CS4400: Introduction to Database Systems
Relational Schema for SQL Testing Database (Wednesday, March 23, 2022)

This database is constructed as an extension to the Company Database as defined in the Elmasri & Navathe textbook used in class. The initial relations (and the initial dataset for the physical schema) have been designed so that they are unchanged from the textbook. The added relations will give more opportunities to produce a wider variety of queries for testing purposes.

--- initial relational schema ---
employee = (ssn, fname, minit, lname, bdate, address, salary, sex, dept_number [fk2], supervisor_ssn [fk7])
fk2: dept_number → **department** (number), fk7: supervisor_ssn → **employee** (ssn), non-null attributes: {dept_number}

department = (number, name, manager_ssn [fk4], start_date)
fk4: manager_ssn → **employee** (ssn), unique attributes: {name}

project = (number, name, location, controlling_dept [fk3])
fk3: controlling_dept → **department** (number), non-null attributes: {controlling_dept}, unique attributes: {name}

dependent = (ssn [fk1], name, sex, birth_date, relationship)
fk1: ssn → **employee** (ssn)

works_on = (employee_ssn [fk5], project_number [fk6], hours)
fk5: employee_ssn → **employee** (ssn), fk6: project_number → **project** (number)

dept_locations = (dept_number [fk8], location_name)
fk8: dept_number → **department** (number)

--- added relational schema ---
customer = (cid, company, location, assets, fsid [fk10])
fk10: fsid → **fund_source** (fsid), non-null attributes: {fsid}

budget = (number [fk9], code, balance, fsid [fk11])
fk9: number → **department** (number), fk11: fsid → **fund_source** (fsid)

fund_source = (fsid, remaining, usage_rate, pnumber [fk22])
fk22: pnumber → **project** (number)

remote_access = (ssn [fk12], ip_address, account)
fk12: ssn → **employee** (ssn), unique attributes: {ip_address}

time_frames = (ssn [fk13], start_hour, duration)
fk13: ssn → **remote_access** (ssn)

in_office = (ssn [fk14], building, room)
fk14: ssn → **employee** (ssn)

analysis = (number [fk15], title, frequency, quantity)
fk15: number → **project** (number)

operations = (number [fk16], title, team_size)
fk16: number → **project** (number)

operation_skills = (number [fk17], skill_name)
fk17: number → **operations** (number)

maintenance = (number [fk18])
fk18: number → **project** (number)

maintenance_types = (number [fk19] , remote_access, frequency, cost)
fk19: number → **maintenance** (number), remote_access ∈ {'none', 'intranet', 'vpn', 'open'}

interns_in = (ssn, name [fk20], number [fk21], rating)
fk20: (ssn, name) → **dependent** (ssn, name), fk21: number → **department** (number)