

## Assignment3

### Task1

You should show your result in the python console.

Each of these problems has 5 points.

- a) Configure python development environment.
- b) Install psycopg2.
- c) try to connect postgresql in python.
- d) Create a table named "sailors" and insert the following items.

sid	sname varchar(20)	rating integer	age real
22	Dustin	7	45.0
29	Brutus	1	33.0
31	Lubber	8	55.5
32	Andy	8	25.5
64	Horatio	7	35.0
71	Zorba	10	16.0

- e) Set the field *sid* as the primary key and field *sname* with the NOT NULL constraint.
- f) The rating of the non-advanced sailors (rating < 7) has increased by one, please update the table.
- g) Create a table named "Boats" and insert the following items.

bid primary key	bname varchar(20)	color varchar(20)
101	Interlake	Blue
102	Interlake	Red
103	Clipper	Green
104	Marine	Red

h) Create a table named "Reserves" and insert the following items.

sid foreign key	bid foreign key	day DATE
29	101	1973-10-10
29	102	1977-02-03
32	102	1944-07-29
64	101	1948-01-07
71	103	2005-12-17

i) Display the name of sailors who reserve the red boats.

j) Create a b-tree index named idx\_btree\_day for "day" in Reserves table and find out the name of sailors who reserve boats after 1977-01-01.

k) Find out the sailors whose age is over 20 years old and had not reserved any red boats. Display their sids.

l) Show your understanding of the importance of using python or other languages to connect to the database.

## Task 2

Before try to solve the problem you should learn the format specification of

*json* data and how it is used in Postgresql.

Each of these problem have 8 points.

a) Create a database named test

b) Create a table named families\_j and insert a json record:

Table looks like:

id	profile
1	<pre>{ "name": "Gomez", "members": [   { "member": { "relation": "padre", "name": "Alex" } },   { "member": { "relation": "madre", "name": "Sonia" } },   { "member": { "relation": "hijo", "name": "Brandon" } },   { "member": { "relation": "hija", "name": "Azaleah" } } ] }</pre>

c) Display the total number of members and theirs name whose family name is Gomez.

d) Transform the above answer to JSON data and display.

e) Create a table named families\_b and insert the json above mentioned. Display and compare two tables (families\_j and families\_b) .