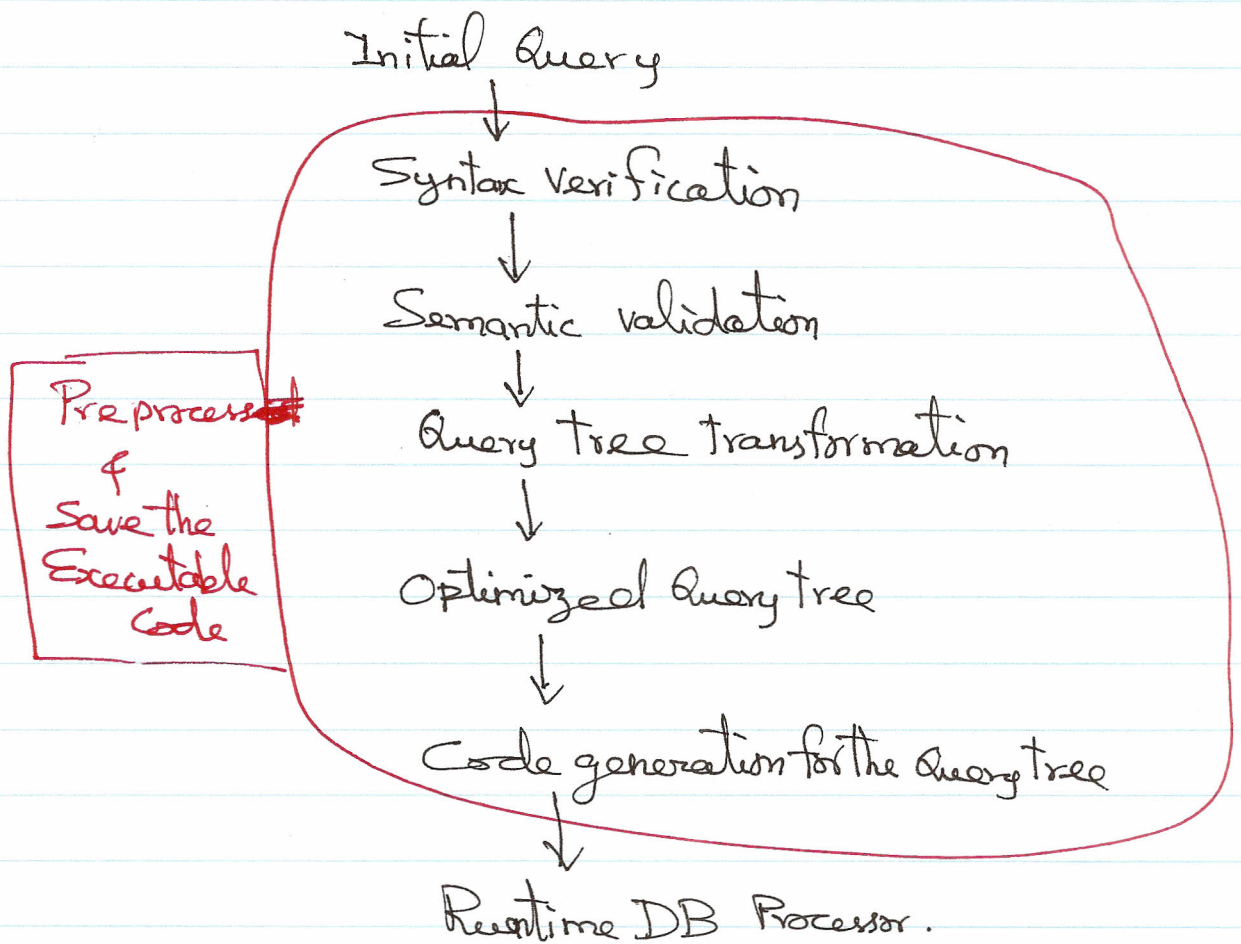


Query Execution Process



Stored Procedure

A procedure with several SQL statements and can accept parameters.

It also supports input/output operations within the procedure

Further local variables can be declared and used for passing values between SQL statements and data manipulations.

Additionally flow control such as if, while, can be supported.

* The procedure will be stored as an executable object within the DB.

Create Procedure ~~uspEmpSalary.~~
uspEmpTotalHours

parameter specifications

AS

Begin

[Declaration of local variables

[statements

End

- Stored procedures are preprocessed and saved as an executable object inside the DB.

- Later this executable SP object can be invoked.

