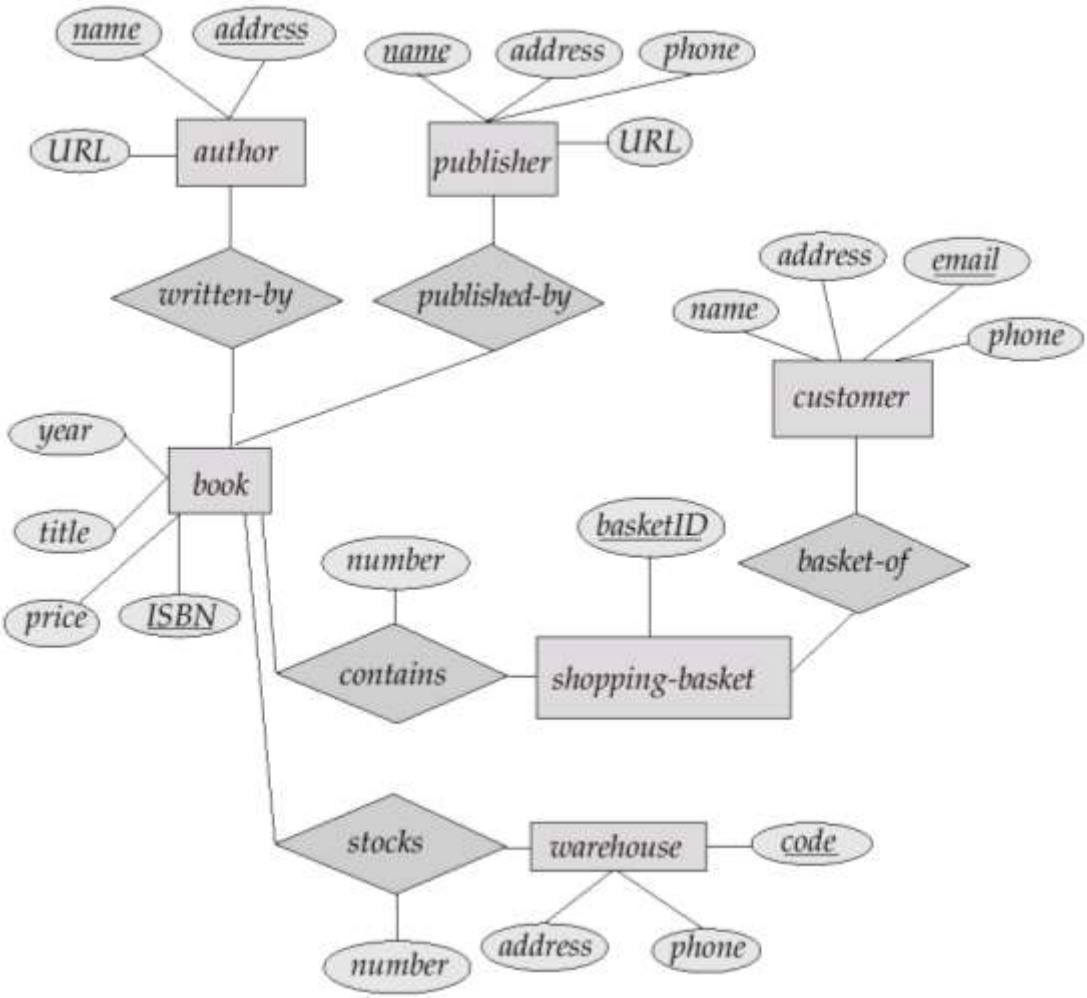
Lab Session 3: Conversion of ER models to Relational Models

