

MCS-274 Decomposition Examples (Spring 2009)

Attributes: ID#, First name, Last name, Phone, Address, City, State, ZIP

Abbreviations: IFLPACSZ

Functional Dependencies: $I \rightarrow FLACSZ$, $ACS \rightarrow Z$, $AZ \rightarrow CS$:

#	Decomposition	BCNF?	Lossless?	Dependency preserving?	Notes
1	IFLPACSZ	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	starting point
2	IFLACSZ, IP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	partially decomposed
3	IFLACS, IP, ACSZ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	a nice decomposition
4	IFLAZ, IP, ACSZ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	another nice one
5	IF, IL, IP, IA, IC, IS, IZ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	way too fine grained
6	IF, LP, AC, SZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCNF per se is no big deal
7	IF, IL, IP, IACS, ACSZ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	unnecessarily many tables
8	IFL, IP, ACSZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	terrible even w/ only 3
9	IFLACS, P, ACSZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	can preserve yet be lossy

Suppose the Post Office eliminates a few weird cases and we have $Z \rightarrow S$. How does the example change?