

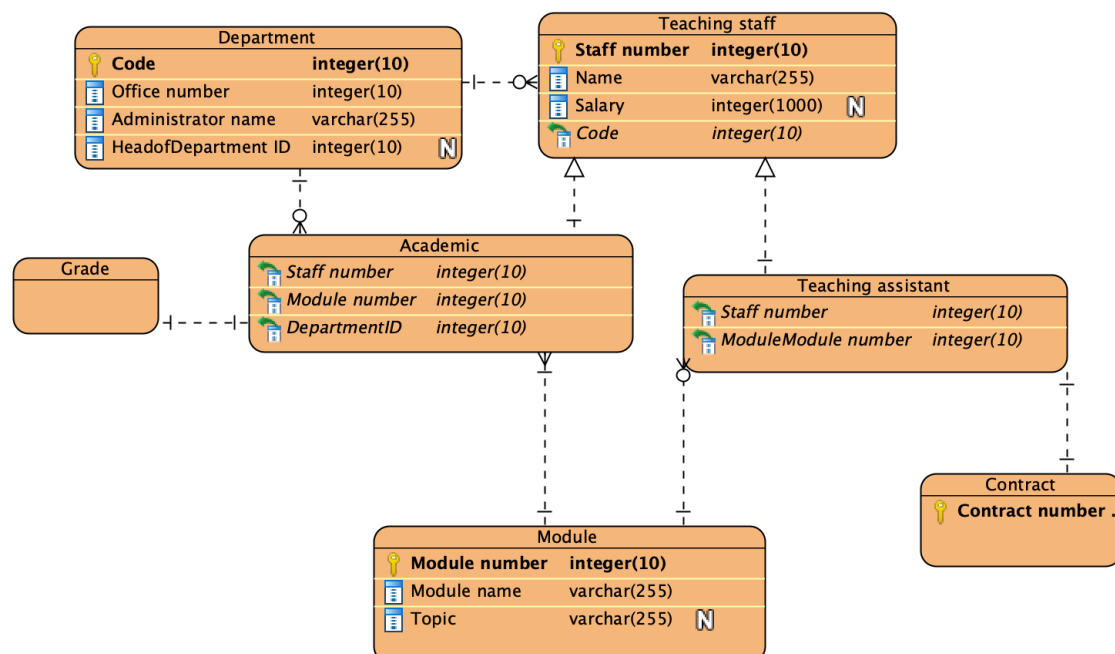
ER Modelling Exercise - SMCSE

The School of Mathematics, Computer Science and Engineering is composed of several departments. Each **department** is identified by a **code**, has a departmental office (**office number**) and a departmental administrator (**administrator name**). Each department has **teaching staffs** that teach **modules**. Each teaching staff member has a **staff number**, a **name**, and a **salary**. Teaching staff are either **Academics or Teaching Assistants**. Academics have grades, while Teaching Assistants have contracts (Contract Number). Most Academics are responsible for one or more modules (**module number**, **module name**, **topic**), and a module is the responsibility of only one Academic. Teaching Assistants must assist with teaching one or more modules. Module can have several Teaching Assistants. In each department, one of the Academics acts as the Head of Department, and they have a special responsibility allowance.

Design an E-R diagram for the above database.

Derive a corresponding relational scheme from your E-R diagram.

E-R diagram:



Relational scheme:

Department (**Code**, Office number, Administrator name, Head of Department)

FOREIGN KEY Head of Department REFERENCES Academics (Staff Number)

Teaching staff (**Staff Number**, Name, Salary, Department Code)

FOREIGN KEY Code REFERENCES Department (Code)

Academics (**Staff Number**, Grade, Special Responsibility Allowance)

FOREIGN KEY Staff Number REFERENCES Teaching staff (Staff Number)

Teaching Assistants (**Staff Number**, Contract Number)

FOREIGN KEY Staff Number REFERENCES Teaching staff (Staff Number)

Module (**Module Number**, Module Name, Topic, Responsible Academic)

FOREIGN KEY Responsible Academic REFERENCES Academics (Staff Number)

Module Assistance (**Module Number**, Teaching Assistant Staff Number)

FOREIGN KEY Module Number REFERENCES Module (Module Number)

FOREIGN KEY Teaching Assistant Staff Number REFERENCES Teaching Assistants (Staff Number)