University of Toronto
CSC**343**

Some useful LaTeX

FD	Exclude these from $S2$ when computing closure	Closure	Decision
1	1	There's no way to get C without this FD	keep
2	2	$A^+ = ACGBEFDH$	discard
3	2, 3	$A^+ = ACBEFHGD$	discard
4	2, 3, 4	$A^+ = ACEFHGDB$	discard
5	2, 3, 4, 5	$A^+ = ACFHGDEB$	discard
6	2, 3, 4, 5, 6	There's no way to get F without this FD	keep
7	2, 3, 4, 5, 7	$BCG^+ = BCG$	keep
8	2, 3, 4, 5, 8	There's no way to get A without this FD	keep
9	2, 3, 4, 5, 9	There's no way to get H without this FD	keep
10	2, 3, 4, 5, 10	Duplicate FD to (14)	discard
11	2, 3, 4, 5, 10, 11	There's no way to get B without this FD	keep
12	2, 3, 4, 5, 10, 12	$H^+ = HEG$	keep
13	2, 3, 4, 5, 10, 13	There's no way to get E without this FD	keep
14	2, 3, 4, 5, 10, 14	There's no way to get G without this FD	keep

A	B	C	D	G	closure	FDs
✓					$A^+ = A$	nothing
	✓				$B^+ = BCDAG$	$B \to ACDG$
		✓			$C^+ = CAG$	$C \to AG$: violates BCNF; abort the projection

B	C	D
b	1	c
f	1	g

C	A	G
1	a	d

E	B	F
2	b	4
2	f	5

B	F	H
b	4	3
f	5	3

Attribute	Appears on LHS	Appears on RHS	Conclusion
D	–	–	must be in every key
A	✓	–	must be in every key
E	–	✓	is not in any key
B, C, F	✓	✓	must check