

Database System

LAB 2A - Part 2 - Schema Design

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Tables that are included in our database are listed below.

1. Manuscript
2. Manuscript_feedback
3. Manuscript_status
4. Author
5. Author_order
6. RICodes
7. Reviewer
8. Reviewer_interest
9. Journal
10. Editor
11. Person

Schema:

1. **Manuscript** (manuscript_id INT (PK), idmanuscript_status INT (FK), lcode_icodeID INT (FK), Manuscript_title VARCHAR(120), Manuscript_DateReceived DATETIME, ManuscriptFeedback_manuscriptFeedback_id INT (FK), Journal_idJournal INT (FK), Manuscript_DateOfAcceptance DATETIME *nullable*, Manuscript_JournalBeginningPageNumber INT *nullable*, Manuscript_order INT *nullable*)

Primary Key: manuscript_id

Foreign Key: idmanuscript_status, lcode_icodeID, ManuscriptFeedback_manuscript_id, Journal_idJournal

2. **Manuscript_feedback** (idManuscript_feedback INT (PK), Reviewer_idReviewer INT (FK), Appropriateness INT, Clarity INT, Methodology INT, Experimental_results INT, Manuscript_manuscript_status INT (FK), Manuscript_lcode_icodeID INT, Manuscript_feedback_received_date DATETIME, ManuscriptTotalScore INT))

Composite Primary Key : idManuscript_feedback, Reviewer_idReviewer

Foreign Keys: manuscript_manuscript_status, Manuscript_lcode_icodeID

3. **Manuscript_status**(idManuscript_status INT (PK), status VARCHAR(45))

Primary Key: idManuscript_status

4. **Author**(author_id INT, Person_id INT)

Primary Key: author_id

Foreign Key : Person_id

5. **Author_order**(Manuscript_idManuscript INT (FK), Author_idAuthor INT (FK), order_number INT)

Composite Primary Key: Manuscript_idManuscript, Author_idAuthor

6. **ICodes**(icodeID MEDIUMINT(3), icode_interest VARCHAR(64))

Primary Key: icodeID

7. **Reviewer**(reviewer_id INT(PK), Person_id INT(FK))

Primary Key: reviewer_id

Foreign Key: Person_id

8. **Reviewer_interest**(Reviewer_reviewerID INT (FK), ICodes_ICodesID INT (FK))

Primary Composite Key: Reviewer_reviewerID(FK), ICodes_ICodesID(FK)

9. **Journal**(Journal_edition INT, Journal_pages INT *nullable*)

Primary Key: Journal_edition

10. **Editor**(Editor_id INT(PK), Person_id INT(FK))

Primary Key→ editor_id

Foreign Key → Person_id

11. **Person**(Person_id INT(PK), Person_fname VARCHAR(25), Person_lname VARCHAR(25), Person_email VARCHAR(45) *nullable*, Person_affiliation VARCHAR(65) *nullable*)

Primary Key: Person_id

Conditions/ Assumptions:

1. As mentioned in the domain description, a single author can co-author multiple manuscripts. Therefore, the relationship between author and author_order is 1 to many, i.e one author can have multiple author_orders.
2. We assume that exactly the same review does not come from multiple reviewers, so the relationship between reviewer and manuscript_feedback is : 1 reviewer gives zero or many feedbacks.
3. Scenario: In cases where multiple authors are involved in the single manuscript, order has to be maintained. So, a separate table named '**author_order**' has been designed where we will store the order_number. Author whose order_number is '1' will be considered as the primary author whose email address will be stored.
4. Manuscript and Author have many to many relationships, therefore, we have designed a bridge table named "Author_order", to handle that case.

Changes made after the last feedback:

1. A Person table has been created which includes fname, lname, email, affiliation(nullable). Author, editor and reviewer - all entities will refer to the person table.
2. Relationship has been updated from strong to weak between Reviewer entity and Manuscript_feedback entity. Also, we have added cardinality here.
3. We created a relationship between Editor and Manuscript, which was missing in our earlier ER diagram.
4. Fields added in Manuscript table - Manuscript_DateOfAcceptance DATETIME, Manuscript_JournalBeginningPageNumber INT, Manuscript_order INT
5. Fields added in ManuscriptFeedback - ManuscriptTotalScore INT(Even though the ManuscriptTotalScore is a derived attribute, we want to store it because it just needs to be calculated only once which does not have high computational risk. Also, we don't have to sync it with the time.
6. Also, in our schema last time, we had "idmanuscript_feedback" as a primary key for Feedback table, which has been updated to the primary composite key of Manuscript_manuscript_id and reviewer_reviewer_id.