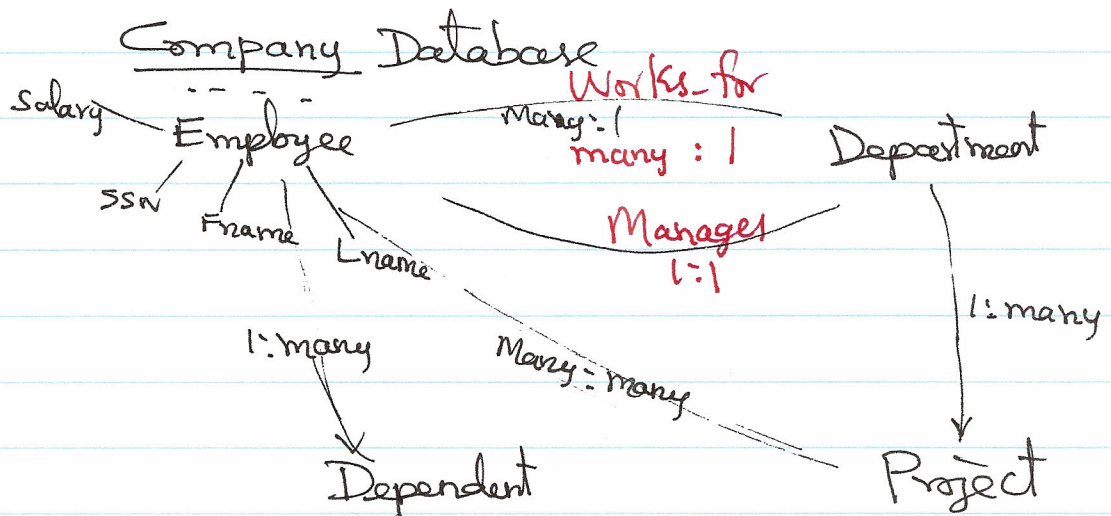
- * interactively on the GUI interface
Right click on the SP object
select "Execute Stored Procedure..."
- * SQL Query Window
EXEC SPname parametervalue

Database Design

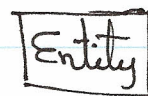
① Design a Conceptual (Logical) Schema for the DB

E-R Diagram
Entity Relationship

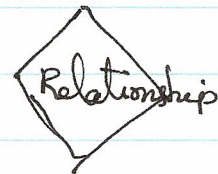
UML diagram
Unified Modeling Language



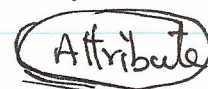
Entity: Rectangle blocks



Relationship: Diamond block



Attribute: Oval block



⋮
⋮
⋮

Key

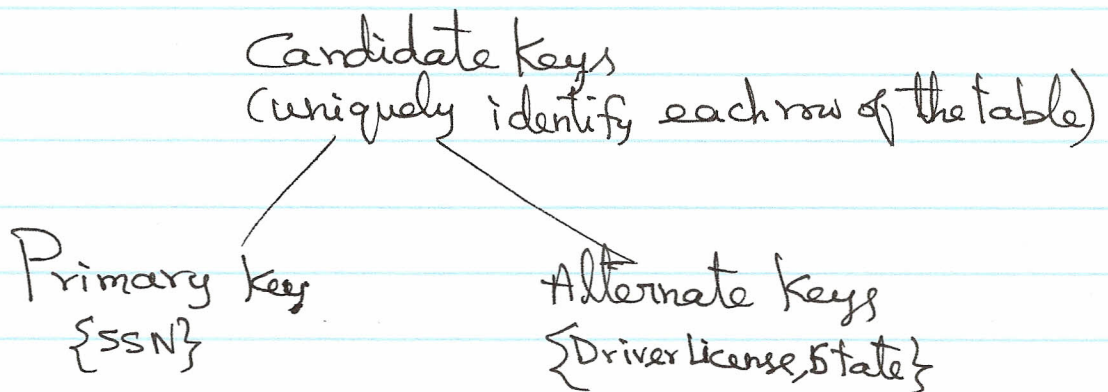
A minimal subset of attributes of a table that uniquely determines all other attributes of a table

Keys:

~~$\{ \text{Fname, Lname, SSN} \} \rightarrow \{ \text{Minit, Bdate, Address, } \dots \}$~~

Candidate keys: $\{ \text{SSN} \} \rightarrow \{ \text{Fname, Minit, Lname, Bdate, } \dots \}$

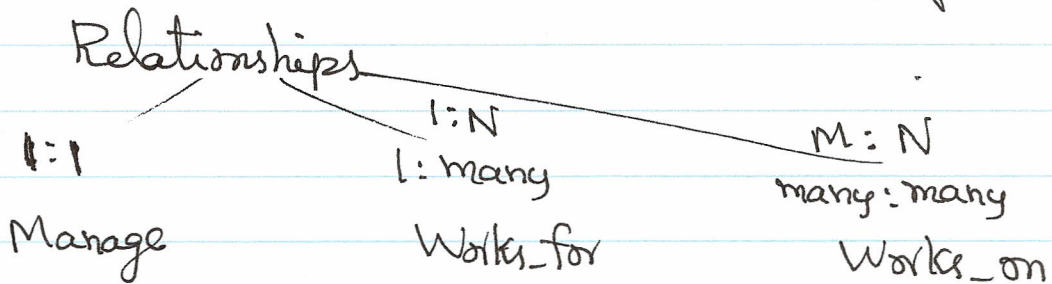
$\{ \text{Fname, Minit, Lname, Address} \} \rightarrow \{ \text{SSN, Bdate, Sex} \}$



Relational Database Design

Conceptual Schema $\xrightarrow{\text{Map}}$ Relational Schema
E-R Diagram 2-D Tables

Entity type \longrightarrow Table
Attributes --- Columns of the Table



Mapping of E-R Diagram to Relational Schema

