

Opération	gauche	droite	résultat	c1	Description	Définition [br]	Définition [br]	Allen	Allen (sym.)	Snoedgrass	Lorentzos 1997	Lorentzos Inc	TD	Discipulus	synonymes ASCII	SQL ISO-1992	c2	SQL ISO-2011	c3	PostgreSQL 9.4+	Description PostgreSQL	Exemple	Résultat			
intervalle[br]	point	point	intervalle	<=		{x € T b ≤ x ≤ e}	{x € T b ≤ x < t}	[b;t]	[b;t]	[b;t]	[b;t]	[b;t]	[b;t]	[b;t]				T, 1	intRange[br>+]							
début	intervalle	point	point			p.b	p.b	p-		beginning	start	begin	begin	first				f	lower()		lower bound of range	lower(numrange(1,1.2,2))	1.1			
fin	intervalle	point	point			p.e	p.t-1	p-			end	end	end	last				f-1	upper()		upper bound of range	upper(numrange(1,1.2,2))	2.2			
prédécesseur	intervalle	point	point			p.b-1	p.b-1	p-		previous	pre	pre	pre	pred				f-1	pred()		predecessor	pred()	0			
successeur	intervalle	point	point			p.e+1	p.e	p-			post	post	post	post				t	post()		successor	post()	1			
dénombrément	intervalle	entier	entier			nombre d'éléments	nombre d'éléments				dur	count	count	card				1	??							
alpha	Type point	point	point	<=		La plus petite valeur du type T	La plus grande valeur du type T	first			first	first	first	a	alpha					minimum	DATE_first	0001-01-01				
omega	Type point	point	point	<=		La plus grande valeur du type T	La plus petite valeur du type T	last			last	last	last	w	omega					maximum	DATE_last	9999-12-31				
appartenance	point	intervalle	booléen	<=		x € p	x € p	x € p		x in points(p)	e	e	e	e				<@			element is contained by	42 <@ intRange(1,7)	false			
appartenance ¹	intervalle	point	booléen			p ∈ x	p ∈ x				e	e	e	e	contains						contains element	'1,2011-03-01':strange @> '2011-01-10': true	true			
antériorité stricte	intervalle	intervalle	booléen			p : --- 000000 q : 000000 ---	p:1<q:b	p:1<q:b	before	<	before	before	b	before <	before <							strictly left of	intRange(1,10) << intRange(100,110)	true		
adjacence antérieure	intervalle	intervalle	booléen			p : 0 --- 000000 q : 000000 ---	p:e+1<q:b	p:1<q:b	meets	m	meets	meets	m		meets_before											
chevauchement antérieur strict	intervalle	intervalle	booléen			p : 000000 --- 0 q : 000000 --- 0	p:b<q:b A p:e<q:b A p:e<q:e	p:b<q:b A p:1<q:b A p:1<q:t	overlaps	o	overlaps	lowerlaps	o		overlaps_before							&&	overlap (have points in common)	intRange(3,7) && intRange(4,12)	true	
commencement strict	intervalle	intervalle	booléen			p : 000 --- 0000 q : 000 --- 000	q:bp:b A p:e<q:e	q:bp:b A p:1<q:t	starts	s	starts	lowers	s		starts											
inclusion bi-stricte	intervalle	intervalle	booléen			p : 0000 --- 0000 q : 000 --- 000	q:bp:b A p:e<q:e	q:bp:b A p:1<q:t	during	d	during	covers	d		bi_strictly_includes							ND	range is strictly contained by		true	
achèvement strict	intervalle	intervalle	booléen			p : 0000 --- 000 q : 000 --- 000	q:bp:b A p:e<q:e	q:bp:b A p:1<q:t	finishes	f	finishes	covered	f		finishes											
égalité	intervalle	intervalle	booléen			p : 000 --- 000 q : 000 --- 000	q:bp:b A p:e<q:e	q:bp:b A p:1<q:t	equals	=	equals	=	e	=	equals							=	equal	intRange(1,5) = [1,4]:intRange	true	
achèvement strict ¹	intervalle	intervalle	booléen			p : 000 --- 000 q : 000 --- 000	p:bp:b A q:e<p:e	p:bp:b A q:1<p:t	fi	fi	finishes ¹	rcovers	fi		finishes ¹							finishes_inv				
inclusion bi-stricte ¹	intervalle	intervalle	booléen			p : 000 --- 000 q : 000 --- 000	p:bp:b A q:e<p:e	p:bp:b A q:1<p:t	di	di	during ¹	covered	di		bi_strictly_includes ¹							bi_strictly_includes_inv				
commencement strict ¹	intervalle	intervalle	booléen			p : 000 --- 000 q : 000 --- 000	p:bp:b A q:e<p:e	p:bp:b A q:1<p:t	si	si	starts ¹	lowered	si		starts ¹							starts_inv				
