Table of Symbols

Symbol	Description	Example
Π	projection operator	$\Pi_{fname,lname}(USERS)$
σ	selection operator	$\sigma_{fname='Luke'}(USERS)$
ρ	rename operator	$\rho(SID, First, Last, PittID, Phone)(USERS)$
$\mathcal{F}$	aggregation operator	$\mathcal{F}_{count\ SID,Avg\ GPA}(STUDENTS)$
$\div$	division operator	$R \div S$
$\bigcup$	set union	$R \bigcup S$
$\bigcap$	set intersection	$R \bigcap S$
$-$	set difference	$R - S$
$\times$	cartesian product	$R \times S$
$*$	natural join	$STUDENTS * ENROLLS$
$\bowtie_\theta$	condition join, θ is the condition	$TECH\_PERSONNEL \bowtie_{pplSoft=tech\_pplSoft} ASSIGNED$
$] \bowtie [$	full outer natural join	$STUDENTS] \bowtie [ENROLLS$
$\bowtie [$	right outer natural join	$STUDENTS \bowtie [ENROLLS$
$] \bowtie$	left outer natural join	$STUDENTS] \bowtie ENROLLS$
$] \bowtie_\theta [$	full outer θ join	$TECH\_PERSONNEL] \bowtie_{pplSoft=tech\_pplSoft} [ASSIGNED$
$\bowtie_\theta [$	right outer θ join	$TECH\_PERSONNEL \bowtie [_{pplSoft=tech\_pplSoft} ASSIGNED$
$] \bowtie_\theta$	left outer θ join	$TECH\_PERSONNEL] \bowtie_{pplSoft=tech\_pplSoft} ASSIGNED$
$\|R\|$	arity of schema R, i.e. number of attributes in R	$\|STUDENTS\|$ for example 4 attributes STUDENTS(SID, Name,Major, GPA)
$\|r\|$ or $\|r(R)\|$	cardinality of relation r with schema R, i.e. number of tuples in r	$\|STUDENTS\|$ for example 35 students
$\vee$	or	Name='John' $\vee$ Name ='Susan'
$\wedge$	and	Name ='Luke' $\wedge$ Major='CS'

Table of Descriptive (Text) Symbols

Symbol	Description	Text Symbo w/ Example l
Π	projection operator	Project[fname,lname](USERS)
σ	selection operator	Select[fname='Luke'] (USERS)
ρ	rename operator	Rename(SID,First, Last,PittID,Phone) (USERS)
$\mathcal{F}$	aggregation operator	$F[count\ SID, Avg\ GPA](STUDENTS)$
$\div$	division operator	R Div S or Div(R,s)
$\bigcup$	set union	R Union S or Union(R,S)
$\bigcap$	set intersection	R Intersect S or Intersect(R, S)
$-$	set difference	R - S
$\times$	cartesian product	R x S
$*$	natural join	STUDENTS * ENROLLS
$\bowtie_\theta$	condition join, θ is the condition	TECH_PERSONNEL Join(pplSoft=tech_pplSoft) ASSIGNED
$] \bowtie [$	full outer natural join	STUDENTS] Join [ENROLLS
$\bowtie [$	right outer natural join	STUDENTS Join [ENROLLS
$] \bowtie$	left outer natural join	STUDENTS] Join ENROLLS
$] \bowtie_\theta [$	full outer θl join	TECH_PERSONNEL] Join(pplSoft=tech_pplSoft) [ASSIGNED
$\bowtie_\theta [$	right outer θ join	TECH_PERSONNEL Join(pplSoft=tech_pplSoft) [ASSIGNED
$] \bowtie_\theta$	left outer θ join	TECH_PERSONNEL] Join(pplSoft=tech_pplSoft) ASSIGNED
$\|R\|$	arity of schema R, i.e. number of attributes in R	$\|STUDENTS\|$ for example 4 attributes STUDENTS(SID, Name,Major, GPA)
$\|r\|$ or $\|r(R)\|$	cardinality of relation r with schema R, i.e. number of tuples in r	$\|STUDENTS\|$ for example 35 students
$\vee$	or	Name='John' OR Name ='Susan'
$\wedge$	and	Name ='Luke' AND Major='CS'