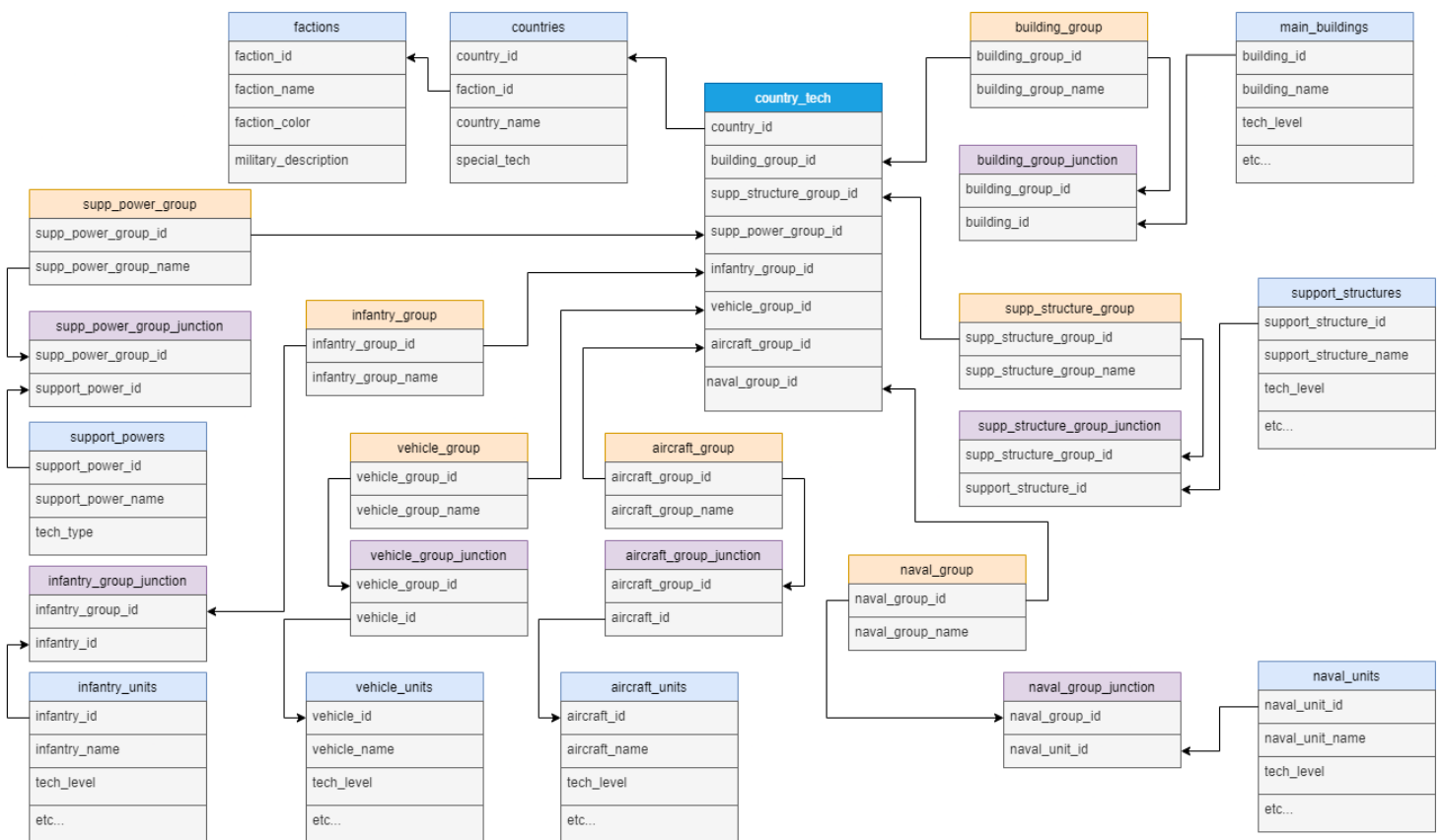


# GAME REFERENCE DATABASE SYSTEM

## Project Description:

Develop a Game Reference Database system using **PostgreSQL**. The database will be based on the game **Red Alert 2: Yuri's Revenge**, displaying the relationships between factions and countries, as well as the technology for each country. It will also include detailed lists of all structures, support structures, support powers, infantry units, vehicle units, aircraft units, and naval units.

## Database diagram:



## Creating the Database Process:

- Task 1: Create the database “Yuri”
- Task 2: Create the tables (List Tables, Group Tables, Junction Tables)
- Task 3: Add constraints and foreign keys
- Task 4: Insert values into the tables
- Task 5: Create some query codes for testing

