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In-Video Quiz

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Q2

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Consider relation $\text{Apply}(\text{SSN}, \text{cName}, \text{state}, \text{date}, \text{major})$ with FDs $\text{cName} \rightarrow \text{state}$ and $\text{SSN}, \text{cName} \rightarrow \text{date}, \text{major}$. What schema would be produced by the BCNF decomposition algorithm?

- ☐ $\text{Apply}(\text{SSN}, \text{cName}, \text{state}, \text{date}, \text{major})$
- ☒ $\text{A1}(\text{cName}, \text{state}), \text{A2}(\text{SSN}, \text{cName}, \text{date}, \text{major})$
- ☐ $\text{A1}(\text{cName}, \text{state}), \text{A2}(\text{SSN}, \text{date}, \text{major})$
- ☐ $\text{A1}(\text{cName}, \text{state}), \text{A2}(\text{SSN}, \text{cName}, \text{date}), \text{A3}(\text{SSN}, \text{cName}, \text{major})$



Explanation

$\{\text{SSN}, \text{cName}\}$ is a key so only $\text{cName} \rightarrow \text{state}$ is a BCNF violation. Based on this violation we decompose into $\text{A1}(\text{cName}, \text{state}), \text{A2}(\text{SSN}, \text{cName}, \text{date}, \text{major})$. Now both FDs have keys on their left-hand-side so we're done.

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