BUKALAPAK
DATA SCIENTIST TEST

1. Write a MySQL query to pivot the ***Occupation*** column in table **OCCUPATIONS**, so that each ***Name*** is sorted alphabetically and displayed underneath its corresponding ***Occupation***. The output column headers should be Dancer, Photographer, Salesman, and Actress, respectively. **Note:** Print NULL when there are no more names corresponding to an occupation.

Sample Input

Name	***Occupation***
Satria	*Dancer*
Juli	*Actress*
Mario	*Actress*
Memet	*Salesman*
Alan	*Photographer*
Kiky	*Photographer*
Chacha	*Photographer*
Joko	*Actress*
Juni	*Dancer*
Putra	*Salesman*

Sample Output

Dancer	***Photographer***	***Salesman***	***Actress***
Juni	*Alan*	*Memet*	*Joko*
Satria	*Chacha*	*Putra*	*Juli*
NULL	*Kiky*	*NULL*	*Mario*

2. The total score of a hacker is the sum of their maximum scores for all of the challenges. Write a MySQL query to print the hacker_id, name, and total score of the hackers ordered by the descending score. If more than one hacker achieved the same total score, then sort the result by ascending hacker_id. Exclude all hackers with a total score of 0 from your result.

Sample Input
HACKERS Table

hacker_id	*name*
4072	*Rosa*
4807	*Anjani*
26072	*Frodo*
49439	*Palma*
74843	*Lina*
80306	*Kipuw*
84073	*Boni*
87869	*Mita*
92119	*Toni*
95896	*Joko*

SUBMISSIONS Table

submission_id	*hacker_id*	*challenge_id*	*score*
67195	*74843*	*63133*	*76*
64480	*74843*	*19798*	*98*
40743	*26072*	*49594*	*20*
17514	*4807*	*49594*	*32*
69847	*80306*	*19798*	*19*
41003	*26072*	*89344*	*36*
52827	*49439*	*49594*	*9*
31094	*26072*	*19798*	*2*

81615	*84073*	*49594*	*100*
44830	*26072*	*89344*	*17*
75148	*80306*	*49594*	*48*
14116	*4807*	*49594*	*76*
6944	*4072*	*19798*	*95*
12856	*4807*	*25918*	*13*
73344	*80306*	*49594*	*42*
84265	*84073*	*63133*	*0*
9952	*4072*	*49594*	*43*
45105	*49439*	*25918*	*34*
53796	*74843*	*19798*	*5*
26364	*26072*	*19798*	*29*
10064	*4072*	*49594*	*96*

Sample Output

hacker_id	***name***	***totalScore***
4072	*Rosa*	*191*
74843	*Lina*	*174*
84073	*Boni*	*100*
4807	*Anjani*	*89*
26072	*Frodo*	*85*
80306	*Kipuw*	*67*
49439	*Palma*	*43*

3. Write an R-script (or Python) to create multiple linear regression analysis of "mtcars" data (if using R, "mtcars" is available in "datasets" package), then create a model to predict mpg (miles per gallon) using best variable(s) available. Explain the diagnostic tests and make a conclusion about the model! **Note:** Do not split the data into train and test.

	mpg	**cyl**	**disp**	**hp**	**drat**	**wt**	**qsec**	**vs**	**am**	**gear**	**carb**
Mazda RX4	21	6	160	110	3.9	2.62	16.46	0	1	4	4
Mazda RX4 Wag	21	6	160	110	3.9	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.32	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.44	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.46	20.22	1	0	3	1
Duster 360	14.3	8	360	245	3.21	3.57	15.84	0	0	3	4
Merc 240D	24.4	4	146.7	62	3.69	3.19	20	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.15	22.9	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.44	18.3	1	0	4	4
Merc 280C	17.8	6	167.6	123	3.92	3.44	18.9	1	0	4	4
Merc 450SE	16.4	8	275.8	180	3.07	4.07	17.4	0	0	3	3
Merc 450SL	17.3	8	275.8	180	3.07	3.73	17.6	0	0	3	3
Merc 450SLC	15.2	8	275.8	180	3.07	3.78	18	0	0	3	3
Cadillac Fleetwood	10.4	8	472	205	2.93	5.25	17.98	0	0	3	4
Lincoln Continental	10.4	8	460	215	3	5.424	17.82	0	0	3	4
Chrysler Imperial	14.7	8	440	230	3.23	5.345	17.42	0	0	3	4

Fiat 128	32.4	4	78.7	66	4.08	2.2	19.47	1	1	4	1
Honda Civic	30.4	4	75.7	52	4.93	1.615	18.52	1	1	4	2
Toyota Corolla	33.9	4	71.1	65	4.22	1.835	19.9	1	1	4	1
Toyota Corona	21.5	4	120.1	97	3.7	2.465	20.01	1	0	3	1
Dodge Challenger	15.5	8	318	150	2.76	3.52	16.87	0	0	3	2
AMC Javelin	15.2	8	304	150	3.15	3.435	17.3	0	0	3	2
Camaro Z28	13.3	8	350	245	3.73	3.84	15.41	0	0	3	4
Pontiac Firebird	19.2	8	400	175	3.08	3.845	17.05	0	0	3	2
Fiat X1-9	27.3	4	79	66	4.08	1.935	18.9	1	1	4	1
Porsche 914-2	26	4	120.3	91	4.43	2.14	16.7	0	1	5	2
Lotus Europa	30.4	4	95.1	113	3.77	1.513	16.9	1	1	5	2
Ford Pantera L	15.8	8	351	264	4.22	3.17	14.5	0	1	5	4
Ferrari Dino	19.7	6	145	175	3.62	2.77	15.5	0	1	5	6
Maserati Bora	15	8	301	335	3.54	3.57	14.6	0	1	5	8
Volvo 142E	21.4	4	121	109	4.11	2.78	18.6	1	1	4	2

[, 1] mpg Miles/(US) gallon
[, 2] cyl Number of cylinders
[, 3] disp Displacement (cu.in.)
[, 4] hp Gross horsepower
[, 5] drat Rear axle ratio
[, 6] wt Weight (1000 lbs)
[, 7] qsec 1/4 mile time
[, 8] vs V/S
[, 9] am Transmission (0 = automatic, 1 = manual)
[,10] gear Number of forward gears
[,11] carb Number of carburetors