A}}$
1994	Ireland	Rock 'n' Roll Kids	Ireland		$\overline{\mathbf{A}}$
1995	Norway	Nocturne	Ireland		

Find two or more successive wins of the same country

SELECT MATCH#, YEAR, WINNER, SONG, HOST
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
 ORDER BY YEAR
 MEASURES
 MATCH_NUMBER() AS MATCH#
 ALL ROWS PER MATCH
 PATTERN (X SAME+)
 DEFINE SAME AS WINNER = PREV(WINNER)
);

	MATCH#-	YEAR	WINNER	SONG	HOST -
1	1	1972	Luxembourg	Après toi	United Kingdom
2	1	1973	Luxembourg	Tu te reconnaîtras	Luxembourg
3	2	1978	Israel	A-Ba-Ni-Bi	France
4	2	1979	Israel	Hallelujah	Israel
5	3	1992	Ireland	Why Me?	Sweden
6	3	1993	Ireland	In Your Eyes	Ireland
7	3	1994	Ireland	Rock 'n' Roll Kids	Ireland

YEAR	WINNER		SONG	POINTS
1971	Monaco		Un banc, un arbre, une rue	128
1972	Luxembourg		Après toi	128
1973	Luxembou	ırg	T u te reconnaîtras	129
1974	Sweden		Waterloo	24
1975	Netherla	nds	Ding-a-dong	152
1976	United H	ingdom	Save Your Kisses for Me	164
1977	France		L'oiseau et l'enfant	136
1978	Israel	Israel A-Ba-Ni-Bi		157
1979	Israel		Hallelujah	125
1980	Ireland		What's Another Year	143
1981	United H	ingdom	Making Your Mind Up	136
1982	Germany		Ein bißchen Frieden	161
1983	Luxembou	ırg	Si la vie est cadeau	142
1984	Sweden		Diggi-Loo Diggi-Ley	145
1985	Norway		La det swinge	123
1986	Belgium		J'aime la vie	176
1987	Ireland		Hold Me Now	172
1988	Switzer]	Land	Ne partez pas sans moi	137
1989	Yugoslav	/ia	Rock Me	137

YEAR	WINNER	SONG	POINTS	
1971	Monaco	Un banc, un arbre, une rue	128	
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG	. POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WI	NNERS
1974	Sweden	Water WHERE YEAR BETW		
1975	Netherlands	Ding MATCH RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR		
1977	France	L'OIS MEASURES		
1978	Israel	A-Ba MATCH NUMBER() MA	тсн#	
1979	Israel	Halle Halle		
1980	Ireland	What ALL ROWS PER MATCH		
1981	United Kingdom	Makir ALL ROWS PER MATCH		
1982	Germany	Ein H PATTERN (1
1983	Luxembourg	Si la DEFINE)
1984	Sweden	Digg:		
1985	Norway	La de		
1986	Belgium	J'air		
1987	Ireland	Hold		
1988	Switzerland	Ne pa		
1989	Yugoslavia	Rock ORDER BY YEAR;		
1990	Italy	Insieme: 1992	149	
1991	Sweden	Fångad av en stormvind	146	

YEAR	WINNER	SONG	POINTS	
1971	Monaco	Un banc, un arbre, une rue	128	
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER. SONG	. POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WI	NNERS
1974	Sweden	Water WHERE YEAR BETW		
1975	Netherlands	Ding MATCH RECOGNIZE (/
1976	United Kingdom	Save ORDER BY YEAR		
1977	France	L'OIS MEASURES		
1978	Israel	A-Ba MATCH_NUMBER() MA	тсн#	
1979	Israel	Halle		
1980	Ireland	What ALL ROWS PER MATCH		
1981	United Kingdom	Makir ALL ROWS PER MATCH		
1982	Germany	Ein H PATTERN (A		`
1983	Luxembourg	Si la DEFINE)
1984	Sweden	Digg:		
1985	Norway	La de		
1986	Belgium	J'air		
1987	Ireland	Hold		
1988	Switzerland	Ne pa		
1989	Yugoslavia	Rock ORDER BY YEAR;		
1990	Italy	Insieme: 1992	149	
1991	Sweden	Fångad av en stormvind	146	

YEAR	WINNER	SONG	POINTS	
1971	Monaco	Un banc, un arbre, une rue	128	
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG	. POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WI	NNERS
1974	Sweden	Water WHERE YEAR BETW		
1975	Netherlands	Ding MATCH_RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR		
1977	France	L'OIS MEASURES		
1978	Israel	A-Ba MATCH NUMBER() MA	ТСН#	
1979	Israel	Halle		
1980	Ireland	What ALL ROWS PER MATCH		
1981	United Kingdom	Makir ALL Rows PER MATCH		
1982	Germany	Ein B PATTERN (A SAME*)
1983	Luxembourg	SI IA DEETNE)
1984	Sweden	Digg: SAME AS WINNER =		
1985	Norway	La de SAME AS WINNER = 1	PREV(WINNER)	
1986	Belgium	J'air		
1987	Ireland	Hold		
1988	Switzerland	Ne pa		
1989	Yugoslavia	Rock ORDER BY YEAR;		
1990	Italy	Insieme: 1992	149	
1991	Sweden	Fångad av en stormvind	146	

YEAR	WINNER	SONG	POINTS	
1971	Monaco	Un banc, un arbre, une rue	128	
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG, PC	INTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	JROVISION WINNER	S
1974	Sweden	Water WHERE YEAR BETW		
1975	Netherlands	Ding MATCH_RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR		
1977	France	L'OIS MEASURES		
1978	Israel	A-Ba MATCH_NUMBER() MA	ТСН#	
1979	Israel	Halle Halle		
1980	Ireland	What ALL ROWS PER MATCH		
1981	United Kingdom	Makir ALL ROWS PER MATCH		
1982	Germany	Ein b Sil PATTERN (A SAME* DI		
1983	Luxembourg	SI IC DEETNE		
1984	Sweden	DIGGI		
1985	Norway	La de SAME AS WINNER =	· · · -	
1986	Belgium	J'air DIFF AS WINNER !=	A.WINNEK,	
1987	Ireland	Hold		
1988	Switzerland	Ne pa		
1989	Yugoslavia	Rock ORDER BY YEAR;		
1990	Italy	Insieme: 1992	149	
1991	Sweden	Fångad av en stormvind	146	

YEAR	WINNER	SONG	POINTS
1971	Monaco	Un banc, un arbre, une rue	128
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG, POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WINNERS
1974	Sweden		EEN 1971 AND 1991)
1975	Netherlands	Ding MATCH_RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR	
1977	France	L'OI: MEASURES	
1978	Israel	A-Ba MATCH_NUMBER() MA	TCH#
1979	Israel	Halle	
1980	Ireland	What ALL ROWS PER MATCH	Qualifier
1981	United Kingdom	Makin ALL Rows FER MATCH	
1982	Germany	Ein B Cill PATTERN (A SAME* DI	
1983	Luxembourg	S1 L	
1984	Sweden	Digg: SAME AS WINNER = 1	
1985	Norway		
1986	Belgium	J'air DIFF AS WINNER !=	ر MINNER و
1987	Ireland	Hold	
1988	Switzerland	Ne pa	
1989	Yugoslavia	Rock ORDER BY YEAR;	
1990	Italy	Insieme: 1992	149
1991	Sweden	Fångad av en stormvind	146

