IFB105 Database Management

**Project - Part B**

**Task 6 Solution**

**Task 6 [4 marks]**

***Hint: Going through the examples of functional dependencies and normalization covered in the Week 6 Lecture will help you to work on this question.***

Using the following table structure, identify all functional dependences and then decompose this table into a set of 3NF relations. Your answer should:

* List the functional dependences
* Contain the relational schema for the relations in 3NF.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CharId | CharName | ActorName | FigId | OwnerId | Pseudonym |
| Vader | Darth Vader | David Prowse | f14 | Bill | Jabba the Hoot |
| Vader | Darth Vader | David Prowse | f22 | Amy | Don’t Blame Me |
| Yoda | Yoda | Frank Oz | f16 | Lucy | Xena Warrior |
| Leia | Princess Leia | Carrie Fisher | f45 | Bill | Jabba the Hoot |
| Leia | Princess Leia | Carrie Fisher | f99 | Amy | Don’t Blame Me |

**ANSWER:**

**Initial Minimal Functional Dependencies:**

CharId -> CharName,

CharId -> ActorName,

CharName -> ActorName,

OwnerId -> Pseudonym

CharId, OwnerId -> FigId

**1NF Conformance:**

Above table is already in 1NF because every value in the table is atomic

**2NF Conformance:**

Representing the relational schema:

**Character\_Actor\_Table**: {CharId, CharName, ActorName}

- Where {CharId -> CharName,

CharId -> ActorName,

CharName -> ActorName}

**Owner\_Table**: {OwnerId, Pseudonym}

- Where {OwnerId -> Pseudonym}

**Character\_Owner\_Figure\_Table**: {CharId, OwnerId, FigId}

- Where {CharId, OwnerId -> FigId}

**3NF Conformance:**

Removing the transitive dependency in the Character\_Actor Table and Representing the new relational schema:

**Character\_Table**: {CharId, CharName}

- Where {CharId -> CharName}

**Character\_Actor\_Table**: {CharName, ActorName}

- Where {CharName -> ActorName}

**Owner\_Table**: {OwnerId, Pseudonym}

- Where {OwnerId -> Pseudonym}

**Character\_Owner\_Figure\_Table**: {CharId, OwnerId, FigId}

- Where {CharId, OwnerId -> FigId}