**Task 1: POSTGRES Commands**

**Step 1: Database creation**

CREATE DATABASE ais\_database.

**Step 2: Created a user called myuser and assigned password.**

CREATE USER myuser WITH ENCRYPTED PASSWORD 'mypassword’;

**Step 3: Grant privileges for the database and its user**

GRANT ALL PRIVILEGES ON DATABASE ais\_database TO myuser;

**Step 4: Create Schema**

|  |
| --- |
| CREATE TABLE "ais\_data" (  "MMSI" BIGINT,  "BaseDateTime" TIMESTAMP,  "LAT" FLOAT,  "LON" FLOAT,  "SOG" FLOAT, -- Speed Over Ground  "COG" FLOAT, -- Course Over Ground  "Heading" FLOAT,  "VesselName" VARCHAR(255),  "IMO" VARCHAR(255),  "CallSign" VARCHAR(255),  "VesselType" INT,  "Status" INT,  "Length" FLOAT,  "Width" FLOAT,  "Draft" FLOAT,  "Cargo" INT,  "TransceiverClass" CHAR(1)  ); |

Note:

Purposefully created length and width as float although they are int. Considering they can be float too.

**Step 5: Adding the data from csv to database table**

|  |
| --- |
| postgres=# \copy ais\_data FROM '/data/postgres\_data/AIS\_2020\_01\_01.csv' DELIMITER ',' CSV HEADER; |

COPY 7040389

|  |
| --- |
| \copy ais\_data FROM '/data/postgres\_data/AIS\_2020\_01\_02.csv' DELIMITER ',' CSV HEADER; |

COPY 6981827

**Step 6: Counting if data is added to table.**

|  |
| --- |
| SELECT COUNT(\*) FROM ais\_data;  count  ----------  14022216  (1 row) |

