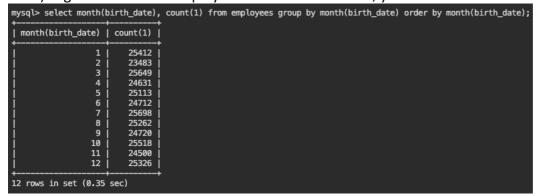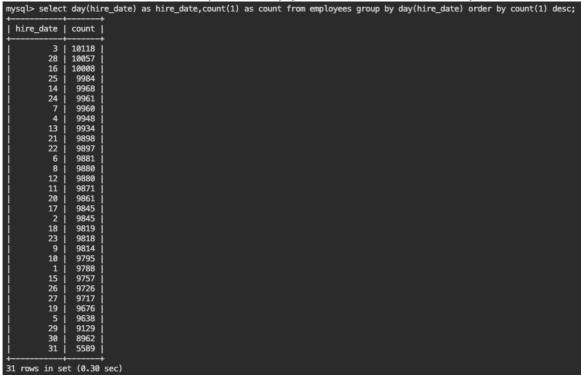Hello Lawrence:

I hope your are doing well. I am pleasure to help with the database questions though I might not able to answer some of them because the limited time. I tried my best to help you answer the questions and here are the answers:

Part 1
1) I get the count of employees born in each month, you can see the screenshot below.

```
mysql> select month(birth_date), count(1) from employees group by month(birth_date) order by month(birth_date);
+-------------------+----------+
| month(birth_date) | count(1) |
+-------------------+----------+
|                 1 |    25412 |
|                 2 |    23483 |
|                 3 |    25649 |
|                 4 |    24631 |
|                 5 |    25113 |
|                 6 |    24712 |
|                 7 |    25698 |
|                 8 |    25262 |
|                 9 |    24720 |
|                10 |    25518 |
|                11 |    24500 |
|                12 |    25326 |
+-------------------+----------+
12 rows in set (0.35 sec)
```
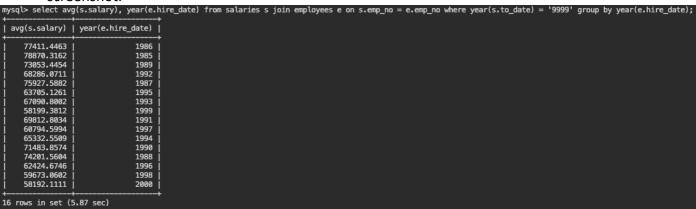
2) The 3rd day of the month on average we hire the most people, which is 10118. I also generated other months' count, hope that help you understand the monthly activities.

```
mysql> select day(hire_date) as hire_date,count(1) as count from employees group by day(hire_date) order by count(1) desc;
+-----------+-------+
| hire_date | count |
+-----------+-------+
|         3 | 10118 |
|        28 | 10057 |
|        16 | 10008 |
|        25 |  9984 |
|        14 |  9968 |
|        24 |  9961 |
|         7 |  9960 |
|         4 |  9948 |
|        13 |  9934 |
|        21 |  9898 |
|        22 |  9897 |
|         6 |  9881 |
|         8 |  9880 |
|        12 |  9880 |
|        11 |  9871 |
|        20 |  9861 |
|        17 |  9845 |
|         2 |  9845 |
|        18 |  9819 |
|        23 |  9818 |
|         9 |  9814 |
|        10 |  9795 |
|         1 |  9788 |
|        15 |  9757 |
|        26 |  9726 |
|        27 |  9717 |
|        19 |  9676 |
|         5 |  9638 |
|        29 |  9129 |
|        30 |  8962 |
|        31 |  5589 |
+-----------+-------+
31 rows in set (0.30 sec)
```

