Vergleich RA, BK, TK, SQL

	Sprachfeatures	Einfache Selektion	Einfacher Verbund	Mengenvergleich + Verbund

RA	Vereinigung ∪
	Differenz -
	Produkt x
	Projektion π
	Selektion σ
	Umbenennung δ
	+ abgeleitete Operationen
		$\pi_{KName}(\sigma_{Kto<0}(Kunde))$	$\pi_{R.A,R.B,S.C}(\sigma_{R.B=S.B}(R \times S))$
			
			$\pi_{R.A,R.B,S.C}(\sigma_{R.B=S.B}(\delta_{R.B\leftarrow B}(R) \times \delta_{S.B\leftarrow B}(S)))$
			
			$R * S$
				$\pi_{Titel}($
				  $(\pi_{DokNr}(\sigma_{Schlagwort='DB'}(Desk)) \cap$
				  $\pi_{DokNr}(\sigma_{Schlagwort='PS'}(Desk)))* Buch)$

BK	{ varlist | formula }
	[∃ | ∀] var (formula) -- Bereichsvariable
	formula [∧ | ∨] formula
	¬ formula
	relation(varlist)
	var comp var -- comparison s.u.
	var comp constant
		{ kn | ∃ ka,kt
		  (Kunde(kn,ka,kt) ∧ kt<0) }
			{ a,b,c |
			  (R(a,b) ∧ S(b,c)) }
				{ tl | ∃ dn
				  (Buch(dn,tl) ∧ Desk(dn,'DB') ∧ Desk(dn,'PS')) }

TK	{ var | formula }
	[∃ | ∀] var:relation (formula) -- Tupelvariable
	formula [∧ | ∨] formula
	¬ formula
	relation(var)
	var.attr comp var.attr
	var.attr comp constant
		{ r:(KName) | ∃ k:Kunde
		  (r.KName=k.KName ∧ k.Kto<0) }
			{ t:(A,B,C) | ∃ r:R ∃ s:S
			  (t.A=r.A ∧ t.B=r.B ∧ t.C=s.C ∧
			  r.B=s.B) }
				{ r:(Titel) | ∃ b:Buch ∃ d1:Desk ∃ d2:Desk
				  (r.Titel=b.Titel ∧ b.DokNr=d1.DokNr ∧ b.DokNr=d2.DokNr ∧
				  d1.Schlagwort='DB' ∧ d2.Schlagwort='PS') }

SQL	```SELECT terms``` ```FROM relations``` ```WHERE formula -- sfw```
	formula [AND | OR] formula
	NOT formula
	
	attref comp constant
	  -- att[ribute]ref[erence]
	  -- comp[arison] = <> < <= > >=
	attref comp attref
	attref comp [ANY | ALL] (sfw)
	attref IN (sfw)
	EXISTS (sfw)
		```SELECT KName``` ```FROM Kunde``` ```WHERE Kto<0```
		
		```SELECT Kunde.KName``` ```FROM Kunde``` ```WHERE Kunde.Kto<0```
		
		```SELECT k.KName``` ```FROM Kunde k``` ```WHERE k.Kto<0```
			```SELECT R.A, R.B, S.C``` ```FROM R, S``` ```WHERE R.B=S.B```
			
			```SELECT *``` ```FROM R NATURAL JOIN S```
			
			```SELECT *``` ```FROM R JOIN S ON R.B=S.B```
			
			```SELECT *``` ```FROM R JOIN S USING(B)```
				```SELECT Titel``` ```FROM Buch b, Desk d1, Desk d2``` ```WHERE b.DokNr=d1.DokNr AND```
				``` b.DokNr=d2.DokNr AND```
				``` d1.Schlagwort='DB' AND```
				``` d2.Schlagwort='PS'```
				
				```SELECT Titel``` ```FROM Buch``` ```WHERE DokNr IN (SELECT DokNr FROM Desk```
				``` WHERE Schlagwort='DB') AND```
				``` DokNr IN (SELECT DokNr FROM Desk```
				``` WHERE Schlagwort='PS')```

Bsp		Kunde(KName,KAdr,Kto)	R(A,B), S(B,C)	Buch(DokNr,Titel), Desk(DokNr,Schlagwort)