



# Universidad Autónoma de Zacatecas

Unidad Académica de Ingeniería Eléctrica

Programa Académico de Ingeniería de Software

## Practice 1

<b>Practice name</b>	Review of Database Systems I
<b>Academic Program</b>	Software Engineering
<b>Subject name</b>	Laboratory of Database Systems II
<b>Unit</b>	I. SQL.
<b>Professor</b>	Aldonso Becerra Sánchez
<b>Due date</b>	August 19, 2021 3:00 pm
<b>Due date with penalty</b>	August 19, 2021 23:59 pm
<b>Elaboration date</b>	August 17, 2021

<b>Practice objective</b>	Review the creation of entity-relationship models (ER model) from several data sources (problem statements).
<b>Estimated time of completion</b>	5 hours
<b>Introduction</b>	Entity-relationship model is the most powerful tool in the database environment. By means of it, each problem statement is modeled and subsequently converted into its equivalent relational model. The final stage is to reach a complete and functional database schema that reflects the problem statement in a reliable way.

### Reference 1:

A. Silberschatz, H. F. Korth, S. Sudarshan. Fundamentos de bases de datos. Mc Graw Hill.

### Reference 2:

### Reference 3:

### Initial activity:

Read the whole practice before start it.



# Universidad Autónoma de Zacatecas

Unidad Académica de Ingeniería Eléctrica

Programa Académico de Ingeniería de Software

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Write the corresponding report, starting with the **Introduction** section.

## Activity 1:

Write the section that describes the **Work developed** in the following activities.

There is an establishment that provides book sales. Such books are always interested in knowing their author (s) and their publisher, as well as the warehouse where they are stored and the sales establishment (around the world) where they are sold. Suppose the bookstore adds music cassettes, CDs, Blue-ray and electronic cards for online purchases (a code for digital format) to its collection.

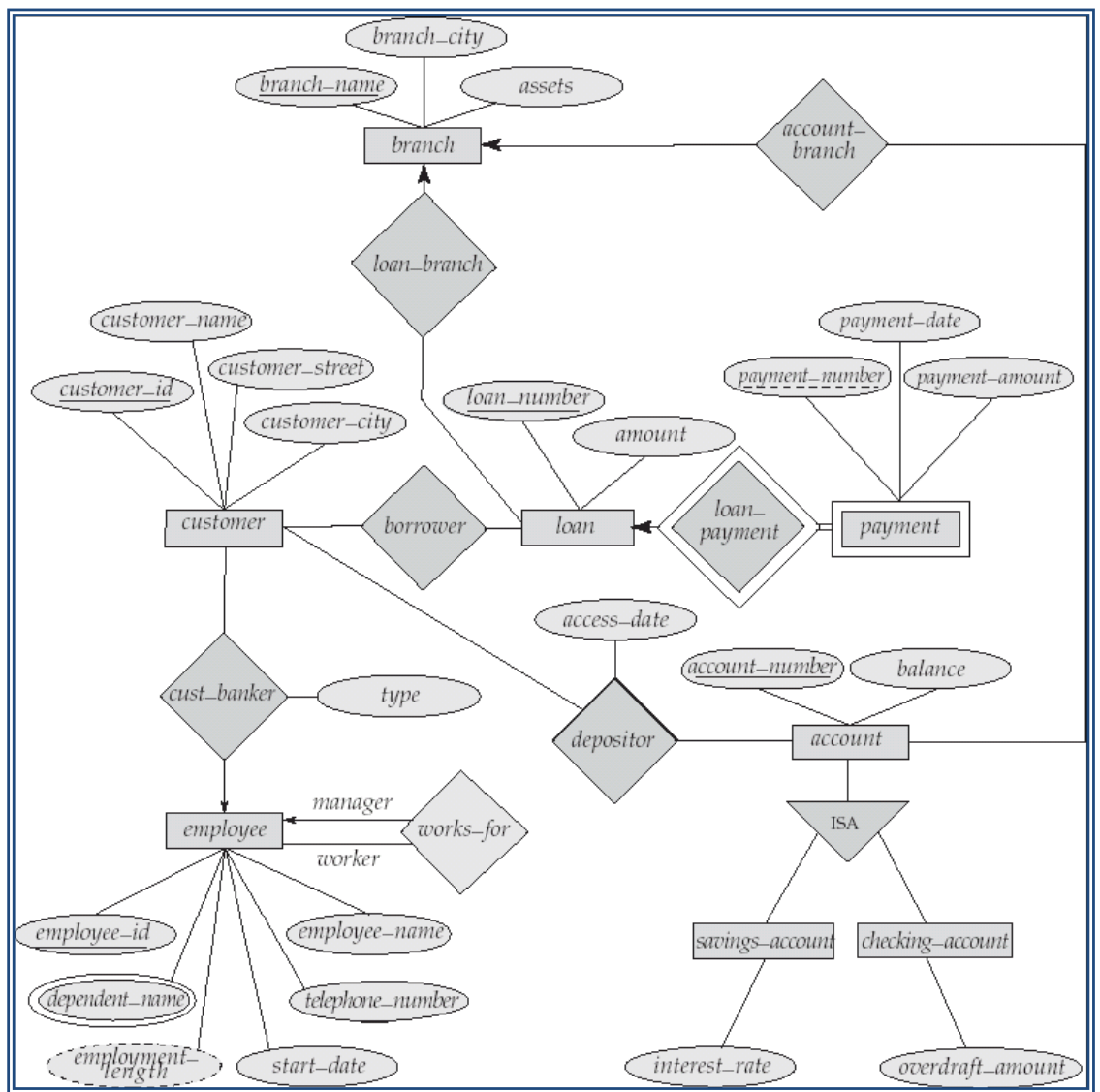
- 1) Generate an entity-relationship model that allows obtaining information such as the one indicated (this information is only a set of requirements):
  - Customers who buy the most items.
  - Products that customers currently have in the shopping cart.
  - Know the best-selling product.
  - Know what items are in stock on a specific date.
  - Obtain the lists of the books with their complete data.
  - Know the author of the best-selling book.
  - Know the best-selling musical medium.
  - Know the least sold type of musical medium.
  - Know today's sales.
  - Know the best-selling electronic files.
- 2) Generate the corresponding relational model in Sqldeveloper.