YEAR	WINNER	SONG	POINTS
1971	Monaco	Un banc, un arbre, une rue	128
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG, POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WINNERS
1974	Sweden		EEN 1971 AND 1991)
1975	Netherlands	Ding MATCH RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR	
1977	France	L'OIS MEASURES	
1978	Israel	A-Ba MATCH NUMBER() MA	тсн#
1979	Israel	Halle Halle	
1980	Ireland	What ALL ROWS PER MATCH	
1981	United Kingdom	Makir ALL ROWS PER MATCH	
1982	Germany	Ein E PATTERN (A SAME* DI	EE, ITVE ETDCT,)
1983	Luxembourg		FF+ LINC_FINSI+)
1984	Sweden	Diggi	
1985	Norway	La de SAME AS WINNER =	• • • •
1986	Belgium	J'air DIFF AS WINNER !=	
1987	Ireland	Hold LIKE_FIRST AS WIN	NER = A.WINNER
1988	Switzerland	Ne pa	
1989	Yugoslavia	Rock ORDER BY YEAR;	
1990	Italy	Insieme: 1992	149
1991	Sweden	Fångad av en stormvind	146

YEAR	WINNER	SONG	POINTS	
1971	Monaco	Un banc, un arbre, une rue	128	
1972	Luxembourg	Après SELECT MATCH#, YEAR,	WINNER, SONG	POINTS
1973	Luxembourg	Tu te FROM (SELECT * FROM E	UROVISION WI	NERS
1974	Sweden	Water WHERE YEAR BETW		
1975	Netherlands	Ding MATCH RECOGNIZE (
1976	United Kingdom	Save ORDER BY YEAR		
1977	France	L'OIS MEASURES		
1978	Israel	A-Ba MATCH NUMBER() MA	ТСН#	
1979	Israel	Halle		
1980	Ireland	What ALL ROWS PER MATCH		
1981	United Kingdom	Makir ALL Rows PER MATCH		
1982	Germany	Ein H PATTERN (A SAME* DI	CET I TVC ETD	ст _т)
1983	Luxembourg	SI IA DEETNE	FFT LIKE_FIN.	51+)
1984	Sweden	DIggi		
1985	Norway	La de SAME AS WINNER =)
1986	Belgium	J'air DIFF AS WINNER !=		
1987	Ireland	Hold LIKE_FIRST AS WIN	NEK = A.WINNI	EK
1988	Switzerland	Ne pa		
1989	Yugoslavia	Rock ORDER BY YEAR;		
1990	Italy	Insieme: 1992	149	
1991	Sweden	Fångad av en stormvind	146	

						This presentation is avai
	MATCH# -	YEAR	WINNER	SONG	POINTS -	
1	1	1972	Luxembourg	Après toi	128	
2	1	1973	Luxembourg	Tu te reconnaîtras	129	
3	1	1974	Sweden	Waterloo	24	
4	1	1975	Netherlands	Ding-a-dong	152	
5	1	1976	United Kingdom	Save Your Kisses for Me	164	i, POINTS
6	1	1977	France	L'oiseau et l'enfant	136	INNERS
7	1	1978	Israel	A-Ba-Ni-Bi	157) 1991)
8	1	1979	Israel	Hallelujah	125	,
9	1	1980	Ireland	What's Another Year	143	
10	1	1981	United Kingdom	Making Your Mind Up	136	
11	1	1982	Germany	Ein bißchen Frieden	161	
12	1	1983	Luxembourg	Si la vie est cadeau	142	
13	2	1984	Sweden	Diggi-Loo Diggi-Ley	145	
14	2	1985	Norway	La det swinge	123	
15	2	1986	Belgium	J'aime la vie	1/6	
16	2	1987	Ireland	Hold Me Now	172	lST+)
17	2	1988	Switzerland	Ne partez pas sans moi	137	
18	2	1989	Yugoslavia	Rock Me	137	وا
19	2	1990	Italy	Insieme: 1992	149	
20	2	1991	Sweden	Fångad av en stormvind	146	JER
-						

ORDER BY YEAR;

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						This presentation is
	MATCH#-	YEAR	WINNER	SONG	POINTS-	
1	1	1972	Luxembourg	Après toi	128	
2	1	1973	Luxembourg	Tu te reconnaîtras	129	
3	1	1974	Sweden	Waterloo	24	
4	1	1975	Netherlands	[™] Ding-a-dong	152	
5	1	1976	United Kingdo	SELECT MATCH#, YEAR, WIN	NER, SONG	G. POINTS
6	1	1977	France	FROM (SELECT * FROM EURO		
7	1	1978	Israel	WHERE YEAR BETWEEN		
8	1	1979	Israel	MATCH RECOGNIZE (
9	1	1980	Ireland	ORDER BY YEAR		
10	1	1981	United Kingdo	MEASURES		
11	1	1982	Germany			
12	1	1983	Luxembourg	MATCH_NUMBER() MATCH	Ħ	
13	2	1984	Sweden			
14	2	1985	Norway	ALL ROWS PER MATCH		
15		1986	Belgium			
16	2	1987	Ireland	PATTERN (A SAME* DIFF+	LIKE_FIR	RST+)
17	2	1988	Switzerland	DEFINE		
18	2	1989	Yugoslavia	SAME AS WINNER = PRE	V(WINNER)	6
19	2	1990	Italy	DIFF AS WINNER != A.	WINNER,	
20	2	1991	Sweden	LIKE_FIRST AS WINNER	= A.WINN	IER

) ORDER BY YEAR;

				0010	DOINTO		able in http://db-oriented.com/presentations
	MATCH#		WINNER	SONG		VAR -	-
1	1		Luxembourg	Après toi	128		_
2	1	1973	Luxembourg	Tu te reconnaîtras	129	SAME	
3	1	1974	Sweden	Waterloo	24	DIFF	
4	1	1975	Netherlands	Ding-a-dong	152	DIFF	
5	1	1976	United Kingdom	Save Your Kisses for Me	164	DIFF	AR
6	1	1977	France	L'oiseau et l'enfant	136	DIFF	
7	1	1978	Israel	A-Ba-Ni-Bi	157	DIFF	-
8	1	1979	Israel	Hallelujah	125	DIFF	
9	1	1980	Ireland	What's Another Year	143	DIFF	-
10	1	1981	United Kingdom	Making Your Mind Up	136	DIFF	
11	1	1982	Germany	Ein bißchen Frieden	161	DIFF	*
12	1	1983	Luxembourg	Si la vie est cadeau	142	LIKE_FIRST	
13	2	1984	Sweden	Diggi-Loo Diggi-Ley	145	Α	*
14	2	1985	Norway	La det swinge	123	DIFF	
15	2	1986	Belgium	J'aime la vie	176	DIFF	
16	2	1987	Ireland	Hold Me Now	172	DIFF	
17	2	1988	Switzerland	Ne partez pas sans moi	137	DIFF	
18	2	1989	Yugoslavia	Rock Me	137	DIFF	
19	2	1990	Italy	Insieme: 1992	149	DIFF	
20	2	1991	Sweden	Fångad av en stormvind	146	LIKE_FIRST	
)				