## Task 1: Create the database “Yuri”

---

```
--# Create the database "Yuri"
CREATE DATABASE yuri;
```

## Task 2: Create the tables (List Tables, Group Tables, Junction Tables)

---

I'll create first all the List Tables

```
--# Create the Sequence for faction_id
CREATE SEQUENCE faction_id_seq START 1;

--# Create table for factions
CREATE TABLE factions (
  faction_id VARCHAR(10) DEFAULT 'FA' || LPAD(NEXTVAL('faction_id_seq')::TEXT, 3, '0') PRIMARY KEY,
  faction_name VARCHAR(255) NOT NULL,
  faction_color VARCHAR(50),
  n_country_affiliates INT,
  military_description TEXT);

--# Create the Sequence for country_id
CREATE SEQUENCE country_id_seq START 1;

--# Create table for countries
CREATE TABLE countries (
  country_id VARCHAR(10) DEFAULT 'COID' || LPAD(NEXTVAL('country_id_seq')::TEXT, 3, '0') PRIMARY KEY,
  faction_id VARCHAR(10) NOT NULL,
  country_name VARCHAR(255) NOT NULL,
  special_tech TEXT);

--# Create the Sequence for building_id
CREATE SEQUENCE building_id_seq START 1;

--# Create table for main buildings
CREATE TABLE main_buildings (
  building_id VARCHAR(10) DEFAULT 'BUID' || LPAD(NEXTVAL('building_id_seq')::TEXT, 3, '0') PRIMARY KEY,
  building_name VARCHAR(255) NOT NULL,
  tech_level INT NOT NULL,
  hit_points INT NOT NULL,
  armor_type TEXT NOT NULL,
  cost_in_dollars NUMERIC(10, 2),
  build_time_in_seconds INT NOT NULL,
  power_consumption INT,
  can_be_captured BOOLEAN NOT NULL,
  tech_type VARCHAR(50) NOT NULL,
  role_description TEXT);
```

```
--# Create the Sequence for support_structure_id
CREATE SEQUENCE support_structure_id_seq START 1;
```

```
--# Create table for support structures
CREATE TABLE support_structures (
support_structure_id VARCHAR(10) DEFAULT 'SID' || LPAD(NEXTVAL('support_structure_id_seq')::TEXT, 3, '0') PRIMARY KEY,
support_structure_name VARCHAR(255) NOT NULL,
tech_level INT NOT NULL,
hit_points INT NOT NULL,
armor_type TEXT NOT NULL,
cost_in_dollars NUMERIC(10, 2),
build_time_in_seconds INT NOT NULL,
can_ground_attack BOOLEAN NOT NULL,
can_air_attack BOOLEAN NOT NULL,
power_consumption INT,
tech_type VARCHAR(50) NOT NULL,
role_description TEXT);
```

```
--# Create the Sequence for support_power_id
CREATE SEQUENCE support_power_id_seq START 1;
```

```
--# Create table for support powers
CREATE TABLE support_powers (
support_power_id VARCHAR(10) DEFAULT 'SPID' || LPAD(NEXTVAL('support_power_id_seq')::TEXT, 3, '0') PRIMARY KEY,
support_power_name VARCHAR(255) NOT NULL,
tech_type VARCHAR(50) NOT NULL);
```

```
--# Create the Sequence for infantry_id
CREATE SEQUENCE infantry_id_seq START 1;
```

```
--# Create table for infantry units
CREATE TABLE infantry_units (
infantry_id VARCHAR(10) DEFAULT 'IFID' || LPAD(NEXTVAL('infantry_id_seq')::TEXT, 3, '0') PRIMARY KEY,
infantry_name VARCHAR(255) NOT NULL,
tech_level INT NOT NULL,
hit_points INT NOT NULL,
is_unit_amphibious BOOLEAN NOT NULL,
cost_in_dollars NUMERIC(10, 2),
build_time_in_seconds INT NOT NULL,
can_ground_attack BOOLEAN NOT NULL,
can_air_attack BOOLEAN NOT NULL,
tech_type VARCHAR(50) NOT NULL);
```

```
--# Create the Sequence for vehicle_id
CREATE SEQUENCE vehicle_id_seq START 1;
```

```
--# Create table for vehicle units
CREATE TABLE vehicle_units (
vehicle_id VARCHAR(10) DEFAULT 'VEID' || LPAD(NEXTVAL('vehicle_id_seq')::TEXT, 3, '0') PRIMARY KEY,
vehicle_name VARCHAR(255) NOT NULL,
tech_level INT NOT NULL,
hit_points INT NOT NULL,
is_unit_amphibious BOOLEAN NOT NULL,
cost_in_dollars NUMERIC(10, 2),
build_time_in_seconds INT NOT NULL,
can_ground_attack BOOLEAN NOT NULL,
can_air_attack BOOLEAN NOT NULL,
tech_type VARCHAR(50) NOT NULL);
```

```
--# Create the sequence for aircraft units
CREATE SEQUENCE aircraft_id_seq START 1;
```

```
--# Create table for aircraft units
CREATE TABLE aircraft_units (
aircraft_id VARCHAR(10) DEFAULT 'AID' || LPAD(NEXTVAL('aircraft_id_seq')::TEXT, 3, '0') PRIMARY KEY,
aircraft_name VARCHAR(255) NOT NULL,
tech_level INT NOT NULL,
hit_points INT NOT NULL,
is_unit_amphibious BOOLEAN NOT NULL,
cost_in_dollars NUMERIC(10, 2),
build_time_in_seconds INT NOT NULL,
can_ground_attack BOOLEAN NOT NULL,
can_air_attack BOOLEAN NOT NULL,
tech_type VARCHAR(50) NOT NULL);
```

```
--# Create the sequence for naval units
CREATE SEQUENCE naval_unit_id_seq START 1;
```

```
--# Create table for naval units
CREATE TABLE naval_units (
naval_unit_id VARCHAR(10) DEFAULT 'NUID' || LPAD(NEXTVAL('naval_unit_id_seq')::TEXT, 3, '0') PRIMARY KEY,
naval_unit_name VARCHAR(255) NOT NULL,
tech_level INT NOT NULL,
hit_points INT NOT NULL,
is_unit_amphibious BOOLEAN NOT NULL,
cost_in_dollars NUMERIC(10, 2),
build_time_in_seconds INT NOT NULL,
can_ground_attack BOOLEAN NOT NULL,
can_air_attack BOOLEAN NOT NULL,
tech_type VARCHAR(50) NOT NULL);
```

## Next are the Group Tables

```
--# Create a group table for main buildings
CREATE TABLE building_group (
  building_group_id SERIAL PRIMARY KEY,
  building_group_name VARCHAR(255));

--# Create a group table for support structures
CREATE TABLE support_structure_group (
  support_structure_group_id SERIAL PRIMARY KEY,
  support_structure_group_name VARCHAR(255));

--# Create a group table for support powers
CREATE TABLE support_powers_group (
  support_powers_group_id SERIAL PRIMARY KEY,
  support_powers_group_name VARCHAR(255));

--# Create a group table for infantry units
CREATE TABLE infantry_group (
  infantry_group_id SERIAL PRIMARY KEY,
  infantry_group_name VARCHAR(255));

--# Create a group table for vehicle units
CREATE TABLE vehicle_group (
  vehicle_group_id SERIAL PRIMARY KEY,
  vehicle_group_name VARCHAR(255));

--# Create a group table for aircraft units
CREATE TABLE aircraft_group (
  aircraft_group_id SERIAL PRIMARY KEY,
  aircraft_group_name VARCHAR(255));

--# Create a group table for naval units
CREATE TABLE naval_group (
  naval_group_id SERIAL PRIMARY KEY,
  naval_group_name VARCHAR(255));

--# Create the country technology group table
CREATE TABLE country_tech (
  country_id VARCHAR(10) PRIMARY KEY,
  building_group_id INT,
  support_structure_group_id INT,
  support_powers_group_id INT,
  infantry_group_id INT,
  vehicle_group_id INT,
  aircraft_group_id INT,
  naval_group_id INT);
```