3) The average salary by job title are shown below, people with title Senior Staff have the highest average salary.

```
mysql> select t.title, avg(s.salary) from salaries s join titles t on s.emp_no = t.emp_no group by t.title;
+------------------+---------------+
| title            | avg(s.salary) |
+------------------+---------------+
| Senior Engineer  |    60543.2191 |
| Staff            |    69309.1023 |
| Engineer         |    59508.0397 |
| Senior Staff     |    70470.8353 |
| Assistant Engineer |  59304.9863 |
| Technique Leader |    59294.3742 |
| Manager          |    66924.2706 |
+------------------+---------------+
7 rows in set (16.00 sec)
```

4) The average for all folks that are currently employed by year of hire is also generated below in the screenshot.

```
mysql> select avg(s.salary), year(e.hire_date) from salaries s join employees e on s.emp_no = e.emp_no where year(s.to_date) = '9999' group by year(e.hire_date);
+---------------+-------------------+
| avg(s.salary) | year(e.hire_date) |
+---------------+-------------------+
|    77411.4463 |              1986 |
|    78870.3162 |              1985 |
|    73053.4454 |              1989 |
|    68286.0711 |              1992 |
|    75927.5882 |              1987 |
|    63705.1261 |              1995 |
|    67090.8002 |              1993 |
|    58199.3812 |              1999 |
|    69812.8034 |              1991 |
|    60794.5994 |              1997 |
|    65332.5509 |              1994 |
|    71483.8574 |              1990 |
|    74201.5604 |              1988 |
|    62424.6746 |              1996 |
|    59673.0602 |              1998 |
|    58192.1111 |              2000 |
+---------------+-------------------+
16 rows in set (5.87 sec)
```

Part 2:
1) The average number of steps for july are shown below, it is grouped by the user names.

```
mysql> select ufd.name, avg(de.fitbit_steps) from users_field_data ufd join day_entity de on ufd.uid = de.user_id where month(de.fitbit_date) = 7 group by ufd.name;
+----------------------------------+----------------------+
| name                             | avg(de.fitbit_steps) |
+----------------------------------+----------------------+
| 1de2e393b047677dcf7cf5f729c3afc4 |           10242.9032 |
| 82c8ca7904fea3535400823529ade611 |            8735.7742 |
| c95edebebbb7ffac997419157cd0e4e9 |            4313.0000 |
| 00e873bcbfa8c6171db3d1afbf6bf0cf |           10718.5000 |
| 44a688027cc06a0ad4f399e3b7a1cc87 |            2622.1176 |
| a1ad3be33cf61d95d8f21a93a094c747 |            5535.5185 |
+----------------------------------+----------------------+
6 rows in set (0.05 sec)
```

2) I really want to help you with this question, however, I found that this user does not have a valid sleep data records. I will follow up with the IT department to double check if the data is correct.

```
mysql> select avg(fs.fitbit_duration) as sleep_minutes from fitbit_sleep fs
    -> join users_field_data ufd on fs.user_id = ufd.uid
    -> where ufd.name = 'f9f67f5beddc05e72d4c1715c26df95d'
    -> group by month(fs.fitbit_date)
    -> ;
Empty set (0.04 sec)
```
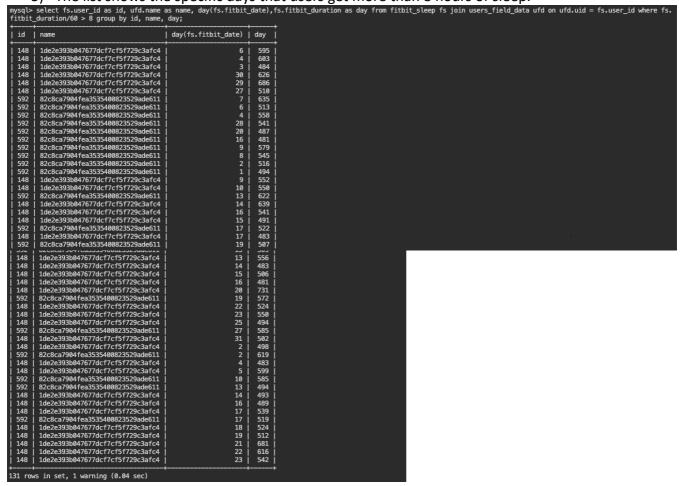
```
mysql> select * from fitbit_sleep where user_id = '907';
Empty set (0.05 sec)
```