	MATCH#	YFAR	WINNER	SONG	POINTS	VAR	in <u>http://db-oriented.com</u>
1			Monaco	Un banc, un arbre, une rue	12		
2	1		Luxembourg	Après toi		8 A	
3	1	1973	Luxembourg	Tu te reconnaîtras	12	9 SAME	
4	1	1974	Sweden	Waterloo	2	4 DIFF	
5	1	1975	Netherlands	Ding-a-dong	15	2 DIFF	
6	1	1976	United Kingdom	Save Your Kisses for Me	16	4 DIFF	
7	1	1977	France	L'oiseau et l'enfant	13	6 DIFF	••
8	1	1978	Israel	A-Ba-Ni-Bi		7 DIFF	•
9	1		Israel	Hallelujah		5 DIFF	
10	1		Ireland	What's Another Year		3 DIFF	• •
11	1		United Kingdom	Making Your Mind Up		6 DIFF	
12	1		Germany	Ein bißchen Frieden		1 DIFF	
13	1		Luxembourg	Si la vie est cadeau		2 LIKE_FIRST	
14	2		Sweden	Diggi-Loo Diggi-Ley		5 A	
15	2		Norway	La det swinge		3 DIFF	
16	2		Belgium	J'aime la vie		6 DIFF	
17	2		Ireland	Hold Me Now		2 DIFF	
18	2		Switzerland	Ne partez pas sans moi		7 DIFF	
19	2		Yugoslavia	Rock Me		7 DIFF	
20	2	1990	•	Insieme: 1992		9 DIFF	
21	2	1991	Sweden	Fångad av en stormvind	14	6 LIKE_FIRST	
			OR	DER BY YEAR;			

	MATCH#	YEAR	WINNER	SONG POINTS VAR
1			Monaco	Un banc, un arbre, une rue 128
2	1			Après toi 128 A
2			Luxembourg	
			Luxembourg	Tu te reconnaîtras 129 SAME
4			Sweden	Waterloo 24 DIFF
5		19/5	Netherlands	SELECT MATCH#, YEAR, WINNER, CONS, POINTS, VAR
6		1976	United Kingdo	FROM (SELECT
7		1977	France	WHERE PAST LAST ROW (the default)
8		1978	Israel	MATCH RF TO NEXT ROW
9	1	1979	Israel	ORDER TO FIRST var
10	1	1980	Ireland	
11	1	1981	United Kingdo	MEASUR TO [LAST] var
12	1	1982	Germany	MATCH
13	1	1983	Luxembourg	CLASSIFI () Van
14	2	1984	Sweden	ALL RONG PER MATCH WITH UNMATCHED ROWS
15	2	1985	Norway	AFTER MATCH SKIP PAST LAST ROW
16			Belgium	PATTERN (A SAME* DIFF+ LIKE FIRST+)
17			Ireland	DEFINE
18			Switzerland	SAME AS WINNER = PREV(WINNER),
19			Yugoslavia	DIFF AS WINNER != A.WINNER,
20		1990		
21			Sweden	LIKE_FIRST AS WINNER = A.WINNER
21	2	1991	Sweden	
				ORDER BY YEAR;

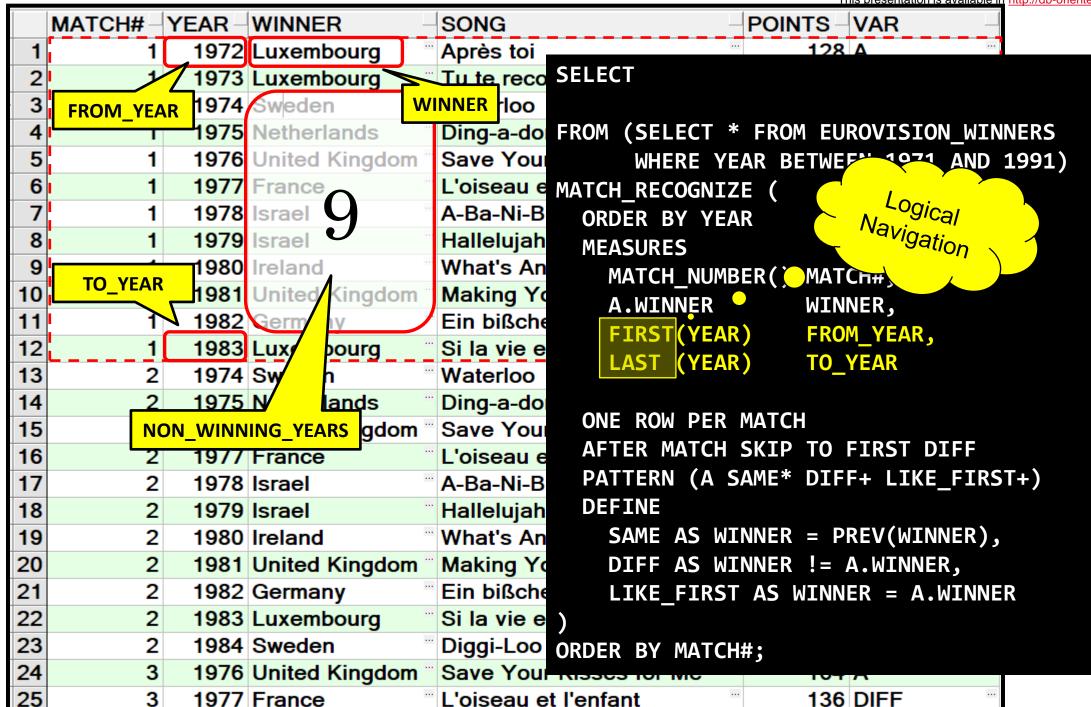
1					4	his presentation is available i
	MATCH#-		WINNER	SONG	POINTS -	VAR
1	1		Luxembourg	Après toi	128	Α
2	1	1973	Luxembourg	Tu te reconnaîtras	129	SAME
3	1	1974	Sweden	Waterloo	24	DIFF
4	1	1975	Netherlands	Ding-a-dong	152	DIFF
5	1	1976	United Kingdom	Save Your Kisses for Me	164	DIFF
6	1	1977	France	L'oiseau et l'enfant	136	DIFF
7	1	1978	Israel	A-Ba-Ni-Bi	157	DIFF
8	1	1979	Israel	Hallelujah	125	DIFF
9	1	1980	Ireland	What's Another Year	143	DIFF
10	1	1981	United Kingdom	Making Your Mind Up	136	DIFF
11	1	1982	Germany	Ein bißchen Frieden	161	DIFF
12	1	1983	Luxembourg	Si la vie est cadeau	142	LIKE_FIRST
13	2	1974	Sweden	Waterloo	24	Α
14	2	1975	Netherlands	Ding-a-dong	152	DIFF
15	2	1976	United Kingdom	Save Your Kisses for Me	164	DIFF
16	2	1977	France	L'oiseau et l'enfant	136	DIFF
17	2	1978	Israel	A-Ba-Ni-Bi	157	DIFF
18	2	1979	Israel	Hallelujah	125	DIFF
19	2	1980	Ireland	What's Another Year	143	DIFF
20	2	1981	United Kingdom	Making Your Mind Up	136	DIFF
21	2	1982	Germany	Ein bißchen Frieden	161	DIFF
22	2		Luxembourg	Si la vie est cadeau	142	DIFF
23		1984	Sweden	Diggi-Loo Diggi-Ley	145	LIKE_FIRST
24	3	1976	United Kingdom	Save Your Kisses for Me	164	Α
25				L'oiseau et l'enfant	136	DIFF