## Next are the Junction Tables

```
-- Create all the junction tables

--# Create a junction table for main buildings
CREATE TABLE building_group_junction (
  building_group_id INT,
  building_id VARCHAR(10),
  PRIMARY KEY (building_group_id, building_id));

--# Create a junction table for Support Structures
CREATE TABLE support_structure_group_junction (
  support_structure_group_id INT,
  support_structure_id VARCHAR(10),
  PRIMARY KEY (support_structure_group_id, support_structure_id));

--# Create a junction table for support powers
CREATE TABLE support_powers_group_junction (
  support_powers_group_id INT,
  support_power_id VARCHAR(10),
  PRIMARY KEY (support_powers_group_id, support_power_id));

--# Create a junction table for infantry units
CREATE TABLE infantry_group_junction (
  infantry_group_id INT,
  infantry_id VARCHAR(10),
  PRIMARY KEY (infantry_group_id, infantry_id));

--# Create a junction table for vehicle units
CREATE TABLE vehicle_group_junction (
  vehicle_group_id INT,
  vehicle_id VARCHAR(10),
  PRIMARY KEY (vehicle_group_id, vehicle_id));

--# Create a junction table for aircraft units
CREATE TABLE aircraft_group_junction (
  aircraft_group_id INT,
  aircraft_id VARCHAR(10),
  PRIMARY KEY (aircraft_group_id, aircraft_id));

--# Create a junction table for naval units
CREATE TABLE naval_group_junction (
  naval_group_id INT,
  naval_unit_id VARCHAR(10),
  PRIMARY KEY (naval_group_id, naval_unit_id));
```

### Task 3: Add constraints and foreign keys

---

Alter tables and add foreign keys and constraints

```
--# adding constraints and foreign keys to all junction tables

--# add foreign key from factions to countries
ALTER TABLE countries
ADD CONSTRAINT fk_countries_faction_id
FOREIGN KEY (faction_id) REFERENCES factions (faction_id);

--# add to building_group_junction
ALTER TABLE building_group_junction
ADD CONSTRAINT fk_building_group_junction_building_group_id
FOREIGN KEY (building_group_id) REFERENCES building_group (building_group_id),
ADD CONSTRAINT fk_building_group_junction_building_id
FOREIGN KEY (building_id) REFERENCES main_buildings (building_id);

--# add to support_structure_group_junction
ALTER TABLE support_structure_group_junction
ADD CONSTRAINT fk_support_structure_group_junction_support_structure_group_id
FOREIGN KEY (support_structure_group_id) REFERENCES support_structure_group (support_structure_group_id),
ADD CONSTRAINT fk_support_structure_group_junction_support_structure_id
FOREIGN KEY (support_structure_id) REFERENCES support_structures (support_structure_id);

--# add to support_powers_group_junction
ALTER TABLE support_powers_group_junction
ADD CONSTRAINT fk_support_powers_group_junction_support_powers_group_id
FOREIGN KEY (support_powers_group_id) REFERENCES support_powers_group (support_powers_group_id),
ADD CONSTRAINT fk_support_powers_group_junction_support_power_id
FOREIGN KEY (support_power_id) REFERENCES support_powers (support_power_id);

--# add to infantry_group_junction
ALTER TABLE infantry_group_junction
ADD CONSTRAINT fk_infantry_group_junction_infantry_group_id
FOREIGN KEY (infantry_group_id) REFERENCES infantry_group (infantry_group_id),
ADD CONSTRAINT fk_infantry_group_junction_infantry_id
FOREIGN KEY (infantry_id) REFERENCES infantry_units (infantry_id);

--# add to vehicle_group_junction
ALTER TABLE vehicle_group_junction
ADD CONSTRAINT fk_vehicle_group_junction_vehicle_group_id
FOREIGN KEY (vehicle_group_id) REFERENCES vehicle_group (vehicle_group_id),
ADD CONSTRAINT fk_vehicle_group_junction_vehicle_id
FOREIGN KEY (vehicle_id) REFERENCES vehicle_units (vehicle_id);
```

```
--# add to aircraft_group_junction
ALTER TABLE aircraft_group_junction
ADD CONSTRAINT fk_aircraft_group_junction_aircraft_group_id
FOREIGN KEY (aircraft_group_id) REFERENCES aircraft_group (aircraft_group_id),
ADD CONSTRAINT fk_aircraft_group_junction_aircraft_id
FOREIGN KEY (aircraft_id) REFERENCES aircraft_units (aircraft_id);

--# add to naval_group_junction
ALTER TABLE naval_group_junction
ADD CONSTRAINT fk_naval_group_junction_naval_group_id
FOREIGN KEY (naval_group_id) REFERENCES naval_group (naval_group_id),
ADD CONSTRAINT fk_naval_group_junction_naval_unit_id
FOREIGN KEY (naval_unit_id) REFERENCES naval_units (naval_unit_id);

--# add to country_tech
ALTER TABLE country_tech
ADD CONSTRAINT fk_country_tech_building_group_id
FOREIGN KEY (building_group_id) REFERENCES building_group (building_group_id),
ADD CONSTRAINT fk_country_tech_support_structure_group_id
FOREIGN KEY (support_structure_group_id) REFERENCES support_structure_group (support_structure_group_id),
ADD CONSTRAINT fk_country_tech_support_powers_group_id
FOREIGN KEY (support_powers_group_id) REFERENCES support_powers_group (support_powers_group_id),
ADD CONSTRAINT fk_country_tech_infantry_group_id
FOREIGN KEY (infantry_group_id) REFERENCES infantry_group (infantry_group_id),
ADD CONSTRAINT fk_country_tech_vehicle_group_id
FOREIGN KEY (vehicle_group_id) REFERENCES vehicle_group (vehicle_group_id),
ADD CONSTRAINT fk_country_tech_aircraft_group_id
FOREIGN KEY (aircraft_group_id) REFERENCES aircraft_group (aircraft_group_id),
ADD CONSTRAINT fk_country_tech_naval_group_id
FOREIGN KEY (naval_group_id) REFERENCES naval_group (naval_group_id);
```