chevauchement antérieur strict	intervalle	intervalle	booléen			p : 00000 --- 10 q : 00 --- 0000	q:bp:b A q:ep:b A q:e<p:e	q:bp:b A q:tp:b A q:tp:t	oi	oi	overlaps ¹	roverlaps	oi		overlaps_before ¹							&&	overlap (have points in common)	intRange(3,7) && intRange(4,12)	true	
adjacence antérieure ¹	intervalle	intervalle	booléen			p : 000000 --- q : 00 --- 0000	p:b-1<q:e	p:bp:1	mi	mi	meets ¹	met	mi		meets_after ¹							meets_before_inv				
adjacence postérieure ¹	intervalle	intervalle	booléen			p : 0 --- 00000 q : 0 --- 00000	p:b-1<q:e	p:bp:1	mi	mi	meets ¹	met	mi		meets_after ¹							meets_before_inv				
antériorité stricte ¹	intervalle	intervalle	booléen			p : 0 --- 00000 q : --- 000000	p:b-1<q:e	p:bp:1	bi	bi	after	after	bi	after >	before ¹						<<	strictly left of	intRange(1,10) << intRange(100,110)	true		
postériorité stricte	intervalle	intervalle	booléen			p : --- 000000 q : --- 000000	p:b-1<q:e	p:bp:1	bi	bi	after	after	bi	after >	before ¹						>>	strictly right of	intRange(100,110) >> intRange(1,10)	true		
inégalité	intervalle	intervalle	booléen	ok	pk	p:bp:b V p:e<q:e	p:bp:b V p:tp:t	#	#	< m o s d f fi di si oi mi >	#	#	#	#	#						<<	not equal	numrange(1,1.2,2) << numrange(1.1,2.3)	true		
inclusion	intervalle	intervalle	booléen	ok	pkq	q:bp:b A p:e<q:e	q:bp:b A p:tp:t	ND	ND	s d f =	subinterv	C	C	C	C							<@	range is contained by	intRange(2,4) <@ intRange(1,7)	true	
inclusion stricte	intervalle	intervalle	booléen	ok	pkq	q:bp:b A p:e<q:e	q:bp:b A p:tp:t	ND	ND	s d f =	superinterv	C	C	C	C							@>	contains range	intRange(2,4) @> intRange(2,3)	true	
inclusion stricte ¹	intervalle	intervalle	booléen	ok	pkq	q:bp:b A p:e<q:e V (q:bp:b A p:e<q:e) (q:bp:b A p:tp:t) V (q:bp:b A p:tp:t)	q:bp:b A p:tp:t	con	con	si di fi	pauperinterv	C	C	C	C							>				
partage	intervalle	intervalle	booléen	ok	pkq	p:bp:b A q:bp:b	p:bp:1 A q:bp:1	o s d f = fi di si oi	o s d f = fi di si oi	cp	overlaps	overlaps	overlaps	overlaps	**							&&	overlap (have points in common)	intRange(3,7) && intRange(4,12)	true	
non partage	intervalle	intervalle	booléen	ok	pkq	p:bp:b V q:bp:b	p:bp:1 V q:bp:1	< m o s d f =	< m o s d f =	cp	not overlaps	not overlaps	not overlaps	not overlaps	>>							>>				
adjacence	intervalle	intervalle	booléen	ok	pkq	p:e+1<q:b	p:1<q:b	m	m	mi	adjacent	meets	meets	meets	< >							1+	-	is adjacent to	numrange(1.1,2.2)- - numrange(2.3,3)	true
continuité	intervalle	intervalle	booléen	ok	pkq	intersection ou adjacence	intersection ou adjacence	m o s d f = fi di si oi mi	m o s d f = fi di si oi mi	merges	merges	merges	merges	merges	<>							2+	ND	overlaps or meets	intRange(1.1,2.2)- - numrange(2.3,3)	true
chevauchement antérieur stricte	intervalle	intervalle	booléen			p:e<q:e	p:1<q:t	to(p1<to(q))	to(p1<to(q))	< m o s d f =	end(p1<end(q))	end(p1<end(q))	strictly overlaps	strictly overlaps	<<>											
antériorité stricte	intervalle	intervalle	booléen			p:e<q:e	p:1<q:t	to(p1<to(q))	to(p1<to(q))	< m o s d f =	end(p1<end(q))	end(p1<end(q))	strictly overlaps	strictly overlaps	<<>											
antériorité	intervalle	intervalle	booléen			p:e<q:e	p:1<q:t	to(p1<to(q))	to(p1<to(q))	< m o s d f =	end(p1<end(q))	end(p1<end(q))	strictly overlaps	strictly overlaps	<<>											
postériorité stricte, antériorité_stricte	intervalle	intervalle	booléen			p:b<q:b	p:bp:b	from(p1)-from(q)	from(p1)-from(q)	di si oi mi >	follows	follows	follows	follows	<<							&c	does not extend to the right of	intRange(1,20) &c intRange(18,20)	true	
