

Relationship Sets

Entity Sets

Mentors		
PK	last_name	varchar
PK	first_name	varchar
	class_year	integer

**One (or zero) to one (or many):** A mentor may or may not teach a course or a software, but certainly can teach many

**One (and only one) to one (or many):** Every mentor must work at least one shift. They cannot work zero shifts, but can (and probably do) work many shifts

Teaches_Courses		
PK, FK	m_last	varchar
PK, FK	m_first	varchar
PK, FK	c_id	varchar

Teaches_Software		
PK, FK	m_last	varchar
PK, FK	m_first	varchar
PK, FK	s_name	varchar

Works		
PK, FK	m_last	varchar
PK, FK	m_first	varchar
PK, FK	s_day	day_of_week
PK, FK	s_time	time with time zone

**to One (or zero):**  
A course or software may or may not be covered by a mentor

Courses		
PK	id	varchar

Softwares		
PK	name	varchar

**Softwares and Courses.**  
While it may seem unnecessary to put softwares and Courses in their own tables (as opposed to leaving the information in the teaches tables, as there is no additional attributes), it fits the Entity-Relationship concept more appropriately to have them separated, both from their respective teaches tables and eachother

**day\_of\_week** is a custom ENUM type with each day of the week encoded as 'Mon', 'Tue', etc.

Shifts		
PK	day	day_of_week
PK	time	time with time zone

**One (or many) to one (and only one):**  
Each entity in our relationship set must be tied to exactly one shift, but many different entities can be tied to the same shift.