## Task 4: Insert values into the tables

---

I'll insert values into the List Tables first

```
--# Adding values to List Tables

--#adding values to factions
INSERT INTO factions (faction_name, faction_color, n_country_affiliates, military_description)
VALUES
('Allies','Blue',NULL,'Allies prioritize mobility, technology, quality, training. '),
('Soviet','Red',NULL,'Soviets rely on firepower, numbers, durability, armor. '),
('Yuri','Purple',NULL,'Yuri utilizes mind-control, cloning, advanced weapons. '),
('Neutral','Gray',NULL,'A neutral faction. ');

--#adding values to countries
INSERT INTO countries (faction_id, country_name, special_tech)
VALUES
('FA001','France','French Grand Cannon'),
('FA001','Germany','German Tank Destroyer'),
('FA001','Great Britain','British Sniper'),
('FA001','South Korea','Korean Black Eagle'),
('FA001','USA','American Airbornes'),
('FA002','Cuba','Cuban Terrorist'),
('FA002','Iraq','Iraqi Desolator'),
('FA002','Libya','Libyan Demolishon Truck'),
('FA002','Russia','Russian Tesla Tank'),
('FA003','Yuri','Yuri's Faction'),
('FA004','Neutral','None');
```



```
--#addig values to main_buildings
INSERT INTO main_buildings (building_name, tech_level, hit_points, armor_type,
cost_in_dollars, build_time_in_seconds, power_consumption, can_be_captured, tech_type, role_description)
VALUES
('Construction Yard (Allied)',-1,1000,'Concrete',3000,0,0,'True','faction_common','Base Construction'),
('Power Plant',1,750,'Wood',800,32,200,'True','faction_common','Power Supply'),
('Barracks (Allied)',2,500,'Steel',500,20,-10,'True','faction_common','Infantry Training Facility'),
('War Factory (Allied)',2,1000,'Wood',2000,80,-25,'True','faction_common','Vehicle Production'),
('Ore Refinery (Allied)',1,1000,'Wood',2000,80,-50,'True','faction_common','Resource Processor'),
('Airforce Command HQ',3,600,'Steel',1000,40,-50,'True','faction_common','Radar Provider. Aircraft Production and Maintenance'),
('Naval Shipyard (Allied)',4,1500,'Concrete',1000,40,-25,'False','faction_common','Naval Units Production and Maintenance'),
('Service Depot (Allied)',6,1200,'Wood',800,32,-25,'True','faction_common','Vehicle Maintenance'),
('Battle Lab (Allied)',8,500,'Wood',2000,80,-100,'True','faction_common','Tech Structure'),
('Ore Purifier',10,900,'Wood',2500,100,-200,'False','faction_common','Resource Enhancement. Increase resource income by 25%'),
('Robot Control Center',10,600,'Wood',600,24,-100,'False','faction_common','Robot Tank Control Center'),
('Construction Yard (Soviet)',-1,1000,'Concrete',3000,0,0,'True','faction_common','Base Construction'),
('Tesla Reactor',1,750,'Wood',600,24,150,'True','faction_common','Power Supply'),
('Barracks (Soviet)',2,500,'Steel',500,20,-10,'True','faction_common','Infantry Training Facility'),
('War Factory (Soviet)',2,1000,'Wood',2000,80,-25,'True','faction_common','Vehicle Production'),
('Ore Refinery (Soviet)',1,1000,'Wood',2000,80,-50,'True','faction_common','Resource Processor'),
('Radar Tower',3,1000,'Wood',1000,40,-50,'True','faction_common','Radar Provider. Activate Spy Plane Power Support'),
('Naval Shipyard (Soviet)',4,1500,'Concrete',1000,40,-20,'False','faction_common','Naval Units Production and Maintenance'),
('Service Depot (Soviet)',6,1200,'Wood',800,32,-20,'True','faction_common','Vehicle Maintenance'),
('Battle Lab (Soviet)',7,500,'Wood',2000,80,-100,'True','faction_common','Tech Structure'),
('Nuclear Reactor',9,1000,'Concrete',1000,60,2000,'True','faction_common','Advance Power Supply'),
('Industrial Plant',10,1000,'Wood',2500,100,-200,'False','faction_common','Production Efficiency.
Decrease price and build-time of vehicles, aircraft and navy units by 25%'),
('Construction Yard (Yuri)',-1,1000,'Concrete',3000,0,0,'True','faction_common','Base Construction'),
('Bio Reactor',1,700,'Wood',600,24,150,'True','faction_common','Power Supply. Increase power by 100 per unit (5 max units).'),
('Barracks (Yuri)',2,500,'Steel',500,20,-10,'True','faction_common','Infantry Training Facility'),
('War Factory (Yuri)',2,1000,'Wood',2000,80,-25,'True','faction_common','Vehicle Production'),
('Psychic Radar',2,750,'Wood',1000,40,-50,'True','faction_common','Radar Provider. Activate Psychic Power Support. Detect stealth and enemy attack'),
('Submarine Pen',4,1500,'Concrete',1000,40,-25,'False','faction_common','Naval Units Production and Maintenance'),
('Battle Lab (Yuri)',8,500,'Wood',2000,80,-100,'True','faction_common','Tech Structure'),
('Grinder',9,900,'Wood',600,24,0,'False','faction_common','Convert units into funds. 50% for enemy units, 100% for enemy vehicle and own units');

--# adding values to support_structures
INSERT INTO support_structures (support_structure_name,tech_level,hit_points,armor_type,
cost_in_dollars,build_time_in_seconds,can_ground_attack,can_air_attack,power_consumption,tech_type,role_description)
VALUES
('Fortress Wall (Allied)',1,300,'Concrete',100,4,FALSE,FALSE,0,'faction_common','defensive barrier'),
('Pillbox',1,400,'Steel',500,20,TRUE,FALSE,0,'faction_common','anti-infantry base defense'),
('Patriot Missile System',4,900,'Steel',1000,40,FALSE,TRUE,-50,'faction_common','anti-air base defense'),
('Prism Tower',6,600,'Steel',1500,60,TRUE,FALSE,-75,'faction_common','anti-surface base defense. 200 if there is a support tower nearby'),
('Gap Generator',7,600,'Wood',1000,40,FALSE,FALSE,-100,'faction_common','Radar jamming device'),