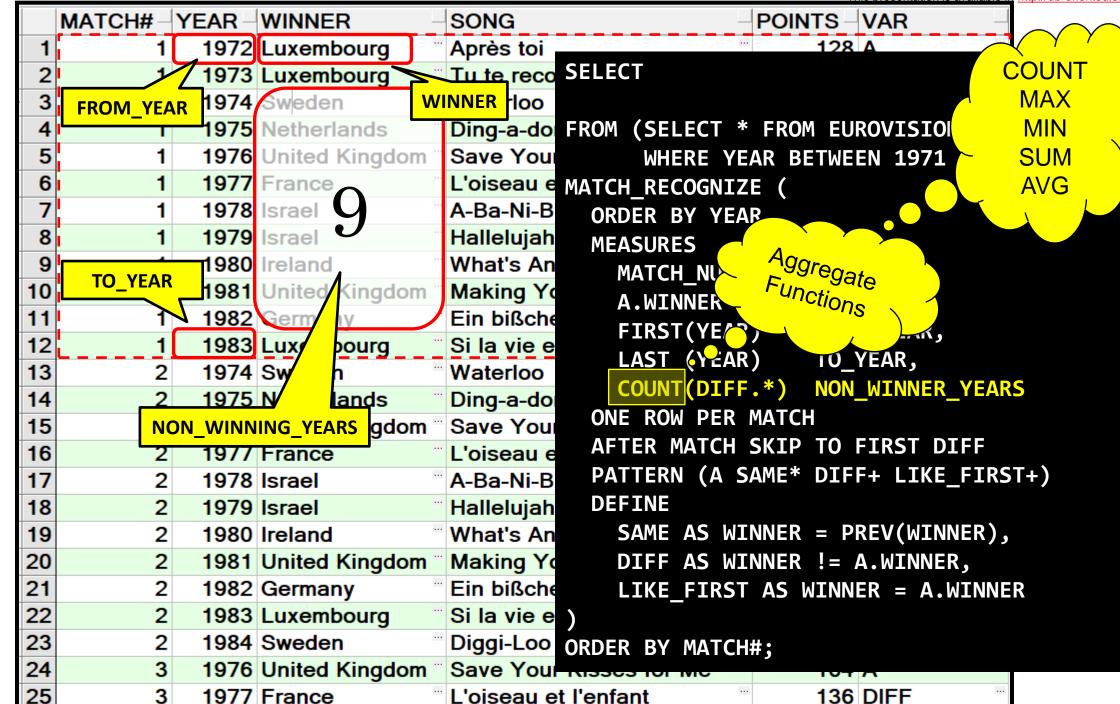
1 1		1						I his presentation is available
	MATCH# -	Y		WINNER	_	SONG	_	POINTS VAR
1	1	L		Luxembourg		Après toi		128 A
2		2	1973	Luxembourg		Tu te reconnaîtras		129 SAME
3	FROM YEA	R	1974	Sweden	W	NNER 100		24 DIFF
4			1975	Netherlands		Ding-a-dong		152 DIFF
5	1		1976	United Kingdo	om 🗉	Save Your Kisses for Me		164 DIFF
6	1		1977	France		L'oiseau et l'enfant		136 DIFF
7	1		1978	Israel		A-Ba-Ni-Bi		157 DIFF
8	1		1979	Israel		Hallelujah		125 DIFF
9			1980	Ireland		What s ther Year		143 DIFF
10	TO_YEAR		1981	United Kingde		👞 king Yo. Mind l p		36 DIFF
11	י ז	7	1982	Germ		Ein pißchen Leder		
12	1		1983	Lu urg		Si la vie est carau		-+2 LIKE_FIRST
13	2		19 1	Swh		Waterloo		24 A
14	_2		197	lands		Ding-a-don		152 DIFF
15	N	ON		ING_ EARS gdd	om	ave Your Lases for Me		164 DIFF
16	2		197	Fra		pigeau et l'enfant		136 DIFF
17	2		197	.ərat		A-Ba-Ni-Bi		157 DIFF
18	2		1979	Israe		Hallelujah		125 DIFF
19	2		1980	reland		What's Another Year		143 DIFF
20	2		1981	United Kingdo	om	Making Your Mind Up		136 DIFF
21	2		1982	Germany		Ein bißchen Frieden		161 DIFF
22	2		1983	Luxembourg		Si la vie est cadeau		142 DIFF
23	2		1984	Sweden		Diggi-Loo Diggi-Ley		145 LIKE_FIRST
24	3		1976	United Kingdo	om 🗉	Save Your Kisses for Me		164 A
25	3		1977	France		L'oiseau et l'enfant		136 DIFF

	MATCH#	Y	EAR	WINNE	R		SONG	
1		ī	1972	Luxem	bourg		Après toi	128 A
2		1	1973	Luxem	bourg		Tu te reco	SELECT
3	FROM YE		1974	Swede	n	W	INNER 100	
4				Nether	lands		Ding-a-do	FROM (SELECT * FROM EUROVISION_WINNERS
5		I	1976	United	Kingdo	m	Save You	WHERE YEAR BETWEEN 1971 AND 1991)
6	· ·	I	1977	France	\mathbf{O}		L'oiseau e	MATCH_RECOGNIZE (
7		I	1978	Israel	9		A-Ba-Ni-B	
8	•	I	1979	Israel	$\boldsymbol{\mathcal{O}}$		Hallelujah	MEASURES
9			1980	Ireland			What's An	MATCH_NUMBER() MATCH#
10		к Г	1981	United	Kingdo	m "	Making Yo	
11		\searrow	1982	Germ	iy		Ein bißche	
12	·		1983	Lux	ourg		Si la vie e	
13		2	1974	Sw	n		Waterloo	
14		2	1975	N	lands		Ding-a-do	
15			I_WINN	ING_YEA	<mark>RS</mark> gdo	m "	Save You	
16		2	1977	France			L'oiseau e	
17		2	1978	Israel			A-Ba-Ni-B	PATTERN (A SAME* DIFF+ LIKE_FIRST+)
18		2	1979	Israel			Hallelujah	DEFINE
19		2	1980	Ireland			What's An	SAME AS WINNER = PREV(WINNER),
20		2	1981	United	Kingdo	m	Making Yo	DIFF AS WINNER != A.WINNER,
21		2	1982	Germa	ny		Ein bißche	LIKE_FIRST AS WINNER = A.WINNER
22		2		Luxem			Si la vie e	
23		2	1984	Swede	n		Diggi-Loo	ORDER BY MATCH#;
24		3	1976	United	Kingdo	m "	Save You	
25		3	1977	France			L'oiseau e	

