MySQL Exercises

1. <https://www.figma.com/board/XBzXM5MnONkzmruJoA5pGu/Bookstore-Database?t=K0agg3op6HZwCVcv-6>
2. <https://www.figma.com/board/xv8GPHRBwoqJq3KTtf9hxx/Hospital?t=K0agg3op6HZwCVcv-6>
3. Person

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RG | Name | {Address} | Phone | {Skill} |

Not normalized

Normalized form:

Person

|  |  |  |
| --- | --- | --- |
| RG | Name | Phone |

Person\_Address

|  |  |
| --- | --- |
| RG | Address |

Person\_Skill

|  |  |
| --- | --- |
| RG | Skill |

Relation R

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | F | G |

Consider also the following set of functional dependencies:

{A, B} → {C, D, E, F}

{B} → {G, H}

Normalize this relation to the most appropriate normal form.

R1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | F |

R2

|  |  |  |
| --- | --- | --- |
| B | G | H |

SELECT Name FROM Student WHERE Status = 'good standing' AND Address IN ('da Malhangalene', 'da Goa') AND Course = 'Masters';

SELECT S.Name, T.Title FROM Student S JOIN Thesis T ON S.RA = T.RA\_Student WHERE T.Defense\_Year = 2005;

SELECT DISTINCT S.Name FROM Student S JOIN Thesis T1 ON S.RA = T1.RA\_Student WHERE S.Course = 'PhD' AND EXISTS ( SELECT 1 FROM Thesis T2 WHERE T2.RA\_Student = S.RA AND T2.Type = 'Masters');

SELECT P.Title FROM Publications P JOIN Persons PR ON P.AuthorID = PR.PersonID WHERE PR.Name = 'Anderson' AND P.Year = 2005 AND P.Type = 'Teacher';

SELECT DISTINCT P1.Title FROM Publications P1 JOIN Publications P2 ON P1.PublicationID = P2.PublicationID WHERE P1.Type = 'Teacher' AND P2.Type = 'Student';

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1.

CREATE TRIGGER preventUnderageEmployee

BEFORE INSERT ON Employee

FOR EACH ROW

BEGIN

IF NEW.age < 18 THEN

SIGNAL SQLSTATE '45000'

SET MESSAGE\_TEXT = 'Cannot insert employee under the age of 18';

END IF;

END;

2.

CREATE TRIGGER addPrefix

BEFORE INSERT ON Employee

FOR EACH ROW

BEGIN

IF TIMESTAMPDIFF(YEAR, NEW.birthdate, CURDATE()) > 30 THEN

SET NEW.name = CONCAT('Mr./Ms. ', NEW.name);

END IF;

END;