Part 1: Analysis

Analyze and extract any interesting insights you can derive from the data set attached (each row represents the assignment of a job in our research queue, including some data about the analyst who received the assignment and the current state of the research queue). What can you infer? What do you think this means for us from a business perspective?

Part 2: Data modeling

Assuming we are starting with the data set from Part 1 as our raw data table, how would you model this data in a data warehouse for analytical purposes? What tables would you create? What kinds of questions do you imagine business users would want to ask of this data, and how would they express them in your data model? Please use whatever tools you are comfortable with to answer this question and whatever flavor of SQL you are most familiar with. A github repo or gist is preferred.

Part 3: SQL

Assume we are using these two tables:

customers table:

```
customer_nbr customer_name
------------ --------------
1            Jim Brown
2            Jeff Gordon
3            Peter Green
4            Julie Peters
```

orders table:

```
order_nbr    order_date customer_nbr order_amt
----------- ---------- ------------ ----------
1            2008-10-01 1                15.50
2            2008-12-15 2                25.00
3            2009-01-02 1                18.00
4            2009-02-20 3                10.25
5            2009-03-05 1                30.00
```

What are the problem(s) with this SQL query?

```
SELECT
     customers.customer_name,
     SUM(COALESCE(orders.order_amt, 0)) AS total_2009
FROM
     customers
     LEFT OUTER JOIN orders ON (
           customers.customer_nbr = orders.customer_nbr
     )
WHERE
     orders.order_date >= '20090101'
GROUP BY
     customers.customer_name
```