	MATCH# Y	EAR -	WINNER	SONG	
-	1	1972	Luxembourg	Après toi	- 128 A -
2	2 1	<u> </u>	Luxembourg	Tu te reco	SELECT
	FROM YEAR	1974	Sweden	WINNER 100	
4	1		Netherlands	Ding-a-do	FROM (SELECT * FROM EUROVISION_WINNERS
Ę	5 1	1976	United Kingdo	m Save You	WHERE YEAR BETWEEN 1971 AND 1991)
	δ <mark>i 1</mark>	1977	France	L'oiseau e	MATCH_RECOGNIZE (
	7 1	1978	Israel	A-Ba-Ni-B	
8	3 1	1979	Israel	Hallelujah	
9		1980	Ireland	What's An	
10		1981	United Kingdo	m Making Yo	
11		1982	Germy	Ein bißche	
12	2 1	1983	Lux oourg	<u> </u>	
13	3 2	1974	Sw h	Waterloo	
14	1 2	1975	N lands	Ding-a-do	
15		N_WINN	ING_YEARS gdoi	m Save You	
16	6 2	1977	France	L'oiseau e	
17	7 2	1978	Israel	A-Ba-Ni-B	
18	3 2	1979	Israel	Hallelujah	
19	2	1980	Ireland	What's An	SAME AS WINNER = PREV(WINNER),
20) 2	1981	United Kingdor	m 🖱 Making Yo	DIFF AS WINNER != A.WINNER,
2	1 2	1982	Germany	Ein bißche	LIKE_FIRST AS WINNER = A.WINNER
22	2 2	1983	Luxembourg	🛛 Si la vie e	
23	3 2	1984	Sweden	Diggi-Loo	ORDER BY MATCH#;
24	4 3	1976	United Kingdor	m Save You	
25	5 3	1977	France	L'oiseau e	et l'enfant 136 DIFF

	MATCH# - YE	EAR	WINNER	SONG	
1	1	1972	Luxembourg	Après toi	128 A
2	1	1973	Luxembourg	Tu te reco	SELECT
3	FROM YEAR	1974	Sweden	WINNER 100	
4		1975	Netherlands	Ding-a-do	FROM (SELECT * FROM EUROVISION_WINNERS
5	1	1976	United Kingdor	m Save You	WHERE YEAR BETWEEN 1971 AND 1991)
6	i 1	1977	France	L'oiseau e	MATCH_RECOGNIZE (
7	1	1978	Israel	A-Ba-Ni-B	
8	1	1979	Israel	Hallelujah	MEASURES
9		1980	Ireland	What's An	
10		1981	United Kingdor	m Making Yo	A.WINNER WINNER
11		1982	Germ ly	Ein bißche	
12	<u> </u>	1983	Lux pourg	<u> </u>	
13	2	1974	Sw/h	Waterloo	
14	2	1975	N lands	Ding-a-do	
15	NON_		ING_YEARS gdor	m Save You	
16	2	1977	France	L'oiseau e	
17			Israel	A-Ba-Ni-B	
18	2	1979	Israel	Hallelujah	
19		1980	Ireland	What's An	SAME AS WINNER = PREV(WINNER),
20		1981	United Kingdor	m 🛛 Making Yo	
21	2	1982	Germany	Ein bißche	LIKE_FIRST AS WINNER = A.WINNER
22		1983	Luxembourg	🗆 Si la vie e	
23	2	1984	Sweden	Diggi-Loo	ORDER BY MATCH#;
24	3	1976	United Kingdor	m Save You	
25	3	1977	France	L'oiseau e	t l'enfant 136 DIFF





1	1		4	4	I his presentation is available in http://db-oriented.com
	MATCH#-			SONG	- POINTS - VAR -
1	1	1972	Luxembourg	Après toi	
2	<u> </u>	1973		Tu te reco	SELECT MATCH#, WINNER, FROM_YEAR, TO_YEAR,
3	FROM YEA	R 1974	Sweden W	INNER 100	NON_WINNER_YEARS
4	I <u> </u>		Netherlands	Ding-a-do	FROM (SELECT * FROM EUROVISION_WINNERS
5	1	1976	United Kingdom	Save You	WHERE YEAR BETWEEN 1971 AND 1991)
6	i 1	1977	France	L'oiseau e	MATCH_RECOGNIZE (
7	1	1978	Israel	A-Ba-Ni-B	
8	1	1979	Israel	Hallelujah	
9		1980	Ireland	What's An	
10	TO_YEAR	1981	United Kingdom	Making Yo	A.WINNER WINNER,
11	<u>י</u> ז	1982	Germy	Ein bißche	
12	1	1983	Lux pourg	Si la vie e	FIRST(YEAR) FROM_YEAR,
13	2	1974	Sw n	Waterloo	LAST (YEAR) TO_YEAR,
14	_ 2	1975	N lands	Ding-a-do	COUNT(DIFF.*) NON_WINNER_YEARS
15	NC	<mark>DN_WINN</mark>	ING_YEARS gdom	Save You	ONE ROW PER MATCH
16	2	1977	France	L'oiseau e	
17	2	1978	Israel	A-Ba-Ni-B	PATTERN (A SAME* DIFF+ LIKE_FIRST+)
18	2	1979	Israel	Hallelujah	DEFINE
19	2	1980	Ireland	What's An	SAME AS WINNER = PREV(WINNER),
20	2	1981	United Kingdom	Making Yo	DIFF AS WINNER != A.WINNER,
21	2	1982	Germany	Ein bißche	
22	2		Luxembourg	Si la vie e	
23	2	1984	Sweden		ORDER BY MATCH#;
24	3	1976	United Kingdom	Save You	
25				L'oiseau e	

					This presentation is available in http://db-oriented.c
	MATCH#	YEAR	WINNER	SONG	
1		1972	Luxembourg	Après toi	··· 128 A ···
2	!	1973	Luxembourg	Tu te reco	<pre>SELECT MATCH#, WINNER, FROM_YEAR, TO_YEAR,</pre>
3	FROM YE	AR 1974	Sweden	WINNER 100	NON_WINNER_YEARS
4			Netherlands	Ding-a-do	FROM (SELECT * FROM EUROVISION_WINNERS
5	1	1976	United Kingdon	n Save You	WHERE YEAR BETWEEN 1971 AND 1991)
6	1	1977	France	L'oiseau e	MATCH_RECOGNIZE (
7	1	1978	Israel	A-Ba-Ni-B	ORDER BY YEAR
8	1	1979	Israel	Hallelujah	
9		1980	Ireland	What's An	
10	TO_YEA	^K 1981	United Kingdon	n Making Yo	A.WINNER WINNER,
11		1982	Germy	Ein bißche	
12	1	1983	Lux pourg	Si la vie e	FIRST(YEAR) FROM_YEAR,
13	2	2 1974	Sw h	Waterloo	LAST (YEAR) TO_YEAR,
14		2 1975	N lands	Ding-a-do	COUNT(DIFF.*) NON_WINNER_YEARS
15		ION_WINN	IING_YEARS gdon	n Save You	ONE ROW PER MATCH
16		2 1977	France	[—] L'oiseau e	
17	2	2 1978	Israel	A-Ba-Ni-B	PATTERN (A SAME* DIFF+ LIKE_FIRST+)
18	-	1070			
19	MATC			ROM_YEAR -	TO_YEAR NON_WINNER_YEARS R),
20	1		embourg	1972	1983 9
21	2	2 Swe		1974	I.NINER
22	3	3 Uni	ted Kingdom	1976	1981 4
23	4	4 Irela	and	1980	1987 6
24	5	5 Swe	eden	1984	1991 6
25	3	8 1977	France	L'oiseau et	t l'enfant 136 DIFF