3) The screenshot below shos the list of each user_id and the max steps they walked in a single day for each month.

```
mysql> select fdd.user_id, month(fdd.fitbit_date) as step_month, max(fdd.fitbit_steps) as max_steps from fitbit_day_detail fdd group by fdd.user_id, step_month;
+---------+------------+-----------+
| user_id | step_month | max_steps |
+---------+------------+-----------+
|     148 |          7 |       176 |
|     148 |          6 |       132 |
|     148 |          5 |         0 |
|     592 |          7 |       167 |
|     592 |          6 |       160 |
|     592 |          5 |       125 |
|     207 |          7 |       146 |
|     475 |          7 |       117 |
|     648 |          6 |       153 |
|     648 |          7 |       168 |
|     475 |          8 |       155 |
|     148 |          8 |       140 |
|     592 |          8 |       152 |
|     601 |          8 |       144 |
|     601 |          7 |       184 |
|     648 |          8 |       176 |
|     207 |          8 |       152 |
|     148 |          9 |       151 |
|     648 |          9 |       149 |
|     592 |          9 |       137 |
|     475 |          9 |       151 |
|     207 |          9 |       174 |
|     601 |          9 |         0 |
|     601 |         10 |         0 |
|     475 |         10 |       117 |
|     148 |         10 |       139 |
|     592 |         10 |       138 |
|     648 |         10 |       160 |
|     207 |         10 |       165 |
|     148 |         11 |       142 |
|     592 |         11 |       146 |
|     648 |         11 |       133 |
+---------+------------+-----------+
32 rows in set (1.57 sec)
```

4) It is a complicated question, I will definitely find time investigating it when I is available, but I will leave it as blank now. Hope you can understand.

5) The list shows the specific days that users get more than 8 hours of sleep.

```
mysql> select fs.user_id as id, ufd.name as name, day(fs.fitbit_date),fs.fitbit_duration as day from fitbit_sleep fs join users_field_data ufd on ufd.uid = fs.user_id where fs.fitbit_duration/60 > 8 group by id, name, day;
+-----+----------------------------------+---------------------+-----+
| id  | name                             | day(fs.fitbit_date) | day |
+-----+----------------------------------+---------------------+-----+
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   6 | 595 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   4 | 603 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   3 | 484 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  30 | 626 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  29 | 686 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  27 | 510 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   7 | 635 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   6 | 513 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   4 | 558 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  28 | 541 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  20 | 487 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  16 | 481 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   9 | 579 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   8 | 545 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   2 | 516 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   1 | 494 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   9 | 552 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  10 | 550 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  13 | 622 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  14 | 639 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  16 | 541 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  15 | 491 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  17 | 522 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  17 | 483 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  19 | 507 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  13 | 556 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  14 | 483 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  15 | 506 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  16 | 481 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  20 | 731 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  19 | 572 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  22 | 524 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  23 | 550 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  25 | 494 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  27 | 585 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  31 | 502 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   2 | 498 |
| 592 | 82c8ca7904fea3535400823529ade611 |                   2 | 619 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   4 | 483 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                   5 | 599 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  10 | 585 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  13 | 494 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  14 | 493 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  16 | 489 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  17 | 539 |
| 592 | 82c8ca7904fea3535400823529ade611 |                  17 | 519 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  18 | 524 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  19 | 512 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  21 | 681 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  22 | 616 |
| 148 | 1de2e393b047677dcf7cf5f729c3afc4 |                  23 | 542 |
+-----+----------------------------------+---------------------+-----+
131 rows in set, 1 warning (0.04 sec)
```