#### Activity 2:

Write the section that describes the **Work developed** in the following activities.

- Check the primary key columns.
- Then correct the necessary attributes in the whole diagram.
- Convert the following entity-relationship diagram to relational model using Sqldeveloper.
- Generate automatically the logical model by using the reverse engineering.

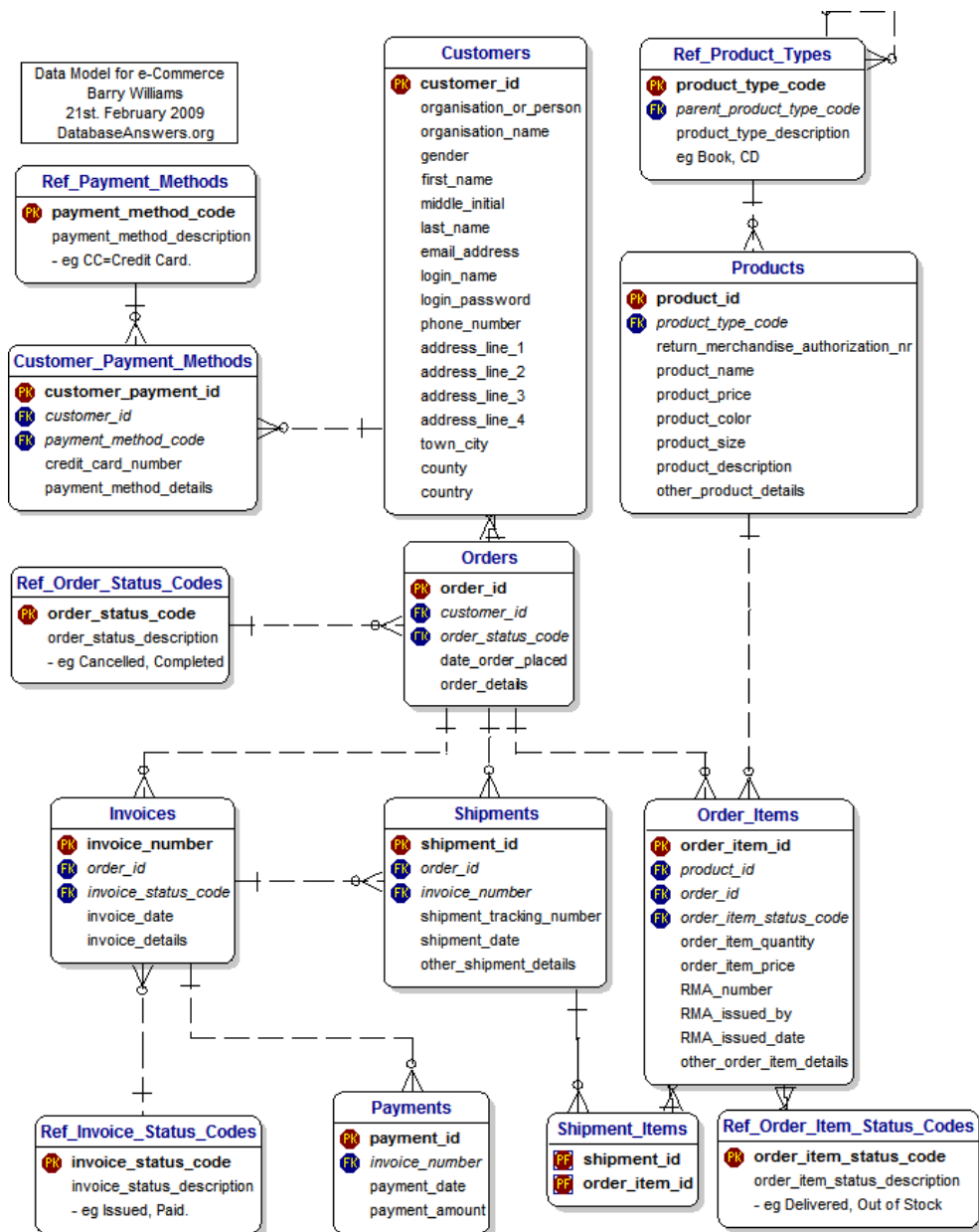




#### Activity 3:

Write the section that describes the **Work developed** in the following activities.

Using the following relational diagram, convert it to entity-relationship model.





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Unidad Académica de Ingeniería Eléctrica

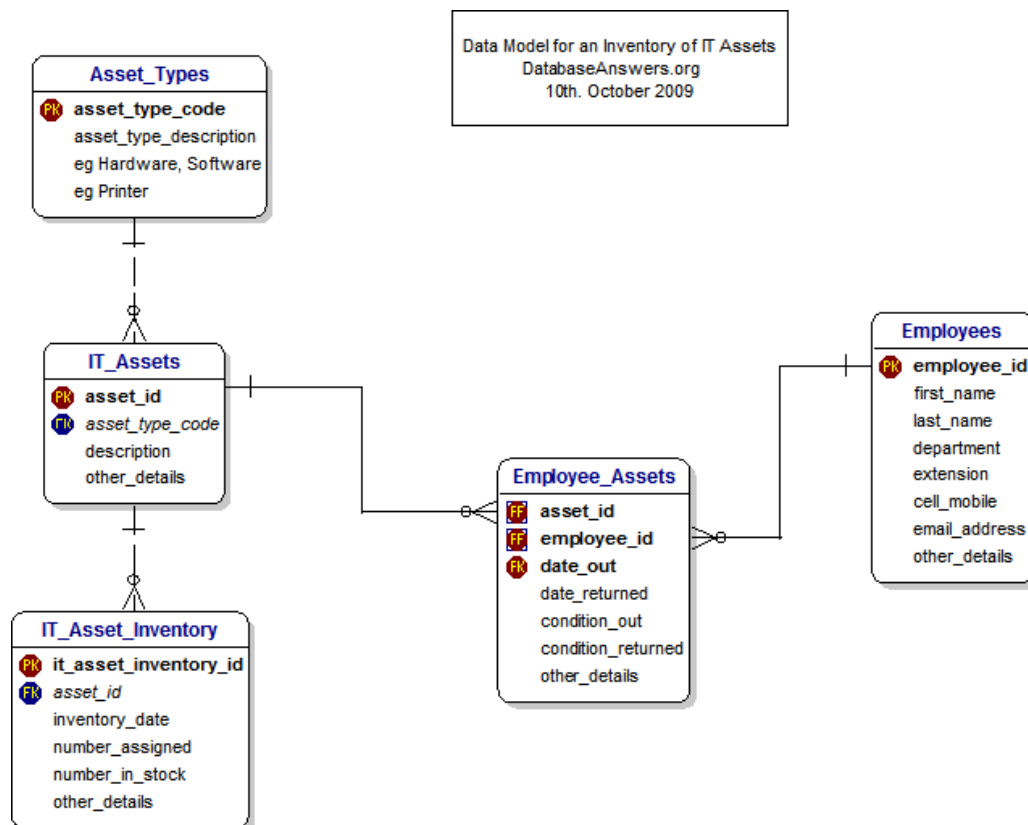
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## Activity 4:

Write the section that describes the **work developed** in the following activities.

Using the following physical diagram:

- 1) Generate the corresponding DDL Oracle statements.
- 2) Generate automatically the corresponding relational model in Sqldeveloper (using the GUI).
- 3) Compare the results with the provided in this exercise.
- 4) Generate automatically the logical model by using the reverse engineering.



## Activity 5:

Write the **Pre-assessment** section.



# Universidad Autónoma de Zacatecas

Unidad Académica de Ingeniería Eléctrica

Programa Académico de Ingeniería de Software

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## Final activity:

Write the **Conclusion** section.

## Completion:

Submit the documents to <http://ingsoftware.reduaz.mx/moodle>

## Attached file that is required for this task (optional):

email: [a7donso@gmail.com](mailto:a7donso@gmail.com)