	MATCH#	YE	AR -	WINNE	R		SONG			POINTS -	VAR	
1	1	1	1972	Luxemb	oourg		Après	toi		128	A	
2	<u> </u>	71	1973	Luxemb	oourg	_	<u>Tu te</u> r	econnaîtras	/	129	SAME	
3	FROM YEA		1974	Sweder	n	WI	NNER 1	00		24	DIFF	
4	·		1975	Netherl	ands		Ding-a	-dona		152	DIFF	
5	1	1	1976	United	Kingdo	m "	Save '				DIFF	
6	i 1	1	1977	France	\mathbf{O}		L'oise	AVG_POINTS_OF_WI	NNE	R 136	DIFF	
7	1	1	1978	Israel	9		A-Ba-			157	DIFF	
8	1	1	1979	Israel	$\boldsymbol{\mathcal{O}}$		Hallelu	ijah 🔪		125	DIFF	
9		1	980	Ireland		•••	What's	Another Year		143	DIFF	
10	TO_YEAR	الے ا	1981	United	Kingdo	m 🕆	Making	g Your Mind Up		136	DIFF	
11	<u>1</u>	1	1982	Germ	IV	ノ	Ein biß	Schen Frieden		161	DIFF	
12	1	1	983	Lux	ourg		Si la vi	e est cadeau		142	LIKE_	FIRST
13	2	1	1974	Sw	n		Waterl	00		24	Α	
14	2	1	975	N 1	ands		Ding-a	-dong		152	DIFF	
15	NO	DN_\	WINN	ING_YEA	<mark>RS </mark> gdo	m	Save Y	our Kisses for Me		164	DIFF	
16	2	1	977	France			L'oisea	au et l'enfant		136	DIFF	
17	2	1	978	Israel			A-Ba-N	li-Bi		157	DIFF	
18	2	1	979	Israel			Hallelu	ijah		125	DIFF	
19	2	1	980	Ireland			What's	Another Year		143	DIFF	
20	2	1	981	United	Kingdo	m "	Making	g Your Mind Up		136	DIFF	
21	2	1	982	Germar	пу		Ein biß	Schen Frieden		161	DIFF	
22	2	1	983	Luxemb	oourg		Si la vi	e est cadeau		142	DIFF	
23	2	1	1984	Sweder	n		Diggi-L	.oo Diggi-Ley		145	LIKE_	FIRST
24	3	1	976	United	Kingdo	m "	Save Y	our Kisses for Me		164	Α	
25	3	1	977	France			L'oisea	au et l'enfant		136	DIFF	

-			Tł	nis presentation is available ir
M	ATCH#-YEAR-WINNER -SONG	_	POINTS -	VAR –
1	SELECT *		 128	
2	FROM (SELECT * FROM EUROVISION WINNERS			SAME
3	WHERE YEAR BETWEEN 1971 AND 1991)		 	DIFF
4	MATCH RECOGNIZE (DIFF
5	ORDER BY YEAR	Ме	 	DIFF
6	MEASURES		 	DIFF
7	MATCH_NUMBER() MATCH#,		 	DIFF
8				DIFF
9	A.WINNER WINNER,		 	DIFF
10	FIRST(YEAR) FROM_YEAR,		 	DIFF
11	LAST (YEAR) TO_YEAR,			DIFF
12	COUNT(DIFF.*) NON_WINNER_YEARS,		 142	LIKE_FIRST
13	AVG(DIFF.POINTS) AVG_POINTS_OF_OTHERS		 24	Α
14			 152	DIFF
15	ONE ROW PER MATCH	Ме	 164	DIFF
16	AFTER MATCH SKIP TO FIRST DIFF		 136	DIFF
17	PATTERN (A SAME* DIFF+ LIKE_FIRST+)		 157	DIFF
18			 125	DIFF
19	DEFINE		 143	DIFF
20	SAME AS WINNER = PREV(WINNER),		 136	DIFF
21	DIFF AS WINNER != A.WINNER,		 161	DIFF
22	LIKE FIRST AS WINNER = A.WINNER		 142	DIFF
23	LIKE_FIKST AS WINNER = A.WINNER		 145	LIKE_FIRST
24		Ме	 164	Α
25	ORDER BY MATCH#;		 136	DIFF

...

...

....

		Tł	nis presentation is available
	MATCH# YEAR WINNER SONG	POINTS	VAR
1	SELECT *	128	A
2	FROM (SELECT * FROM EUROVISION WINNERS	129	SAME
3	WHERE YEAR BETWEEN 1971 AND 1991)	24	DIFF
4	MATCH_RECOGNIZE (152	DIFF
5	ORDER BY YEAR	164	DIFF
6	MEASURES	136	DIFF
7		157	DIFF
8	MATCH_NUMBER() MATCH#,	125	DIFF
9	A.WINNER WINNER,	143	DIFF
10	FIRST(YEAR) FROM_YEAR,	136	DIFF
11	LAST (YEAR) TO_YEAR,	161	DIFF
12	COUNT(DIFF.*) NON_WINNER_YEARS,	142	LIKE_FIRST
13	AVG(DIFF.POINTS) AVG_POINTS_OF_OTHERS	24	Α
14		152	DIFF
15	ONE ROW PER MATCH	164	DIFF
16	AFTER MATCH SKIP TO FIRST DIFF	136	DIFF
17	PATTERN (A SAME* DIFF+ LIKE FIRST+)	157	DIFF
18	SUBSET $W = (A, SAME, LIKE FIRST)$	125	DIFF
19	DEFINE	143	DIFF
20	SAME AS WINNER = PREV(WINNER),	136	DIFF
21	DIFF AS WINNER != A.WINNER,	161	DIFF
22		142	DIFF
23	LIKE_FIRST AS WINNER = A.WINNER	145	LIKE_FIRST
24		164	Α
25	ORDER BY MATCH#;	136	DIFF