('Spy Satellite Uplink',9,1000,'Wood',1500,60,FALSE,FALSE,-100,'faction_common','Intelligence gathering'),
('Grand Cannon',7,900,'Steel',2000,80,TRUE,FALSE,-100,'special_tech','advance anti surface base defense. Cannot attack closed enemies'),
('Weather Control Device',10,1000,'Concrete',5000,200,FALSE,FALSE,-200,'superweapon',
'Superweapon. Activate Lightning Storm Support Power. 10 min cooldown'),
('Chronosphere',10,750,'Concrete',2500,100,FALSE,FALSE,-200,'superweapon','Support Superweapon. Activate Chronoshift Support Power. 5 min cooldown'),
('Fortress Wall (Soviet)',1,300,'Concrete',100,4,FALSE,FALSE,0,'faction_common','defensive barrier'),
('Bunker',1,600,'Steel',500,20,FALSE,FALSE,0,'faction_common','infantry bunker. 5 units max'),
('Sentry Gun',1,400,'Steel',500,20,TRUE,FALSE,0,'faction_common','anti-infantry base defense'),
('Flak Cannon',4,900,'Steel',1000,40,FALSE,TRUE,-50,'faction_common','anti-air base defense. Has a cluster damage effect'),
('Tesla Coil',5,600,'Steel',1500,60,TRUE,FALSE,-75,'faction_common','advance anti surface base defense. 300 attack points and 100 range attack if charged up.'),
('Nuclear Missile Silo',10,1000,'Concrete',5000,200,FALSE,FALSE,-200,'superweapon','Superweapon. Activate Nuke Attack Support Power. 10 min cooldown'),
('Iron Curtain Device',10,750,'Concrete',2500,100,FALSE,FALSE,-200,'superweapon','Support Superweapon. Activate Invulnerability Support Power. 5 min cooldown'),
('Citadel Wall',1,300,'Concrete',100,4,FALSE,FALSE,0,'faction_common','defensive barrier'),
('Tank Bunker',3,1000,'Steel',400,16,FALSE,FALSE,0,'faction_common','Increases tank's ability by +2 weapon range, 30% rate of fire, 30% firepower'),
('Gatling Cannon',4,810,'Steel',1000,40,TRUE,TRUE,-50,'faction_common','Anti-air, anti-ground base defense. 25/30/40 air attack, 16/8/4 cooldown'),
('Psychic Tower',7,455,'Steel',1500,60,FALSE,FALSE,-100,'faction_common','control enemy units maximum of 3'),
('Cloning Vats',9,1000,'Wood',2500,100,FALSE,FALSE,-200,'faction_common','clone infantry units for free'),
('Psychic Dominator',10,1000,'Concrete',5000,200,FALSE,FALSE,-200,'superweapon','Superweapon. Activate Dominate Support Power. 10 min cooldown'),
('Genetic Mutator',10,1000,'Concrete',2500,100,FALSE,FALSE,-200,'superweapon','Support Superweapon. Activate Mutate Support Power. 5 min cooldown'),
('Tech Hospital',-1,800,'Concrete',0,0,FALSE,FALSE,0,'neutral','All infantry units will auto-heal'),
('Tech Air Field',-1,800,'Concrete',0,0,FALSE,FALSE,0,'neutral','Activate Paratroopers Support Power'),
('Tech Outpost',-1,2000,'Concrete',0,0,TRUE,TRUE,0,'neutral','Remote vehicle maintenance outpost'),
('Tech Machine Shop',-1,800,'Concrete',0,0,FALSE,FALSE,0,'neutral','All vehicle units will auto-heal'),
('Tech Secret Lab',-1,1000,'Steel',0,0,FALSE,FALSE,0,'neutral','Acquire a random special tech ability'),
('Tech Civilian Power Plant',-1,800,'Concrete',0,0,FALSE,FALSE,200,'neutral','Increase Power Supply'),
('Tech Oil Derrick',-1,1000,'Steel',0,0,FALSE,FALSE,0,'neutral','$1000 for capture, $20 per 100frames');
```

```

--# adding values to support_powers
INSERT INTO support_powers (support_power_name,tech_type)
VALUES
('Airborne','special_tech'),
('Chrono Shift','superweapon'),
('Lightning Storm','superweapon'),
('Spy Plane','faction_common'),
('Nuclear Missile Strike','superweapon'),
('Invulnerability','superweapon'),
('Psychic Reveal','faction_common'),
('Mutate','superweapon'),
('Dominate','superweapon'),
('Force Shield','neutral'),
('Paratroopers','neutral');

--# adding values to infantry_units
INSERT INTO infantry_units (infantry_name, tech_level, hit_points,
is_unit_amphibious, cost_in_dollars, build_time_in_seconds, can_ground_attack, can_air_attack, tech_type)
VALUES
('G.I.',1,125,False,200,8,True,False,'faction_common'),
('Guardian G.I.',2,100,False,400,16,True,True,'faction_common'),
('Attack Dog (Allied)',2,100,False,200,8,True,False,'faction_common'),
('Engineer',1,75,False,500,20,False,False,'faction_common'),
('Rocketeer',3,125,True,600,24,True,True,'faction_common'),
('Seal',9,125,True,1000,40,True,False,'faction_common'),
('Spy',5,100,False,1000,40,False,False,'faction_common'),
('Tanya',9,200,True,1500,60,True,False,'faction_common'),
('Chrono Legionnaire',10,125,False,1500,60,True,False,'faction_common'),
('Chrono Commando',9,100,False,2000,60,True,False,'stolen_tech'),
('Chrono Ivan',9,100,False,1750,60,True,False,'stolen_tech'),
('Psi Commando',9,100,False,1000,60,True,False,'stolen_tech'),
('British Sniper',2,125,False,600,24,True,False,'special_tech'),
('Conscript',1,125,False,100,4,True,False,'faction_common'),
('Flak Trooper',1,100,False,300,12,True,True,'faction_common'),
('Attack Dog (Soviet)',2,100,False,200,8,True,False,'faction_common'),
('Tesla Trooper',5,130,False,500,20,True,False,'faction_common'),
('Crazy Ivan',5,125,False,600,24,True,False,'faction_common'),
('Boris',9,200,False,1500,60,True,False,'faction_common'),
('Cuban Terrorist',5,75,False,200,8,True,False,'special_tech'),
('Iraqi Desolator',8,150,False,600,24,True,False,'special_tech'),
('Initiate',1,100,False,200,8,True,False,'faction_common'),
('Brute',5,200,False,500,20,True,False,'faction_common'),
('Virus',1,100,False,700,28,True,False,'faction_common'),
('Yuri Clone',10,100,False,800,32,True,False,'faction_common'),
('Yuri Prime',10,150,True,1500,60,True,False,'faction_common'),
('Slaves',-1,125,False,0,0,True,False,'faction_common');

