

# CS430 Homework 7

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Due: Sunday, May 7, 2023

## Question 1 (80 points)

Given the relation with the following attributes ACFSBDM.

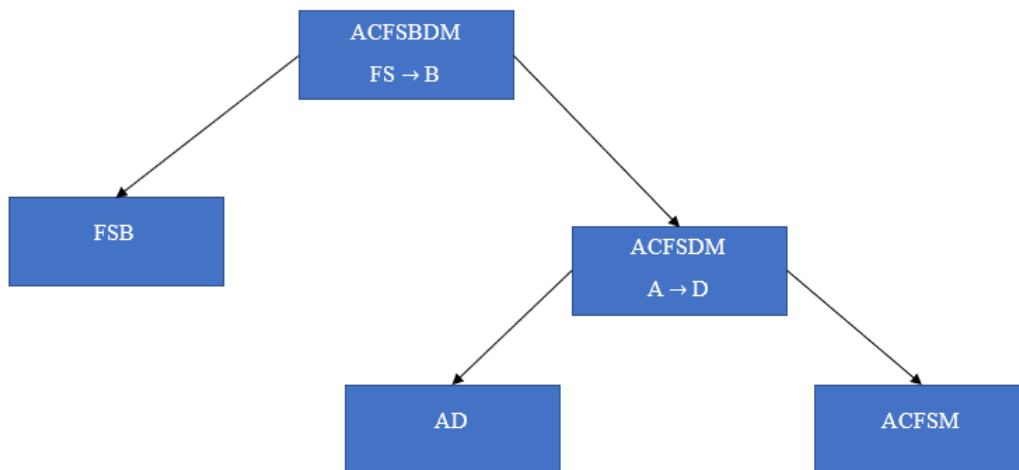
Note that C is the key. This relation has this set of functional dependencies:  $FS \rightarrow B$ ,  $A \rightarrow D$ .

a) Explain why this relation is not in BCNF.

The relation has dependent elements, B and D, which are dependent on other elements so it cannot be in BCNF.

b) Decompose this relation into BCNF.

The composition of the relation into BCNF is ACFSM with the relations FSB and AD also existing.



## Question 2 (20 points)

Write the SQL statements to:

a) Create user joe with password joe123.

```
CREATE USER joe IDENTIFIED BY joe123;
```

b) Write the SQL statement to give SELECT and INSERT access to user joe to table Sailors. Give access such that user joe can further give access to other users.

```
GRANT SELECT, INSERT ON Sailors TO joe WITH GRANT OPTION;
```