

## CMSC 23500: Introduction to Databases

Homework 4  
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Let  $f$  represent flights and  $a$  represent airports.

1. Let  $A1 = \pi_{dst}(\sigma_{src="XYZ"}(f))$

Then the answer is  $N1 = \pi_{name}(a \bowtie (\rho_{dst \rightarrow airportCode} A1))$

2. Let  $A2 = \pi_{dst}(f \bowtie (\rho_{dst \rightarrow src}(A1)))$

Then the answer is  $N2 = \pi_{name}(a \bowtie (\rho_{dst \rightarrow airportCode} A2))$

3. Let  $A3 = \pi_{dst}(f \bowtie (\rho_{dst \rightarrow src}(A2)))$

Then the answer is  $N3 = \pi_{name}(a \bowtie (\rho_{dst \rightarrow airportCode} A3))$

4.  $N1 \cup N2 \cup N3$