```

```
--# adding values to vehicle_units
INSERT INTO vehicle_units (vehicle_name,tech_level,hit_points,
is_unit_amphibious,cost_in_dollars,build_time_in_seconds,can_ground_attack,can_air_attack,tech_type)
VALUES
('Chrono Miner',1,1000,False,1400,56,False,False,'faction_common'),
('Grizzly Tank',1,300,False,700,42,True,False,'faction_common'),
('Infantry Fighting Vehicle',3,200,False,600,24,True,True,'faction_common'),
('Prism Tank',8,150,False,1200,48,True,False,'faction_common'),
('Mirage Tank',9,200,False,1000,40,True,False,'faction_common'),
('Battle Fortress',10,600,False,2000,80,True,False,'faction_common'),
('Allied MCV',10,1000,False,3000,120,False,False,'faction_common'),
('Robot Tank',2,180,True,600,24,True,False,'faction_common'),
('Tank Destroyer',2,400,False,900,36,True,False,'special_tech'),
('War Miner',1,1000,False,1400,56,True,False,'faction_common'),
('Rhino Tank',2,400,False,900,45,True,False,'faction_common'),
('Terror Drone',4,100,False,500,20,True,False,'faction_common'),
('Flak Track',3,180,False,500,20,True,True,'faction_common'),
('V3 Rocket Launcher',3,150,False,800,32,True,False,'faction_common'),
('Apocalypse',7,800,False,1750,70,True,True,'faction_common'),
('Soviet MCV',10,1000,False,3000,120,False,False,'faction_common'),
('Libyan Demolition Truck',10,150,False,1500,60,True,False,'special_tech'),
('Russian Tesla Tank',10,300,False,1200,48,True,False,'special_tech'),
('Lasher Tank',2,300,False,700,28,True,False,'faction_common'),
('Chaos Drone',4,130,False,800,40,True,False,'faction_common'),
('Gatling Tank',4,210,False,600,24,True,True,'faction_common'),
('Slave Miner',1,2000,False,1750,70,True,False,'faction_common'),
('Magnetron',2,150,False,1000,40,True,False,'faction_common'),
('Mastermind',2,500,False,1750,70,True,False,'faction_common'),
('Yuri MCV',10,1000,False,3000,120,False,False,'faction_common');

--# adding values to aircraft_units
INSERT INTO aircraft_units (aircraft_name,tech_level,hit_points,
is_unit_amphibious, cost_in_dollars ,build_time_in_seconds,can_ground_attack,can_air_attack,tech_type)
VALUES
('Harrier',3,150,TRUE,1200,48,TRUE,FALSE,'faction_common'),
('Night Hawk Transport ',7,175,TRUE,1000,40,TRUE,TRUE,'faction_common'),
('Black Eagle',3,200,TRUE,1200,48,TRUE,FALSE,'special_tech'),
('Airborne Plane (USA)',-1,100,FALSE,0,240,FALSE,FALSE,'special_tech'),
('Spy Plane',2,600,FALSE,0,240,FALSE,FALSE,'faction_common'),
('Seige Chopper',7,300,FALSE,1400,44,TRUE,TRUE,'faction_common'),
('Kirov Airship',10,2000,TRUE,2000,80,TRUE,FALSE,'faction_common'),
('Boris MiGs',-1,200,FALSE,0,0,TRUE,FALSE,'faction_common'),
('Floating Disc',2,600,TRUE,1750,70,TRUE,TRUE,'faction_common'),
('Transport Plane',-1,100,FALSE,0,240,FALSE,FALSE,'neutral');

--# adding values to naval_units
INSERT INTO naval_units (naval_unit_name,tech_level,hit_points,
is_unit_amphibious,cost_in_dollars,build_time_in_seconds,can_ground_attack,can_air_attack,tech_type)
VALUES
('Dolphin',8,200,False,500,20,True,False,'faction_common'),
('Destroyer',4,600,False,1000,40,True,False,'faction_common'),
('Amphibious Transport (Allied)',4,300,True,900,36,False,False,'faction_common'),
('Aegis Cruiser',7,800,False,1200,48,False,True,'faction_common'),
('Aircraft Carrier',7,800,False,2000,80,True,False,'faction_common'),
('Giant Squid',9,200,False,1000,40,True,False,'faction_common'),
('Attack Submarine',2,600,False,1000,40,True,False,'faction_common'),
('Amphibious Transport (Soviet)',2,300,True,900,36,False,False,'faction_common'),
('Sea Scorpion',6,400,False,600,24,True,True,'faction_common'),
('Dreadnought',6,800,False,2000,80,True,False,'faction_common'),
('Boomer Submarine',2,1200,False,2000,80,True,False,'faction_common'),
('Amphibious Transport (Yuri)',2,300,True,900,36,False,False,'faction_common');
```

