HW7

Given the relation with the following attributes ACFSBDM. Note that C is the key. This relation has this set of functional dependencies: FS -> B, A ->D.

a) Explain why this relation is not in BCNF. (20 points possible)

FS -> B violates BCNF because it does not satisfy any of the following conditions:
1. B is not included in FS
2. FS is not a key

A ->D violates BCNF because it does not satisfy any of the following conditions:
1. D is not included in A
2. A is not a key

b) Decompose this relation into BCNF. (80 points possible)

Decomposition:

FS -> B decomposes ACFSBDM to FSB and ACFSDM

A ->D decomposes ACFSDM to AD and ACFSM

We decomposed **ACFSBDM** into BCNF.
The final relations are **FSB, AD** and **ACFSM.**