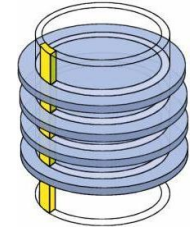


# Conception Avancée de Bases de Données

“Disk” Merge Join  
external merge sorting  
Exemple pass 2 : MERGE



## Pass 2 : 4 block run sorterd



S01.1

JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

S01.2

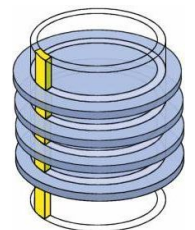
ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

S23.1

ND
LE
JE
IB
EH
EB
DG
CA
AF
AE

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB



# Pass 2 : 4 blocks run sorted

S01.1

JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

S01.2

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

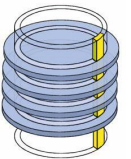
S23.1

ND
LE
JE
IB
EH
EB
DG
CA
AF
AE

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB

S3.1

# Pass 2 : 4 blocks run sorted

S01.1



JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

S01.2

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

S23.1



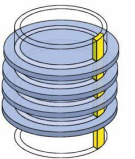
ND
LE
JE
IB
EH
EB
DG
CA
AF
AE

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB

S3.1



# Pass 2 : 4 blocks run sortedd



S01.1

JC
JA
IG
GE
FF
FD
DC
BG
BE

S01.2

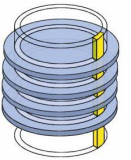
ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

S23.1

ND
LE
JE
IB
EH
EB
DG
CA

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB



S3.1

AF
AE
AC



# Pass 2 : 4 blocks run sorterd



S01.1



JC
JA
IG
GE
FF
FD

S01.2

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

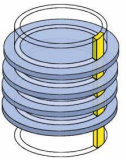
S23.1




ND
LE
JE
IB

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB




S3.1



**Sxy**

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



# Pass 2 : 4 blocks run sorted



S01.1

JC
JA
IG
GE
FF
FD

S01.2

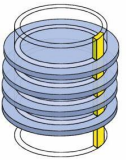
ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

S23.1

ND
LE
JE
IB

S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

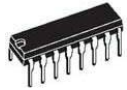



# Pass 2 : 4 blocks run sorted



S01.1

JC



S01.2

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA

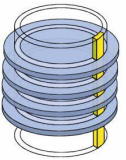
S23.1

ND
LE
JE



S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

JA
IG
IB
GE
FF
FD





# Pass 2 : 4 blocks run sorted



S01.1


S01.2

ZE
YH
UH
UE
SA
RG
NH
MD



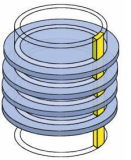
S23.1

ND
LE



S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC

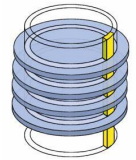


S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



# Pass 2 : 4 blocks run sorted



S01.1


S01.2

ZE
YH
UH
UE
SA
RG
NH
MD



S23.1

ND
LE



S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB

S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

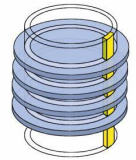
LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