postériorité, antériorité ¹	intervalle	intervalle	booléen			p:b<q:b	p:bp:b	from(p1)-from(q)	from(p1)-from(q)	= fi di si oi mi >	follows	follows	follows	follows	>>							&>	does not extend to the left of	intRange(7,20) &> intRange(5,10)	true	
i_union	intervalle	intervalle	intervalle	<=	<=	[min(p,b,q,b):max(p,e,q,e)]	[min(p,b,q,b):max(p,t,q,t)]			union	union	union	union	U	+						+	union	numrange(5,15) + numrange(10,20)	[5,20]		
i_intersection	intervalle	intervalle	intervalle	<=	<=	[max(p,b,q,b):min(p,e,q,e)]	[max(p,b,q,b):min(p,t,q,t)]			intersect	intersect	intersect	intersect	∩	+						+	intersection	intRange(5,15) ∩ intRange(10,20)	[10,15]		
i_différence	intervalle	intervalle	intervalle	<=	<=	[p,b:min(p,e,q,e)]	[p,b:min(p,t,q,t)]			minus	minus	minus	minus	-	-						-	difference	intRange(5,15) - intRange(10,20)	[5,10]		
op_0 (chevauchement)	intervalle	intervalle	booléen	ok	pkq	p:bp:b A q:bp:b	p:bp:1 A q:bp:1	o s d f = fi di si oi	o s d f = fi di si oi	OVERLAPS	overlaps	overlaps	overlaps	overlaps	overlaps											
op_1 (prolongement après 7)	intervalle	intervalle	booléen	ok	??	p se termine après qet commence avant que q	p:b < q:t AND q:b < p:t	di si oi mi	di si oi mi					SOP1												
op_2 (idem op_8)	intervalle	intervalle	booléen	ok	??	p:b < q:t AND q:t < p:t	p:b < q:t AND q:t < p:t	f = fi di si oi	f = fi di si oi					SOP2												
op_3 (idem op_8)	intervalle	intervalle	booléen	ok	??	p:b < q:b AND q:b < p:t	p:b < q:b AND q:b < p:t	m o fi di	m o fi di					SOP3												
op_4	intervalle	intervalle	booléen	ok	??	p:b < q:b AND q:b < p:t	p:b < q:b AND q:b < p:t	o s = fi di si	o s = fi di si					SOP4												
op_5 (op_2 sans adjacence)	intervalle	intervalle	booléen	ok	??	p:b < q:t AND q:t < p:t	p:b < q:t AND q:t < p:t	di si oi	di si oi					SOP5												
op_6 (inclusion bi-stricte ¹)	intervalle	intervalle	booléen	ok	??	p : 000 --- 000 q : 0000 --- 0000	p:b < q:b AND p:t > q:t	di	di					SOP6												
op_7	intervalle	intervalle	booléen	ok	??		p:b < q:b AND p:t > q:b	o fi di	o fi di					SOP7												
op_8 (idem op_2)	intervalle	intervalle	booléen	ok	??		p:b < q:t AND p:t > q:t	f = fi di si oi	f = fi di si oi					SOP8												
op_9 (inclusion)	intervalle	intervalle	booléen	ok	??		p:b > q:b AND p:t < q:t	s fi di f	s fi di f					C												
op_10	intervalle	intervalle	booléen	ok	??		p:b > q:b AND p:t < q:t	= fi di si oi	= fi di si oi					C												
op_11	intervalle	intervalle	booléen	ok	??		p:b < q:b AND p:t > q:b	o s	o s					C												
op_12	intervalle	intervalle	booléen	ok	??		p:b < q:t AND p:t > q:t	si oi	si oi					C												
op_13	intervalle	intervalle	booléen	ok	??		p:b < q:t AND p:t > q:b							C												

Variables
p, q, s : utiliser partout pRange comme représentatif de intRange, intBRange, etc.
b, e : point
U : nom de l'unité du chronon en SQL
f : b-1
t : e+1

Notes
<= : antécédent : bse
<= : antécédent : p merges q
<= : antécédent : p overlaps q
<= : antécédent : T est un type discret (donc fini), muni d'un ordre total (donc avec minimum et un maximum)
1+ : i1 meets i2
2+ : i1 merges i2
3+ : count i1

Références
Lorentzos_1997 : pp. 480-499 Nikos A. Lorentzos, Yannis G. Mitsopoulos, SQL Extension for Interval Data, IEEE Transactions on Knowledge and Data Engineering, vol 9, no 3, May/June 1997
Lorentzos_Inc : pp. 103-110 Quel article ? Est-ce vraiment exact ?

(p1 immediately precedes p2) or (p2 immediately precedes p1)
(p1 overlaps p2) or (p1 immediately precedes p2) or (p2 immediately precedes p1)
cast((f)-1 as integer)