1. Consider the following E-R model about a bookshop database:

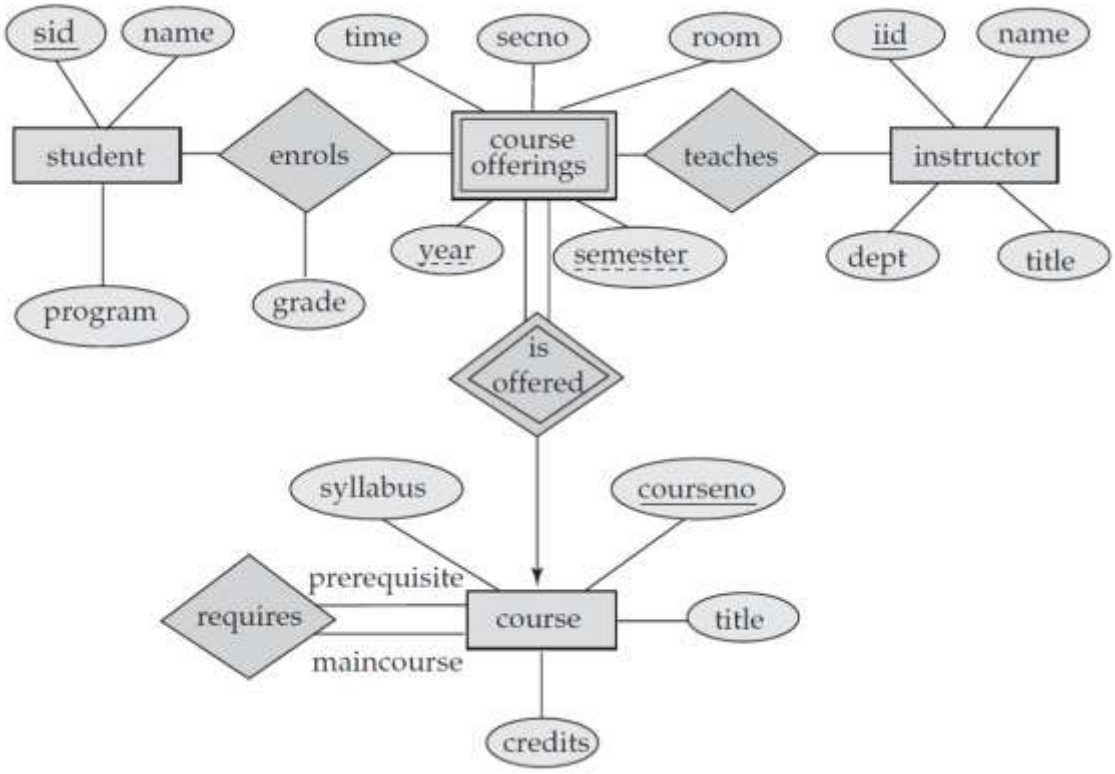


Convert this E-R model to a relational model by specifying the set of tables that should be created, including their columns, keys, and foreign keys. Use the following notation:

$table_1(\underline{column_1}, column_2, column_3, column_4, \ldots)$
$column_2 : FK(table_2)$
$column_3, column_4 : FK(table_3)$

where $\underline{column_1}$ is underlined because it is the table key, and $column_2$ is a foreign key to another table ($table_2$).