			_	Tr	nis presentation is available	e ir
MA	TCH#-YEAR-WINNER -SONG		_	POINTS -	VAR	
1	SELECT *			128	Α	
2	FROM (SELECT * FROM EUROVISION WINNERS			129	SAME	
3	WHERE YEAR BETWEEN 1971 AND 1991)			24	DIFF	
4	MATCH_RECOGNIZE (152	DIFF	
5	ORDER BY YEAR	Me		164	DIFF	
6	MEASURES			136	DIFF	
7				157	DIFF	
8	MATCH_NUMBER() MATCH#,			125	DIFF	
9	A.WINNER WINNER,			143	DIFF	
10	FIRST(YEAR) FROM_YEAR,			136	DIFF	
11	LAST (YEAR) TO_YEAR,			161	DIFF	
12	COUNT(DIFF.*) NON_WINNER_YEARS,			142	LIKE_FIRST	
13	AVG(DIFF.POINTS) AVG_POINTS_OF_OTHERS,			24	Α	
14	AVG(W.POINTS) AVG_POINTS_OF_WINNER			152	DIFF	
15	ONE ROW PER MATCH	Me		164	DIFF	
16	AFTER MATCH SKIP TO FIRST DIFF			136	DIFF	
17	PATTERN (A SAME* DIFF+ LIKE FIRST+)			157	DIFF	
18	SUBSET W = (A, SAME, LIKE_FIRST)			125	DIFF	
19	DEFINE			143	DIFF	
20	SAME AS WINNER = PREV(WINNER),			136	DIFF	
21	DIFF AS WINNER != A.WINNER,			161	DIFF	
22				142	DIFF	
23	LIKE_FIRST AS WINNER = A.WINNER			145	LIKE_FIRST	
24		Me		164	Α	
25	ORDER BY MATCH#;			136	DIFF	

```
SELECT MATCH#, WINNER, FROM YEAR, TO YEAR,
      NON_WINNER_YEARS
FROM (SELECT * FROM EUROVISION_WINNERS
     WHERE YEAR BETWEEN 1971 AND 1991)
MATCH_RECOGNIZE (
 ORDER BY YEAR
  MEASURES
   MATCH_NUMBER() MATCH#,
   A.WINNER WINNER,
   FIRST(YEAR) FROM_YEAR,
   LAST (YEAR) TO_YEAR,
   COUNT(DIFF.*) NON_WINNER_YEARS
  ONE ROW PER MATCH
  AFTER MATCH SKIP TO FIRST DIFF
  PATTERN (A SAME* DIFF+ LIKE_FIRST+)
  DEFINE
   SAME AS WINNER = PREV(WINNER),
   DIFF AS WINNER != A.WINNER,
   LIKE_FIRST AS WINNER = A.WINNER
```

ORDER BY MATCH#;

```
SELECT MATCH#, WINNER, FROM_YEAR, TO_YEAR,
      NON_WINNER_YEARS
FROM EUROVISION_WINNERS
MATCH_RECOGNIZE (
 ORDER BY YEAR
  MEASURES
   MATCH_NUMBER() MATCH#,
   A.WINNER WINNER,
   FIRST(YEAR) FROM_YEAR,
   LAST (YEAR) TO YEAR,
   COUNT(DIFF.*) NON_WINNER_YEARS
  ONE ROW PER MATCH
  AFTER MATCH SKIP TO FIRST DIFF
  PATTERN (A SAME* DIFF+ LIKE_FIRST+)
  DEFINE
   SAME AS WINNER = PREV(WINNER),
   DIFF AS WINNER != A.WINNER,
   LIKE_FIRST AS WINNER = A.WINNER
```

ORDER BY NON_WINNER_YEARS, MATCH#;

MATCH#	WINNER	FROM_YEAR	TO_YEAR	NON_WINNER_YEARS
2	Netherlands	1957	1959	1
3	France	1958	1960	1
5	France	1960	1962	1
29	Ireland	1992	1996	1
35	Sweden	2012	2015	2
6	Luxembourg	1961	1965	3
18	United Kingdom ···	1976	1981	4
25	Ireland	1987	1994	4
37	Ukraine	2016	2022	4
13	Netherlands	1969	1975	5
10	Luxembourg	1965	1973	6
20	Ireland	1980	1987	6
23	Sweden	1984	1991	6
36	Sweden	2015	2023	6
28	Sweden	1991	1999	7
12	United Kingdom	1967	1976	8
4	Netherlands	1959	1969	9
14	Ireland	1970	1980	9
15	Luxembourg	1972	1983	9
16	Sweden	1974	1984	9
24	Norway ····	1985	1995	9
34	Ukraine	2004	2016	11
32	Sweden	1999	2012	12
33	Denmark	2000	2013	12
30	Norway	1995	2009	13
7	France	1962	1977	14
21	United Kingdom ···	1981	1997	15
19	Israel	1978	1998	18
31	Israel	1998	2018	19
9	Italy …	1964	1990	25
	Germany	1982	2010	27
	Italy …	1990	2021	29
	Switzerland	1956	1988	31
26	Switzerland	1988	2024	34
8	Denmark	1963	2000	36
17	Netherlands	1975	2019	43
11	Austria	1966	2014	47

SELECT MATCH#, WINNER, FROM_YEAR, TO_YEAR, NON_WINNER_YEARS FROM EUROVISION_WINNERS MATCH_RECOGNIZE (ORDER BY YEAR MEASURES MATCH_NUMBER() MATCH#, A.WINNER WINNER, FIRST(YEAR) FROM_YEAR, LAST (YEAR) TO YEAR, COUNT(DIFF.*) NON_WINNER_YEARS ONE ROW PER MATCH AFTER MATCH SKIP TO FIRST DIFF PATTERN (A SAME* DIFF+ LIKE_FIRST+) DEFINE SAME AS WINNER = PREV(WINNER), DIFF AS WINNER != A.WINNER, LIKE_FIRST AS WINNER = A.WINNER

ORDER BY NON_WINNER_YEARS, MATCH#;

DISCLAIMER



CONTENT ~

CHI SIAMO

EVENTI ~

	13:00 - 14:00	Pranzo Lunch			
		(room "Alda Merini")	(room "Cedro")		
	14:00 – 14:45	Paolo Zampolini - Technology Reply Trasformazione workload Database Oracle da AWS verso OCI in architettura multicloud	Gianni Ceresa - DATAlysis LLC Oracle ACE Director Analytics in 2024 can hurt your database in new, unexpected, ways 💥		
	15:00 – 15:45	Niall Mc Phillips - Long Acre sàrl Oracle ACE Pro What's Our Vector, Victor? Navigating AI Vector Searches in Oracle 23ai #	Giovanni Rosa - Technology Reply Automatizzare la documentazione di codice legacy con IA Generativa sfruttando i servizi OCI AI Vector Search		
	16:00 - 16:45	Oren Nakdimon - Moovit Oracle ACE Director Write Less (Code) with More (Features)	Piet de Visser - PDVBV Oracle ACE Pro Distributed databases, what to expect 🎇		
	17:00 – 17:45	Neil Chandler - Chandler Systems Ltd Oracle ACE Director Fundamental Oracle Security – What Many Of You Are Not Doing 🗮	Oren Nakdimon - Moovit Oracle ACE Director Oracle SQL Pattern Matching Made Easy 💥		
	17:45 – 18:00	Conclusione GoodBye Message			

COLLABORA CON NOI

ORGANIZZAZIONE BLOG

(
select route_name,
 departure_time
from ...
where ...

