SmartCat

Dear candidate,

Thank you for choosing SmartCat as a company where you would like to work and where we could grow together. People are the core of our company and we encourage everyone with automation skills to take a chance and enter our selection process. You have approximately 2 days to complete the challenge that is given to you. Please read the instructions carefully. You are allowed to use any online resources. After completing the challenge, please compress your work directory and send us via email or share it on a public git repository. Please write clear instructions on how to run the test application.

Treat this test as confidential and do not share it.

Thank you and good luck!

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Work shifts challenge

Description

Data generator

REST service has an endpoint that simulates data collected about work shifts. The specs for the endpoint are here: https://my.tanda.co/api/v2/documentation#shifts
The endpoint should generate random shift data for the previous week. The endpoint should just return the data, no need to back it with the database. No need to provide authentication.

Shift: 326872


```
[
 {
 "id": 326872,
 "timesheet_id": 47237,
 "user_id": 3274,
 "date": "2020-07-23",
 "start": 1595526660,
 "breaks": [
 {
 "id": 96575,
 "shift_id": 326872,
 "start": 1595544960,
 "finish": 1595546160,
 "length": 20,
 "paid": false,
 "updated_at": 1595546174
 }
 ],
 "finish": 1595563380,
 "department_id": 2628,
 "sub_cost_centre": null,
 "tag": null,
 "tag_id": null,
 "status": "PENDING",
 "metadata": null,
 "leave_request_id": null,
 "allowances": [
 {
 "id": 180,
 "name": "NY Spread of Hours (Other NY State $11.80/hr)",
 "value": 1.0,
 "updated_at": 1595563362,
 "cost": 11.8
 }
 ],
 "shift_feedback_id": null,
 "approved_by": null,
 "approved_at": null,
 "award_interpretation": [
 {
```

```
"units": 1.0,
"date": "2020-07-23",
"export_name": "SOH",
"secondary_export_name": null,
"ordinary_hours": null,
"cost": 11.8
},
{
"units": 4.7334,
"date": "2020-07-23",
"export_name": "R",
"secondary_export_name": null,
"ordinary_hours": true,
"cost": 65.32092,
"from": 1595546160,
"to": 1595476800
},
{
"units": 5.0833,
"date": "2020-07-23",
"export_name": "R",
"secondary_export_name": null,
"ordinary_hours": true,
"cost": 70.14954,
"from": 1595526660,
"to": 1595544960
},
{
"units": 0.05,
"date": "2020-07-24",
"export_name": "R",
"secondary_export_name": null,
"ordinary_hours": true,
"cost": 0.69,
"from": 1595563200,
"to": 1595563380
}
],
"cost": 147.96046,
"cost_breakdown": {
"award_cost": 136.16046,
"allowance_cost": 11.8
},
"updated_at": 1595563361,
"record_id": 792126,
"last_costed_at": 1595563361
}
]
```


ETL Job

ETL has a job that fetches the data from the endpoint from step 1, transforms the data and loads it into a MySql database. The resulting database contains 4 tables:

1. **breaks** - which contains all the `breaks` fetched from the shift data from the API. 2.
2. **allowances** - which contains all the `allowances` fetched from the shift data from the

API

3. **award_interpretations** - which contains all the `award_interpretations` fetched from the shift data from the API
4. **shifts** - which should contain everything it does except for breaks, allowances, awar_interpretation properties (arrays);
5. All the timestamps should be converted to EST timezone;
6. breaks, allowances, award_interpretation should be enriched with shift_id (corresponds to ‘id’ column in the shift object), shift_date (corresponds to ‘date’ in shift object), sheet_id (corresponds to ‘sheet_id’ in shift object);

Deliverables

- Working or even non-working code sent in zip archive or shared via public git repository
- Code should be written in Java or Python
- The code should contain a README file that explains the approach and how to run the applications
- Deployment and cleanup should be as simple as possible

General advice

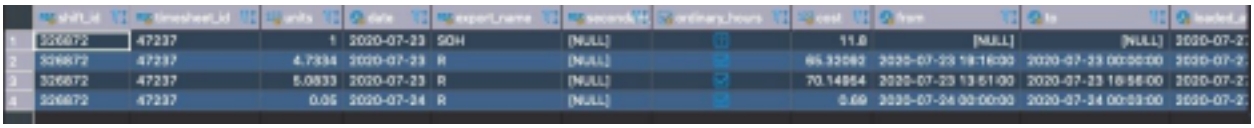
- Use common sense, cover test cases that you think are important in this case
- Keep things simple
- It’s much better to have a working solution than the perfect, but not working solution

Database tables should look like this:

shift_breaks (for shift_id ‘326872’):

shift_allowances (for shift_id ‘326872’):

shift_award_interpretation (for shift_id ‘326872’):



shifts (for shift_id ‘326872’, in three screenshots because there are a lot of columns):