## Inserting Values to the Group Tables

```
--# adding values to the Group Tables

--# adding values to building_group
INSERT INTO building_group (building_group_name)
VALUES
('Allies'),
('Soviet'),
('Yuri');

--# adding values to support_structure_group
INSERT INTO support_structure_group (support_structure_group_name)
VALUES
('Allies French Group'),
('Allies'),
('Soviet'),
('Yuri');

--# adding values to support_powers_group
INSERT INTO support_powers_group (support_powers_group_name)
VALUES
('Allies American Group'),
('Allies'),
('Soviet'),
('Yuri');

--# adding values to infantry_group
INSERT INTO infantry_group (infantry_group_name)
VALUES
('Allies British Group'),
('Allies'),
('Soviet Cuban Group'),
('Soviet Iraqi Group'),
('Soviet'),
('Yuri');

--# adding values to vehicle_group
INSERT INTO vehicle_group (vehicle_group_name)
VALUES
('Allies German Group'),
('Allies'),
('Soviet Libyan Group'),
('Soviet Russian Group'),
('Soviet'),
('Yuri');

--# adding values to aircraft_group
INSERT INTO aircraft_group (aircraft_group_name)
VALUES
('Allies South Korean Group'),
('Allies American Group'),
('Allies'),
('Soviet'),
('Yuri');

--# adding values to naval_group
INSERT INTO naval_group (naval_group_name)
VALUES
('Allies'),
('Soviet'),
('Yuri');
```

## Insert values to the Junction Tables

```
--# adding values to junction tables

--# adding to building_group_junction
INSERT INTO building_group_junction (building_group_id,building_id)
VALUES
(1,'BUID001'),(1,'BUID002'),(1,'BUID003'),(1,'BUID004'),(1,'BUID005'),
(1,'BUID006'),(1,'BUID007'),(1,'BUID008'),(1,'BUID009'),(1,'BUID010'),
(1,'BUID011'),(2,'BUID012'),(2,'BUID013'),(2,'BUID014'),(2,'BUID015'),
(2,'BUID016'),(2,'BUID017'),(2,'BUID018'),(2,'BUID019'),(2,'BUID020'),
(2,'BUID021'),(2,'BUID022'),(3,'BUID023'),(3,'BUID024'),(3,'BUID025'),
(3,'BUID026'),(3,'BUID027'),(3,'BUID028'),(3,'BUID029'),(3,'BUID030');

--# adding to support_structure_group_junction
INSERT INTO support_structure_group_junction (support_structure_group_id,support_structure_id)
VALUES
(1,'SID001'),(1,'SID002'),(1,'SID003'),(1,'SID004'),(1,'SID005'),
(1,'SID006'),(1,'SID007'),(1,'SID008'),(1,'SID009'),(2,'SID001'),
(2,'SID002'),(2,'SID003'),(2,'SID004'),(2,'SID005'),(2,'SID006'),
(2,'SID008'),(2,'SID009'),(3,'SID010'),(3,'SID011'),(3,'SID012'),
(3,'SID013'),(3,'SID014'),(3,'SID015'),(3,'SID016'),(4,'SID017'),
(4,'SID018'),(4,'SID019'),(4,'SID020'),(4,'SID021'),(4,'SID022'),
(4,'SID023');

--# adding to support_powers_group_junction
INSERT INTO support_powers_group_junction (support_powers_group_id,support_power_id)
VALUES
(1,'SPID001'),(1,'SPID002'),(1,'SPID003'),(1,'SPID010'),
(2,'SPID002'),(2,'SPID003'),(2,'SPID010'),(3,'SPID004'),
(3,'SPID005'),(3,'SPID006'),(3,'SPID010'),(4,'SPID007'),
(4,'SPID008'),(4,'SPID009'),(4,'SPID010');

--# adding to infantry_group_junction
INSERT INTO infantry_group_junction (infantry_group_id,infantry_id)
VALUES
(1,'IFID001'),(1,'IFID002'),(1,'IFID003'),(1,'IFID004'),(1,'IFID005'),
(1,'IFID006'),(1,'IFID007'),(1,'IFID008'),(1,'IFID009'),(1,'IFID010'),
(1,'IFID011'),(1,'IFID012'),(1,'IFID013'),(2,'IFID001'),(2,'IFID002'),
(2,'IFID003'),(2,'IFID004'),(2,'IFID005'),(2,'IFID006'),(2,'IFID007'),
(2,'IFID008'),(2,'IFID009'),(2,'IFID010'),(2,'IFID011'),(2,'IFID012'),
(3,'IFID014'),(3,'IFID015'),(3,'IFID016'),(3,'IFID017'),(3,'IFID018'),
(3,'IFID019'),(3,'IFID004'),(3,'IFID020'),(4,'IFID014'),(4,'IFID015'),
(4,'IFID016'),(4,'IFID017'),(4,'IFID018'),(4,'IFID019'),(4,'IFID004'),
(4,'IFID021'),(5,'IFID014'),(5,'IFID015'),(5,'IFID016'),(5,'IFID017'),
(5,'IFID018'),(5,'IFID019'),(5,'IFID004'),(6,'IFID022'),(6,'IFID023'),
(6,'IFID024'),(6,'IFID025'),(6,'IFID026'),(6,'IFID027'),(6,'IFID004');

--# adding to vehicle_group_junction
INSERT INTO vehicle_group_junction (vehicle_group_id,vehicle_id)
VALUES
(1,'VEID001'),(1,'VEID002'),(1,'VEID003'),(1,'VEID004'),(1,'VEID005'),
(1,'VEID006'),(1,'VEID007'),(1,'VEID008'),(1,'VEID009'),(2,'VEID001'),
(2,'VEID002'),(2,'VEID003'),(2,'VEID004'),(2,'VEID005'),(2,'VEID006'),
(2,'VEID007'),(2,'VEID008'),(3,'VEID010'),(3,'VEID011'),(3,'VEID012'),
(3,'VEID013'),(3,'VEID014'),(3,'VEID015'),(3,'VEID016'),(3,'VEID017'),
(4,'VEID010'),(4,'VEID011'),(4,'VEID012'),(4,'VEID013'),(4,'VEID014'),
(4,'VEID015'),(4,'VEID016'),(4,'VEID018'),(5,'VEID010'),(5,'VEID011'),
(5,'VEID012'),(5,'VEID013'),(5,'VEID014'),(5,'VEID015'),(5,'VEID016'),
(6,'VEID019'),(6,'VEID020'),(6,'VEID021'),(6,'VEID022'),(6,'VEID023'),
(6,'VEID024'),(6,'VEID025');
```

```

--# adding values to aircraft_group_junction
INSERT INTO aircraft_group_junction (aircraft_group_id,aircraft_id)
VALUES
(1,'AID001'),(1,'AID002'),(1,'AID003'),(2,'AID001'),
(2,'AID002'),(2,'AID004'),(3,'AID001'),(3,'AID002'),
(4,'AID005'),(4,'AID006'),(4,'AID007'),(4,'AID008'),
(5,'AID009');

--# adding values to naval_group_junction
INSERT INTO naval_group_junction (naval_group_id,naval_unit_id)
VALUES
(1,'NUID001'),(1,'NUID002'),(1,'NUID003'),(1,'NUID004'),
(1,'NUID005'),(2,'NUID006'),(2,'NUID007'),(2,'NUID008'),
(2,'NUID009'),(2,'NUID010'),(3,'NUID011'),(3,'NUID012');

--#a adding values to country_tech
INSERT INTO country_tech (country_id,building_group_id,
support_structure_group_id,support_powers_group_id,
infantry_group_id,vehicle_group_id,aircraft_group_id,naval_group_id)
VALUES
('COID001',1,1,2,2,2,3,1),
('COID002',1,2,2,2,1,3,1),
('COID003',1,2,2,1,2,3,1),
('COID004',1,2,2,2,2,1,1),
('COID005',1,2,1,2,2,2,1),
('COID006',2,3,3,3,5,4,2),
('COID007',2,3,3,4,5,4,2),
('COID008',2,3,3,5,3,4,2),
('COID009',2,3,3,5,4,4,2),
('COID010',3,4,4,6,6,5,3);

