Objectives

1. *Modelling for Software Projects*
2. *Entity-Relationship Diagram*
3. *Example for ER Diagram*
4. *Drawing ER Diagram using Dia Software*

Practical Work

Part 1:

Definition:

"*A **modelling language** is any artificial language that can be used to express information or knowledge or systems in a structure that is defined by a consistent set of rules.*"

Examples:

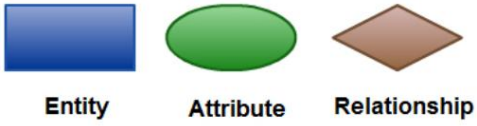
- ⇨ UML : Unified Modelling Language
- ⇨ Entity-Relationship (ER) Diagram

Part 2:

Entity-Relationship (ER) Diagram is a graphical language being used often for database design.

ER Diagram is used to provide a ***graphical representation*** for the logical structure of a database.

The main elements of the ER Diagram are:



Entity

is a real-world object that is distinguishable from other objects : can be a person, place, event, or anything that has properties.

Attribute

is a property, trait, or characteristic of

- ⇨ an entity.
- ⇨ relationship,
- ⇨ or another attribute

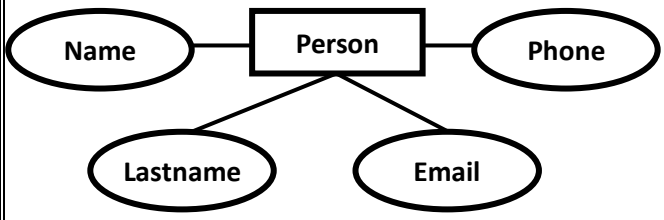
Relationship

A relationship describes how entities interact.

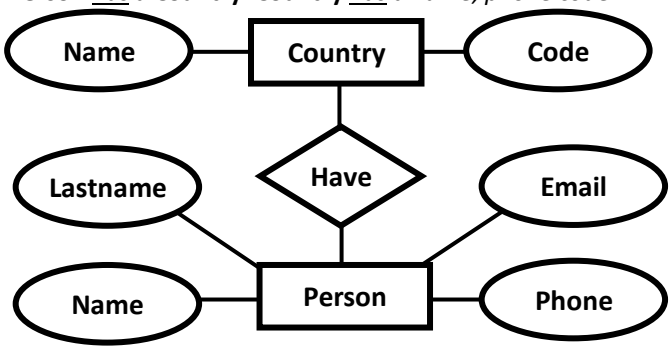
Part 3:

Phonebook:

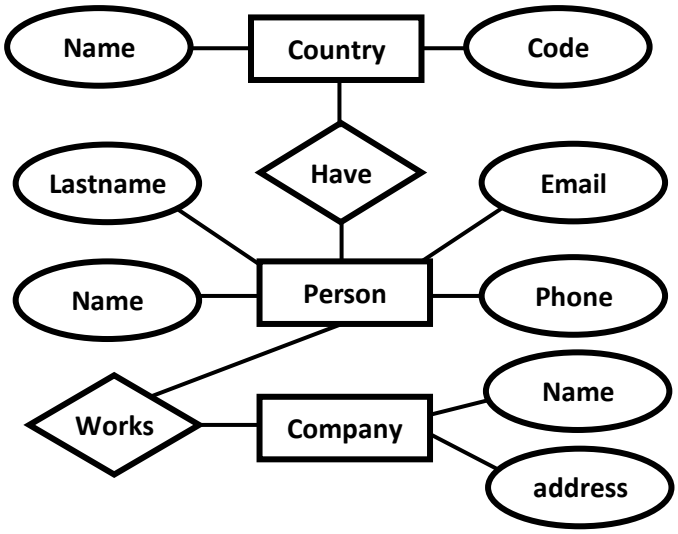
Person has *Name, Family name, Phone number, Email*.



Person has a **Country**. **Country** has a *name, phone code.*



Person works for a **Company**. **Company** has *name, address*



Part 4:

1. Download and install Dia Editor from the link below: www.LearnDB.com/tp
2. Select ER under Other sheets

3. Draw the ER diagram for the **Phonebook**

Homework

Draw the ER diagram for the following Applications

1. Primary School
2. Health Clinic (Hospital)
3. University
4. Voting System

Questions

Explain the following Terms:

1. Class Diagram
2. Multi-Valued Attribute
3. Derived Attribute
4. Cardinality