S3.3




# Pass 2 : 4 blocks run sorted



S01.1


S01.2

ZE
YH
UH
UE
SA
RG
NH
MD



S23.1

ND
LE



S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA
OB

S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



**Sxy**

S3.3




# Pass 2 : 4 blocks run sorted



S01.1


S01.2

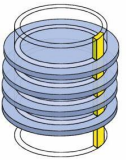
ZE
YH
UH
UE
SA
RG



S23.1


S23.2

ZF
ZD
XG
VF
VC
TF
TE
RB
RA



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



S3.3

OB
NH
ND
MD
LE



# Pass 2 : 4 blocks run sorted



S01.1


S01.2

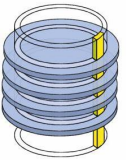
ZE
YH
UH
UE



S23.1


S23.2

ZF
ZD
XG
VF
VC
TF



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



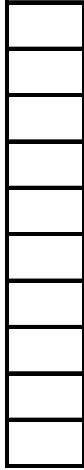
S3.3

TE
SA
RG
RB
RA
OB
NH
ND
MD
LE

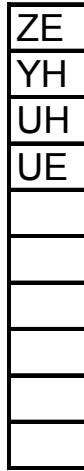


# Pass 2 : 4 blocks run sorted

S01.1



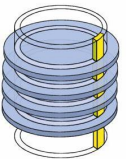
S01.2



S23.1



S23.2



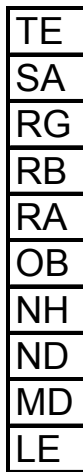
S3.1



S3.2



S3.3

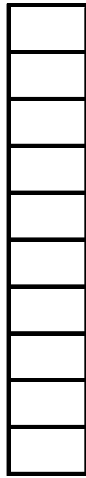


S3.4



# Pass 2 : 4 blocks run sorterd

S01.1



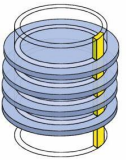
S01.2



S23.1



S23.2



S3.1



S3.2



S3.3

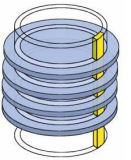


**Sxy**

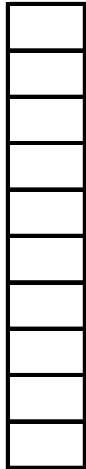
S3.4



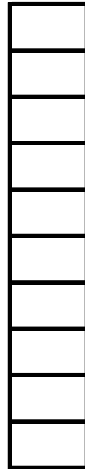
# Pass 2 : 4 blocks run sorted



S01.1



S01.2



S23.1



S23.2



S3.1

EH
EB
DG
DC
CA
BG
BE
AF
AE
AC



S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD



S3.3

TE
SA
RG
RB
RA
OB
NH
ND