2. Consider the following E-R model about a university database:

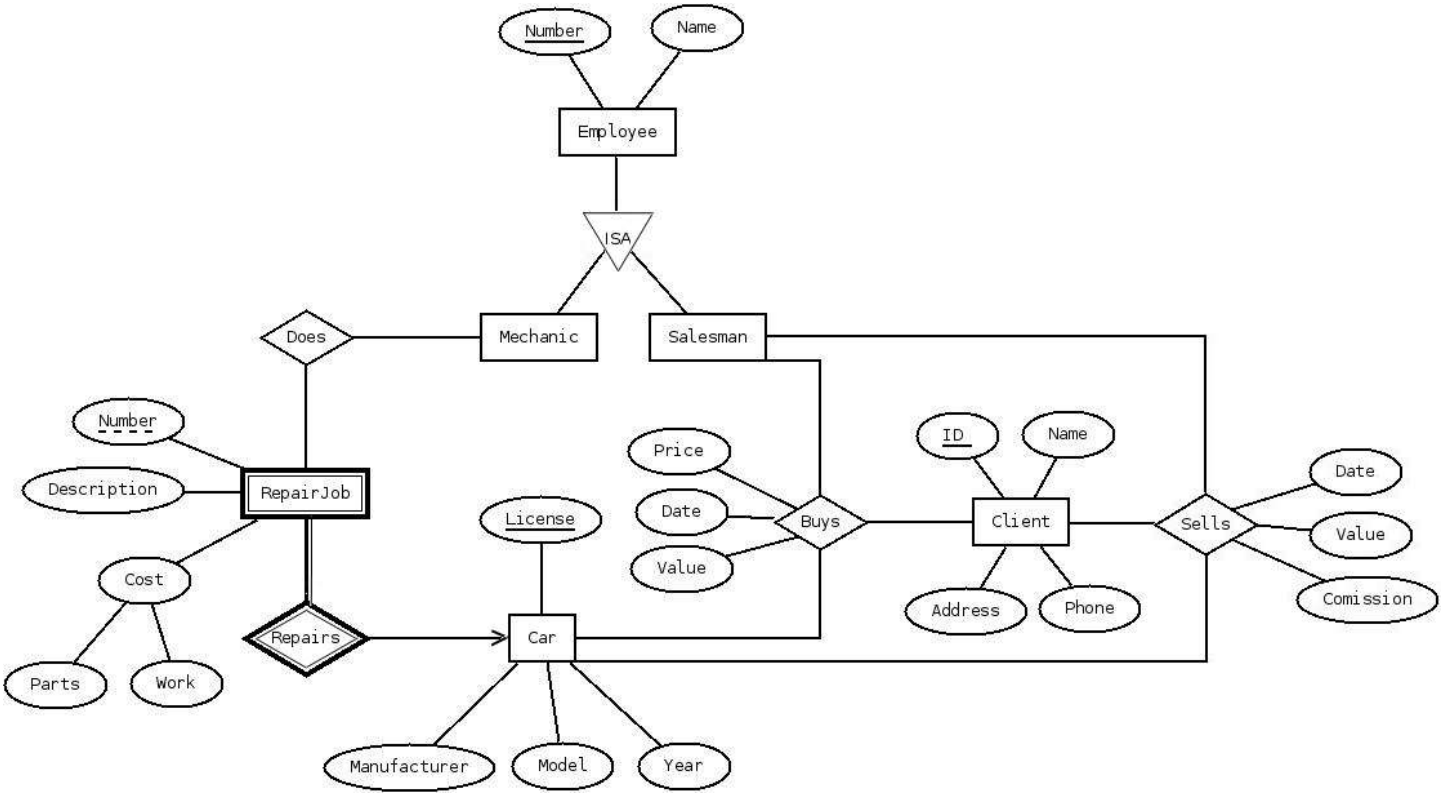


Convert this E-R model to a relational model by specifying the set of tables that should be created, including their columns, keys, and foreign keys. Use the following notation:

$$table_1(\underline{column_1}, column_2, column_3, column_4, \ldots)$$
$$column_2 : FK(table_2)$$
$$column_3, column_4 : FK(table_3)$$

where $\underline{column_1}$ is underlined because it is the table key, and $column_2$ is a foreign key to another table ($table_2$).