**Step 7: Create Table to port co-ordinates.**

|  |
| --- |
| **CREATE TABLE port\_coordinates (**  **"OID\_" FLOAT,**  **"World Port Index Number" FLOAT,**  **"Region Name" TEXT,**  **"Main Port Name" TEXT,**  **"Alternate Port Name" TEXT,**  **"UN/LOCODE" TEXT,**  **"Country Code" TEXT,**  **"World Water Body" TEXT,**  **"IHO S-130 Sea Area" TEXT,**  **"Sailing Direction or Publication" TEXT,**  **"Publication Link" TEXT,**  **"Standard Nautical Chart" TEXT,**  **"IHO S-57 Electronic Navigational Chart" TEXT,**  **"IHO S-101 Electronic Navigational Chart" TEXT,**  **"Digital Nautical Chart" TEXT,**  **"Tidal Range (m)" REAL,**  **"Entrance Width (m)" REAL,**  **"Channel Depth (m)" REAL,**  **"Anchorage Depth (m)" REAL,**  **"Cargo Pier Depth (m)" REAL,**  **"Oil Terminal Depth (m)" REAL,**  **"Liquified Natural Gas Terminal Depth (m)" REAL,**  **"Maximum Vessel Length (m)" REAL,**  **"Maximum Vessel Beam (m)" REAL,**  **"Maximum Vessel Draft (m)" REAL,**  **"Offshore Maximum Vessel Length (m)" REAL,**  **"Offshore Maximum Vessel Beam (m)" REAL,**  **"Offshore Maximum Vessel Draft (m)" REAL,**  **"Harbor Size" TEXT,**  **"Harbor Type" TEXT,**  **"Harbor Use" TEXT,**  **"Shelter Afforded" TEXT,**  **"Entrance Restriction - Tide" TEXT,**  **"Entrance Restriction - Heavy Swell" TEXT,**  **"Entrance Restriction - Ice" TEXT,**  **"Entrance Restriction - Other" TEXT,**  **"Overhead Limits" TEXT,**  **"Underkeel Clearance Management System" TEXT,**  **"Good Holding Ground" TEXT,**  **"Turning Area" TEXT,**  **"Port Security" TEXT,**  **"Estimated Time of Arrival Message" TEXT,**  **"Quarantine - Pratique" TEXT,**  **"Quarantine - Sanitation" TEXT,**  **"Quarantine - Other" TEXT,**  **"Traffic Separation Scheme" TEXT,**  **"Vessel Traffic Service" TEXT,**  **"First Port of Entry" TEXT,**  **"US Representative" TEXT,**  **"Pilotage - Compulsory" TEXT,**  **"Pilotage - Available" TEXT,**  **"Pilotage - Local Assistance" TEXT,**  **"Pilotage - Advisable" TEXT,**  **"Tugs - Salvage" TEXT,**  **"Tugs - Assistance" TEXT,**  **"Communications - Telephone" TEXT,**  **"Communications - Telefax" TEXT,**  **"Communications - Radio" TEXT,**  **"Communications - Radiotelephone" TEXT,**  **"Communications - Airport" TEXT,**  **"Communications - Rail" TEXT,**  **"Search and Rescue" TEXT,**  **"NAVAREA" TEXT,**  **"Facilities - Wharves" TEXT,**  **"Facilities - Anchorage" TEXT,**  **"Facilities - Dangerous Cargo Anchorage" TEXT,**  **"Facilities - Med Mooring" TEXT,**  **"Facilities - Beach Mooring" TEXT,**  **"Facilities - Ice Mooring" TEXT,**  **"Facilities - Ro-Ro" TEXT,**  **"Facilities - Solid Bulk" TEXT,**  **"Facilities - Liquid Bulk" TEXT,**  **"Facilities - Container" TEXT,**  **"Facilities - Breakbulk" TEXT,**  **"Facilities - Oil Terminal" TEXT,**  **"Facilities - LNG Terminal" TEXT,**  **"Facilities - Other" TEXT,**  **"Medical Facilities" TEXT,**  **"Garbage Disposal" TEXT,**  **"Chemical Holding Tank Disposal" TEXT,**  **"Degaussing" TEXT,**  **"Dirty Ballast Disposal" TEXT,**  **"Cranes - Fixed" TEXT,**  **"Cranes - Mobile" TEXT,**  **"Cranes - Floating" TEXT,**  **"Cranes Container" TEXT,**  **"Lifts - 100+ Tons" TEXT,**  **"Lifts - 50-100 Tons" TEXT,**  **"Lifts - 25-49 Tons" TEXT,**  **"Lifts - 0-24 Tons" TEXT,**  **"Services - Longshoremen" TEXT,**  **"Services - Electricity" TEXT,**  **"Services - Steam" TEXT,**  **"Services - Navigation Equipment" TEXT,**  **"Services - Electrical Repair" TEXT,**  **"Services - Ice Breaking" TEXT,**  **"Services - Diving" TEXT,**  **"Supplies - Provisions" TEXT,**  **"Supplies - Potable Water" TEXT,**  **"Supplies - Fuel Oil" TEXT,**  **"Supplies - Diesel Oil" TEXT,**  **"Supplies - Aviation Fuel" TEXT,**  **"Supplies - Deck" TEXT,**  **"Supplies - Engine" TEXT,**  **"Repairs" TEXT,**  **"Dry Dock" TEXT,**  **"Railway" TEXT,**  **"Latitude" REAL,**  **"Longitude" REAL**  **);** |

**Step 8: ADD Data from csv**

|  |
| --- |
| \copy port\_coordinates FROM 'data/postgres\_data/updatedpub.csv' DELIMITER ',' CSV HEADER; |

**Step 9: Count the Data**

|  |
| --- |
| SELECT COUNT(\*) FROM port\_coordinates;  count  -------  3802  (1 row) |

**Step 10:Assign permissions to both the data to be used by myuser**

|  |
| --- |
| GRANT SELECT ON TABLE public.ais\_data TO myuser;  GRANT SELECT ON TABLE public.port\_coordinates TO myuser; |