6) It is also a complicated question, I trid my best to solve it, but I cannot fully guarantee it is correct. Please make it as a reference. Again, I will double check the answer when I have more available time!

```
mysql> select month(fdd.fitbit_date) as step_month, avg(fdd.fitbit_steps/fhr.fitbit_hr) as avg_steps_per_min
    -> from fitbit_day_detail fdd
    -> join users_field_data ufd on fdd.user_id = ufd.uid
    -> join fitbit_hr fhr on fdd.user_id and fdd.fitbit_date = fhr.fitbit_date
    -> where ufd.name = '82c8ca7904fea3535400823529ade611'
    -> group by step_month;
+------------+-------------------+
| step_month | avg_steps_per_min |
+------------+-------------------+
|          7 |        0.07933167 |
|          6 |        0.10072043 |
|          8 |        0.08872044 |
|          9 |        0.08829715 |
|         10 |        0.08740536 |
|         11 |        0.08541109 |
+------------+-------------------+
6 rows in set (5.14 sec)
```

The attached pictures are documentation for references. Sorry again for skipping one of the questions. But no worries, please check your email and I will keep you updated on my status! I did not hear my boss mention the promotion yet, it would be better you could get quick anwer directly from Raj. Thank you!

Best,
Jae

database	ro_research1		Field Name	Data Type	Value	notes	
table	day_entity		id	int	id number	primary	
			user_id	int	user id number	multiple	
			created	int	starts with 157xxx		
			changed	int	starts with 157xxx		
			fitbit_date	date	date xxxx-xx-xx		
			fitbit_steps	int	int number, some are 0		
			fitbit_goal	int	int number, more whole number		
			fitbit_veryacm	int	int number, 0-100		
			fitbit_fairacm	int	int number, 0-100		
			fitbit_ligham	int	int number, 0-1000		
			fitbit_sedmin	int	int number, 0-3000?		

database	ro_research1		Field Name	Data Type	Value	notes	
table	fitbit_day_detail		id	int	id number, large id number	primary	
			user_id	int	id number, small id number	multiple	
			fitbit_steps	int	from 0 to xxx		
			created	int	starts with 15xxx		
			changed	int	starts with 15xxx		
			fitbit_date	date	date xxx-xx-xx xx:xx:xx		

database	ro_research1		Field Name	Data Type	Value	notes	
table	fitbit_hr		id	int	id, identical	primary	
			user_id	int	id, not identical	multiple	
			fitbit_date	date	date xxx-xx-xx xx:xx:xx		
			fitbit_hr	int	hour		
			fitbit_time	varchar	time(clock): xx:xx:xx		
			created	int	large int number, starts with 15xxx		

database	ro_research1		Field Name	Data Type	Value	notes	
table	fitbit_sleep		id	int	id number	primary	
			user_id	int	user id	multiple	
			name	varchar	date (?): xxxx-xx-xx		
			fitbit_date	varchar	date, xxxx-xx-xx		
			fitbit_duration	int	int		
			fitbit_efficiency	int	some are null		
			fitbit_timeinbed	int	int		
			fitbit_ismainsleep	tiny int	some are 0		
			created	int	large int number, starts with 15xxx		

database	ro_research1		Field Name	Data Type	Value	notes	
table	goal_entity		id	int	id number, identical	primary	
			user_id	int	user id	multiple	
			goal	int	whole number		
			date	varchar	date: xxxx-xx-xx		

database	ro_research1		Field Name	Data Type	Value	notes	
table	suth_user		id	int	id number, identical	primary	
			user_id	int	user id	multiple	
			startdate	varchar	date: xxxx-xx-xx, some are 0000-00-00		
			ptstatus	varchar	Active or aw		

database	ro_research1		Field Name	Data Type	Value	notes	
table	track_entity	(empty)					

database	ro_research1		Field Name	Data Type	Value	notes	
table	users_field_data		uid	int	user id(?)	primary	
			langcode	varchar	"en"	primary	
			name	varchar	long series containing number and letters	multiple	
			mail	varchar	email address	multiple	
			timezone	varchar	UTC, Amercia/New_York		