3. Consider the following E-R model about an auto repair shop:

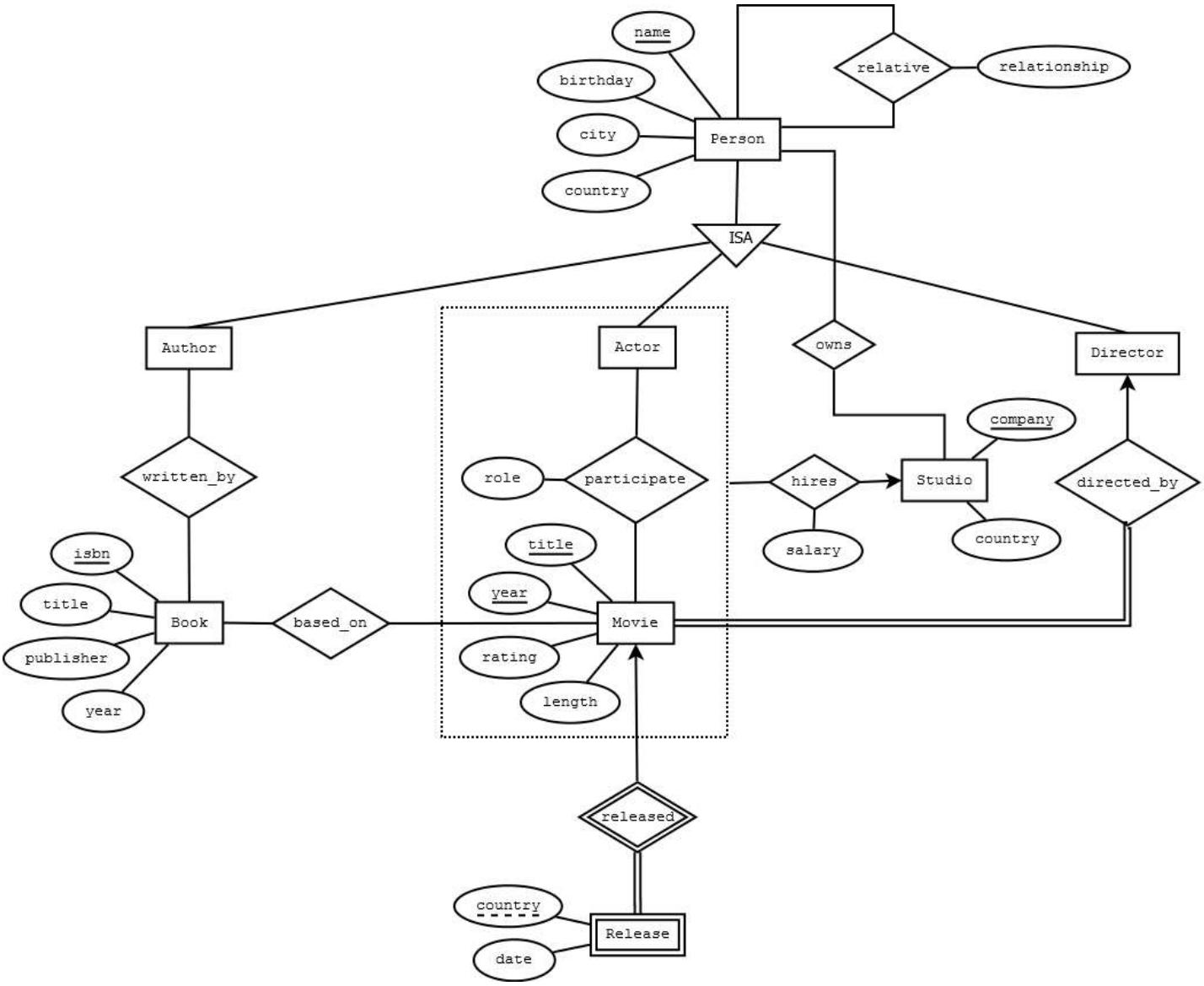


Convert this E-R model to a relational model by specifying the set of tables that should be created, including their columns, keys, and foreign keys. Use the following notation:

table$_1$(<u>column$_1$</u>, column$_2$, column$_3$, column$_4$, …)
column$_2$: FK(table$_2$)
column$_3$, column$_4$: FK(table$_3$)

where *<u>column$_1$</u>* is underlined because it is the table key, and *column$_2$* is a foreign key to another table (*table$_2$*).

4. The following diagram is a possible solution for exercise 1 in the previous lab:



Convert this E-R model to a relational model by specifying the set of tables that should be created, including their columns, keys, and foreign keys. Use the following notation:

table$_1$(*column*$_1$, *column*$_2$, *column*$_3$, *column*$_4$, …)
column$_2$: FK(*table*$_2$)
column$_3$, *column*$_4$: FK(*table*$_3$)

where *column*$_1$ is underlined because it is the table key, and *column*$_2$ is a foreign key to another table (*table*$_2$).