(
 select route_name,
 departure_time
 from ...
 where ...
) match_recognize (



```
(
  select route_name,
     departure_time
  from ...
  where ...
) match_recognize (
     partition by route_name
     order by departure_time
```

```
(
  select route_name,
      departure_time
  from ...
  where ...
) match_recognize (
      partition by route_name
      order by departure_time
```

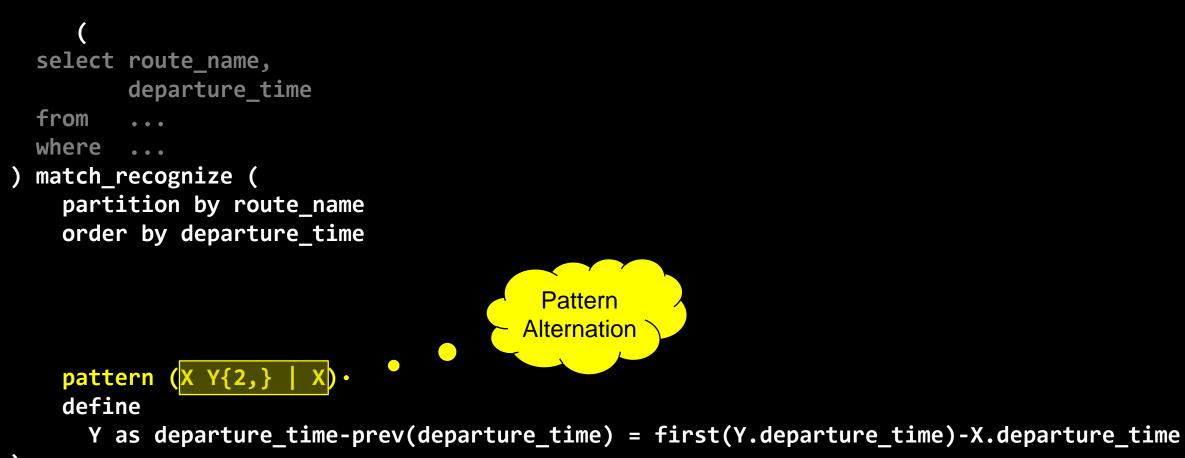
pattern (X Y{2,})

define

Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time

```
(
  select route_name,
     departure_time
  from ...
  where ...
) match_recognize (
     partition by route_name
     order by departure_time
```

```
pattern (X Y{2,} )
define
   Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```



```
(
select route_name,
    departure_time
from ...
where ...
) match_recognize (
    partition by route_name
    order by departure_time
    measures
```

```
pattern (X Y{2,} | X)
define
   Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
(
  select route_name,
      departure_time
  from ...
  where ...
) match_recognize (
    partition by route_name
    order by departure_time
    measures X.departure_time from_time,
```

```
pattern (X Y{2,} | X)
define
   Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
(
select route_name,
    departure_time
from ...
where ...
) match_recognize (
    partition by route_name
    order by departure_time
    measures X.departure_time from_time,
        last(Y.departure_time) to_time,
```

```
pattern (X Y{2,} | X)
define
X as departure time prov(departure time) = finst(V departure)
```

Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time

```
(
select route_name,
    departure_time
from ...
where ...
) match_recognize (
    partition by route_name
    order by departure_time
    measures X.departure_time from_time,
        last(Y.departure_time) to_time,
        (first(Y.departure_time)-X.departure_time)*24*60 minutes,
```

pattern (X Y{2,} | X)

define

Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time

```
select route name,
        departure time
 from
         • • •
 where
         . . .
) match_recognize (
   partition by route_name
   order by departure_time
   measures X.departure_time from_time,
             last(Y.departure_time) to_time,
             (first(Y.departure_time)-X.departure_time)*24*60 minutes,
             count(*) number_of_trips
   pattern (X Y\{2,\} | X)
   define
     Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
select route name,
        departure time
 from
         • • •
 where
         . . .
) match_recognize (
   partition by route_name
   order by departure_time
   measures X.departure_time from_time,
             last(Y.departure_time) to_time,
             (first(Y.departure_time)-X.departure_time)*24*60 minutes,
             count(*) number_of_trips
   pattern (X Y\{2,\} | X)
   define
     Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

select route_name, number_of_trips,

```
select route name,
        departure time
 from
         • • •
 where
         . . .
) match_recognize (
   partition by route_name
   order by departure_time
   measures X.departure time from time,
             last(Y.departure_time) to_time,
             (first(Y.departure_time)-X.departure_time)*24*60 minutes,
             count(*) number_of_trips
   pattern (X Y\{2,\} | X)
   define
     Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
select route_name, number_of_trips,
       to_char(from_time, 'hh24:mi')
         ||nvl2(to_time,
                ' - '||to_char(to_time,'hh24:mi')||' every '||minutes||' minutes',
                null) departures
  select route name,
         departure time
  from
         . . .
  where
         . . .
) match_recognize (
    partition by route name
    order by departure time
    measures X.departure_time from_time,
             last(Y.departure_time) to_time,
             (first(Y.departure_time)-X.departure_time)*24*60 minutes,
             count(*) number of trips
    pattern (X Y\{2,\} | X)
    define
      Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
select route_name, number_of_trips,
       to_char(from_time, 'hh24:mi')
         ||nvl2(to_time,
                ' - '||to_char(to_time,'hh24:mi')||' every '||minutes||' minutes',
                null) departures
  select route name,
         departure time
  from
         • • •
  where
         . . .
) match_recognize (
    partition by route name
    order by departure time
    measures X.departure_time from_time,
             last(Y.departure_time) to_time,
             (first(Y.departure_time)-X.departure_time)*24*60 minutes,
             count(*) number of trips
    pattern (X Y\{2,\} | X)
    define
      Y as departure_time-prev(departure_time) = first(Y.departure_time)-X.departure_time
```

```
order by route_name, from_time;
```

🖼 WriteLessWithMore - sqlplus demo_wlwm/demo		
23c> print rc		
ROUTE_NAME	NUMBER_OF_TRIPS	DEPARTURES
	· · · · · · · · · ·-	~~~~
Piccadilly		05:24
Piccadilly		05:38
Piccadilly	1	05:50
Piccadilly	4	06:00 - 06:21 every 7 minutes
Piccadilly	1	06:27
Piccadilly	1	06:33
Piccadilly	1	06:38
Piccadilly	1	06:44
Piccadilly	1	06:49
Piccadilly	125	06:55 - 17:15 every 5 minutes
Piccadilly	22	17:19 - 19:04 every 5 minutes
Piccadilly	40	19:10 - 22:25 every 5 minutes
Piccadilly	11	22:29 - 23:19 every 5 minutes
Piccadilly	3	23:25 - 23:35 every 5 minutes
Piccadilly		23:39
Piccadilly	1	23:44
Piccadilly	1	23:50
Piccadilly	1	23:55
Piccadilly	5	00:00 - 00:20 every 5 minutes
Piccadilly		00:27
Piccadilly		00:30 - 03:20 every 10 minutes

– o ×

© Oren Nakdimon

21 rows selected.

23c> pause



ΤΗΑΝΚ ΥΟυ 🕲

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