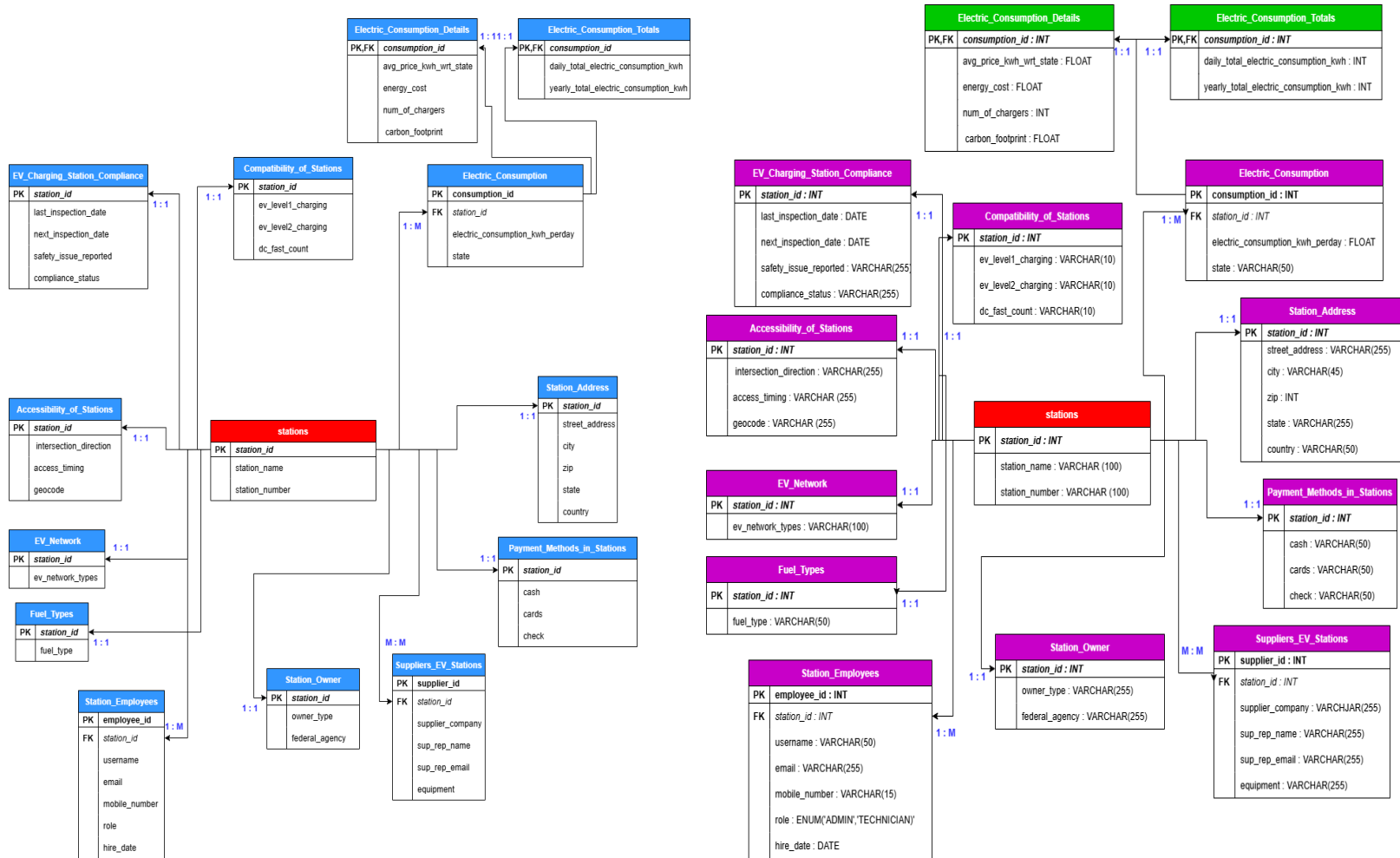


Conceptual Data Modeling : Primary Key - Bold , Foreign Key - Italicized EER and UML Diagram



Mapping Conceptual Model to Relational Model Tables and Attributes

1. Stations (**station_id**, station_name, station_number)
2. Accessibility_of_Stations (**station_id**, intersection_direction, access_timing, geocode)
3. Compatibility_of_Stations (**station_id**, ev_level1_charging, ev_level2_charging, dc_fast_count)
4. Electric_Consumption (**id**, state, electric_consumption_kwh_perday, daily_total_electric_consumption_kwh, yearly_total_electric_consumption_kwh, avg_price_kwh_wrt_state, energy_cost, carbon_footprint, num_of_chargers)
5. EV_Charging_Station_Compliance (**station_id**, last_inspection_date, next_inspection_date, safety_issue_reported, compliance_status)
6. EV_Network (**station_id**, ev_network_types)
7. Fuel_Types (**station_id**, fuel_type)
8. Payment_Methods_in_Stations (**station_id**, cash, cards, checks)
9. Station_Address (**station_id**, street_address, city, zip, state, country)

10. Station_Employees (**employee_id**, *station_id*, user_name, email, mobile_number, role, hire_date)
11. Station_Owner (**station_id**, owner_type, federal_agency)
12. Suppliers_EV_Stations (**supplier_id**, *station_id*, supplier_company, sup_rep_name, sup_rep_email, equipment)

We normalized the **Electric_Consumption** entity into three related tables to eliminate redundancy and ensure each table focuses on a single theme: **Electric_Consumption** (daily consumption details), **Electric_Consumption_Totals** (aggregated totals), and **Electric_Consumption_Details** (pricing and environmental factors). All other tables in the schema are already in 4NF, and this completes the normalization of the entire scheme.

	TABLE NAME	PRIMARY KEY	ATTRIBUTES
1.	Stations	station_id	station_name, station_number
2.	Accessibility_of_Stations	station_id	intersection_direction, access_timing, geocode
3.	Compatibility_of_Stations	station_id	ev_level1_charging, ev_level2_charging, dc_fast_count
4.	Electric_Consumption	consumption_id	station_id (FK), state, electric_consumption_kwh_perday
5.	Electric_Consumption_Totals	consumption_id (FK)	daily_total_electric_consumption_kwh, yearly_total_electric_consumption_kwh
6.	Electric_Consumption_Details	consumption_id (FK)	avg_price_kwh_wrt_state, energy_cost, carbon_footprint, num_of_chargers
7.	EV_Charging_Station_Compliance	station_id	last_inspection_date, next_inspection_date, safety_issue_reported, compliance_status
8.	EV_Network	station_id	ev_network_types
9.	Fuel_Types	station_id	fuel_type
10	Payment_Methods_in_Stations	station_id	cash, cards, checks
11	Station_Address	station_id	street_address, city, zip, state, country
12	Station_Employees	employee_id	station_id (FK), user_name, email, mobile_number, role, hire_date
13	Station_Owner	station_id	owner_type, federal_agency
14	Suppliers_EV_Stations	station_id	station_id (FK), supplier_company, sup_rep_name, sup_rep_email, equipment