

Coding Challenge

60-90 min coding exercise

For this coding exercise, you will need to write a web-application that calculates the length of service (LOS) for cars in a repair shop. The goal is to determine the expected length of service per mechanic, based on the types of jobs they do - and the national average repair-time for each of those repair types.

Use a framework like Django/Python or Rails with a MySQL database.

Each car repair job will get captured in a transaction (represented in one row of a table called `shop_workflow_fact`) that has the following fields:

- `id`
- `dropoff date`
- `pickup date`
- `assigned mechanic` (Bob, Rich, Larry, Simone, Peter)
- `type of repair` (code: A through F for different types of repair, see below)

Repair types (and national averages):

- A - oil change (1 day)
- B - tire repair (1 day)
- C - engine inspection (3 days)
- D - tune-up (2 days)
- E - brake service (3 days)
- F - oil gasket replacement (2.5 days)

Example table

<i>id</i>	<i>dropoff</i>	<i>pickup</i>	<i>mechanic</i>	<i>Repair type</i>
1	12/1/2016	12/1/2016	Bob	A
2	12/2/2016	12/5/2016	Rich	D
3	12/3/2016	12/7/2016	Rich	D
4	12/4/2016	12/5/2016	Rich	A
4	12/4/2016	12/6/2016	Simone	E

Prepare a seed file of your choice, either seed data, csv file or SQL, and include a few more fact rows than shown in the example.

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Calculate the length of service for each mechanic and type of repair and determine if they are above or below the stipulated average goal. Results can be displayed on the command line (using the shell)

Example output:

Name - type - average time - ratio of average

Bob - A - 1 - 1

Rich - D - 4 - 0.5

etc.

Provide results in GitHub, along with a readme.md file and 1 test for one of the calculations

Bonus:

As some mechanics do larger jobs than others, direct comparison is not a good metric, hence:

- Compare and rank the mechanics by type of job, i.e. rank mechanics for type A separately from type D etc.
- Compare/rank the mechanics - adjusted for their expected length of repair based on the national average.