MD
LE



S3.4

ZF
ZE
ZD
YH
XG
VF
VC
UH
UE
TF

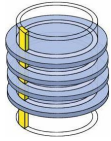




## Pass 2 : 4 blocks Run sorted



S3.1



EH
EB
DG
DC
CA
BG
BE
AF
AE
AC

S3.2

LC
KA
JE
JC
JA
IG
IB
GE
FF
FD

S3.3

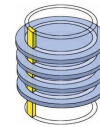
TE
SA
RG
RB
RA
OB
NH
ND
MD
LE

S3.4

ZF
ZE
ZD
YH
XG
VF
VC
UH
UE
TF



Sxy



## Pass 2 : 4 blocks runs sorted index

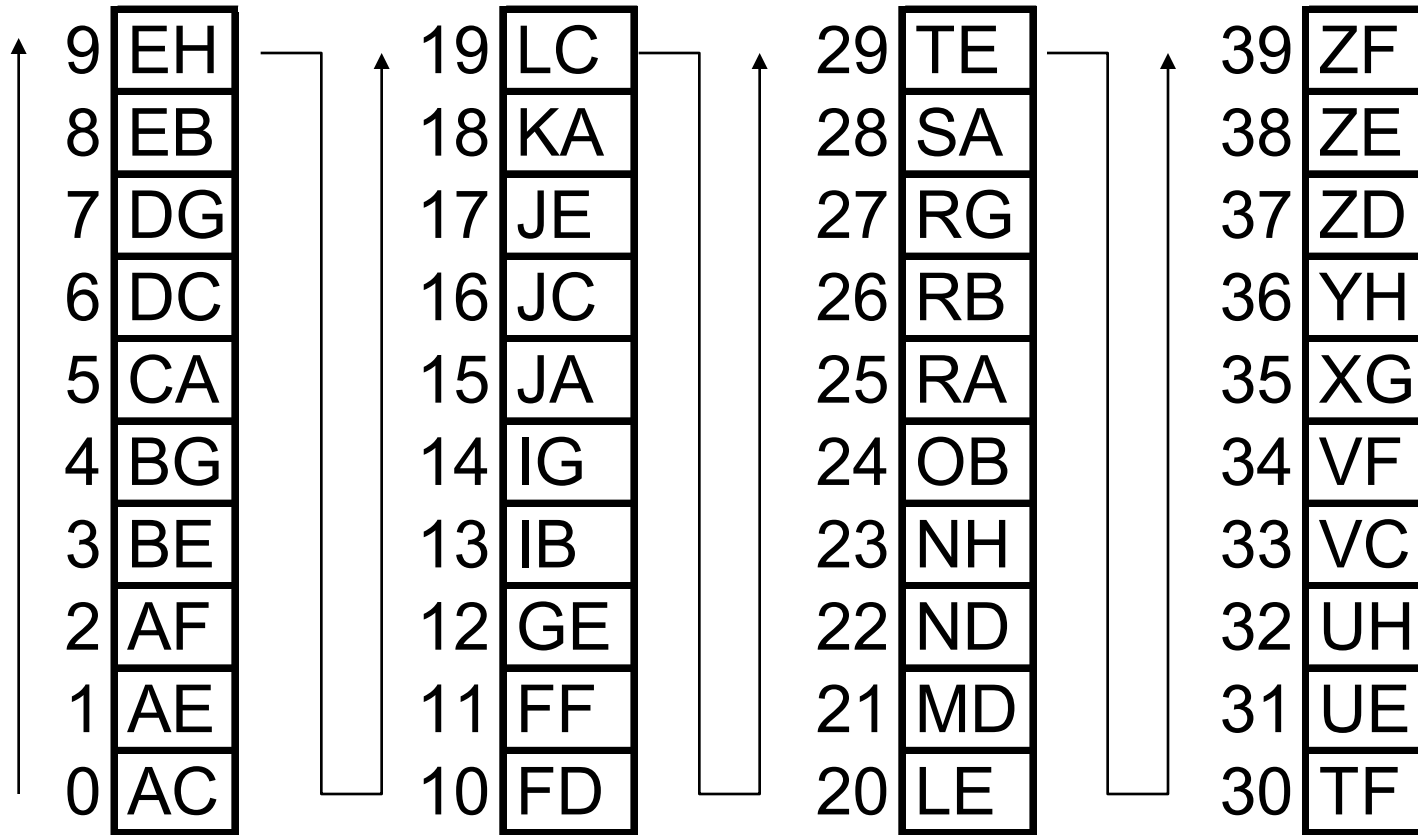


S3.1

S3.2

S3.3

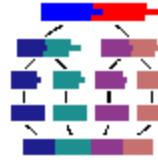
S3.4



Index Run



# 4 Blocks run



## Index runs



S3.1

S3.2

S3.3

S3.4

ZF	ZE	ZD	YH	XG	VF	VC	UH	UE	TF
0	1	2	3	4	5	6	7	8	9

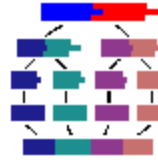
TE	SA	RG	RB	RA	OB	NH	ND	MD	LE
10	11	12	13	14	15	16	17	18	19

LC	KA	JE	JC	JA	IG	IB	GE	FF	FD
20	21	22	23	24	25	26	27	28	29

EH	EB	DG	DC	CA	BG	BE	AF	AE	AC
30	31	32	33	34	35	36	37	38	39



# 4 Blocks run



## Index runs



S3.1

S3.2

S3.3

S3.4

ZF	ZE	ZD	YH	XG	VF	VC	UH	UE	TF
0	1	2	3	4	5	6	7	8	9

TE	SA	RG	RB	RA	OB	NH	ND	MD	LE
10	11	12	13	14	15	16	17	18	19

LC	KA	JE	JC	JA	IG	IB	GE	FF	FD
20	21	22	23	24	25	26	27	28	29

EH	EB	DG	DC	CA	BG	BE	AF	AE	AC
30	31	32	33	34	35	36	37	38	39



# Sxy

# 4 Blocks runs



**Sxy**

**Index runs**



S3.1

S3.2

S3.3

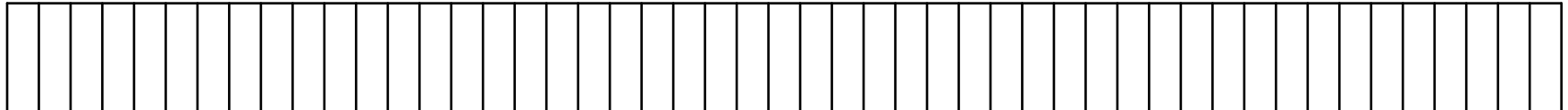
S3.4

ZF	ZE	ZD	YH	XG	VF	VC	UH	UE	TF
0	1	2	3	4	5	6	7	8	9

TE	SA	RG	RB	RA	OB	NH	ND	MD	LE
10	11	12	13	14	15	16	17	18	19

LC	KA	JE	JC	JA	IG	IB	GE	FF	FD
20	21	22	23	24	25	26	27	28	29

EH	EB	DG	DC	CA	BG	BE	AF	AE	AC
30	31	32	33	34	35	36	37	38	39



**Sxy.txt**