```



## Task 5: Create some query codes for testing

---

Query all Infantry Units of France ( Spy not stolen other faction technologies)

```
-- Query all of France Infantry where Spy has not stolen other faction technologies
```

```
SELECT country_name AS country, infantry_name AS infantry
FROM countries AS c
INNER JOIN country_tech AS ct
    ON c.country_id = ct.country_id
INNER JOIN infantry_group AS ig
    ON ct.infantry_group_id = ig.infantry_group_id
INNER JOIN infantry_group_junction AS igj
    ON ig.infantry_group_id = igj.infantry_group_id
INNER JOIN infantry_units AS i
    ON igj.infantry_id = i.infantry_id
WHERE country_name = 'France'
    AND tech_type = 'faction_common';
```

Query Result:

	country character varying (255) 🔒	infantry character varying (255) 🔒
1	France	G.I.
2	France	Guardian G.I
3	France	Attack Dog (Allied)
4	France	Engineer
5	France	Rocketeer
6	France	Seal
7	France	Spy
8	France	Tanya
9	France	Chrono Legionnaire

## Query all Yuri's Vehicle units and Naval Units

```
-- Query all of Yuri's Vehicle units and Naval units

-- Query all Yuri's vehicle unit
WITH yuri_vehicle AS (SELECT c.country_name AS faction, vehicle_name AS vehicles, 'VEHICLE' AS unit_type
FROM countries AS c
INNER JOIN country_tech AS ct
    ON c.country_id = ct.country_id
INNER JOIN vehicle_group AS vg
    ON ct.vehicle_group_id = vg.vehicle_group_id
INNER JOIN vehicle_group_junction AS vgj
    ON vg.vehicle_group_id = vgj.vehicle_group_id
INNER JOIN vehicle_units AS v
    ON vgj.vehicle_id = v.vehicle_id
WHERE country_name = 'Yuri'
),

-- Query all Yuri's naval unit
yuri_naval AS (SELECT c.country_name AS faction, naval_unit_name AS naval_units, 'NAVAL' AS unit_type
FROM countries AS c
INNER JOIN country_tech AS ct
    ON c.country_id = ct.country_id
INNER JOIN naval_group AS ng
    ON ct.naval_group_id = ng.naval_group_id
INNER JOIN naval_group_junction AS ngj
    ON ng.naval_group_id = ngj.naval_group_id
INNER JOIN naval_units AS n
    ON ngj.naval_unit_id = n.naval_unit_id
WHERE country_name = 'Yuri')

-- Union All Yuri's units
SELECT faction, vehicles, unit_type
FROM yuri_vehicle
UNION ALL
SELECT faction, naval_units, unit_type
FROM yuri_naval;
```

## Query Result:

	<b>faction</b> character varying (255) 🔒	<b>vehicles</b> character varying (255) 🔒	<b>unit_type</b> text 🔒
1	Yuri	Lasher Tank	VEHICLE
2	Yuri	Chaos Drone	VEHICLE
3	Yuri	Gattling Tank	VEHICLE
4	Yuri	Slave Miner	VEHICLE
5	Yuri	Magnetron	VEHICLE
6	Yuri	Mastermind	VEHICLE
7	Yuri	Yuri MCV	VEHICLE
8	Yuri	Boomer Submarine	NAVAL
9	Yuri	Amphibious Transport (Yuri)	NAVAL



Query the support powers of Soviet and Allies American Group

--Query the support powers of Soviet and Allies American Group

```
SELECT s.support_powers_group_name AS Group, support_power_name AS support_power
FROM support_powers_group AS s
INNER JOIN support_powers_group_junction AS sj
    ON s.support_powers_group_id = sj.support_powers_group_id
INNER JOIN support_powers AS sp
    ON sj.support_power_id = sp.support_power_id
WHERE s.support_powers_group_name IN ('Allies American Group', 'Soviet')
```

Query Result:

	group character varying (255) 🔒	support_power character varying (255) 🔒
1	Allies American Group	Airborne
2	Allies American Group	Chrono Shift
3	Allies American Group	Lightning Storm
4	Allies American Group	Force Shield
5	Soviet	Spy Plane
6	Soviet	Nuclear Missile Strike
7	Soviet	Invulnerability
8	Soviet	Force Shield