CREATE TABLE Sailors (  
 sid int NOT NULL,  
 sname VARCHAR(20),  
 rating INT,  
 age FLOAT,  
 PRIMARY KEY (sid)  
);  
  
CREATE TABLE Boats (  
 bid INT NOT NULL,  
 bname VARCHAR(30),   
 color VARCHAR(20),  
 PRIMARY KEY(bid)  
);  
  
CREATE TABLE Reserves (  
 sid INT NOT NULL,  
 bid INT NOT NULL,  
 day DATE,  
 FOREIGN KEY (sid) REFERENCES Sailors(sid),  
 FOREIGN KEY (bid) REFERENCES Boats(bid),  
 PRIMARY KEY (sid, bid, day)  
);

-- Generates 1000 Sailor tuples, sailor ids (sid) from 100 to 1099

CREATE OR REPLACE FUNCTION name() RETURNS VARCHAR(20) AS $$

DECLARE

fname integer; --Determines first letter

ranInt integer; --Determines which last name to use

lname varchar(20); --Stores last name

BEGIN

fname := floor(random()\*26) + 97 ; --Generates val 0-25 (inclusive), adds 97

ranInt := floor(random()\*8); --Generates val 0-7 (inclusive)

CASE

WHEN ranInt = 0 THEN lname = 'Blackbeard';

WHEN ranInt = 1 THEN lname = 'Read';

WHEN ranInt = 2 THEN lname = 'Sparrow';

WHEN ranInt = 3 THEN lname = 'Pulcher';

WHEN ranInt = 4 THEN lname = 'Sinbad';

WHEN ranInt = 5 THEN lname = 'Bonny';

WHEN ranInt = 6 THEN lname = 'Ahab';

ELSE lname = 'Jason';

END CASE;

RETURN upper(chr(fname)) || '. ' || lname;

END;

$$ LANGUAGE 'plpgsql';

CREATE OR REPLACE FUNCTION age() RETURNS FLOAT AS $$

DECLARE

ans float;

boole boolean;

BEGIN

ans := floor(random() \* 49) + 16; --generates value between 16 and 64 (inclusive)

boole := random() > 0.5;

IF boole THEN ans = ans + 0.5;

END IF;

RETURN ans;

END;

$$ LANGUAGE 'plpgsql';

INSERT INTO Sailors (sid, sname, rating, age)

SELECT generate\_series(100,1099) as sid,

name() as sname,

ceil(random() \* 10) as rating,

age() as age;

-- Generates 400 Boat tuples, boat ids (bid) from 105 to 504  
  
INSERT INTO boats(bid, bname, color)  
SELECT generate\_series(105, 504) as bid,   
(ARRAY['Voodoo Lady','Lady Bug','Sea Walker','Galax Sea','My Disease','Sheer Joy','Bubba II','Kangaroo','Mischief','Double Dipper','Wary Mary'])[1+random()\*10] as bname,  
(ARRAY['red','blue','green','teal','beige'])[1+random()\*4] as color;

-- Generates 1000 Reserves tuples

INSERT INTO Reserves(sid, bid, day)

SELECT sid, bid, day from (  
 SELECT   
 floor(random()\*1000+100) as sid,  
 floor(random()\*400+105) as bid,  
 (  
 (timestamp '1980-01-10 00:00:00' +  
 random() \* (timestamp '2018-01-10 00:00:00' -  
 timestamp '1980-01-10 00:00:00'))::date   
 ) as day,  
 generate\_series(100, 1099) as \_ ) as \_ ;