Data Engineer code exercise

The goal of this code challenge is to give an idea on how you approach a typical data engineering task, organize code, communicate and solve problems.

**** Requirements:**

Write a script that would import itunes subscriptions into a database in order to allow data scientists to analyze the data. Data.json includes the raw data from which you can derive/calculate fields. Data.js has a list of itunes subscriptions, and each subscription has a list of transactions. Hint: load data.json in http://jsonviewer.stack.hu/ for better readability

- **use python, and handle exceptions if a file cannot be read.**
- **Use postgres database for storing data.**

Part 1:

- Create a postgres database called subscription
- Add itunes_subscription table with the following fields:

Field	**Description**
Id	Unique identifier for a subscription, shouldn't change for the lifetime of subscription
transactions	Usually json
trial_start_date	optional
Subscription_start_date	optional
Expiration_date	required
current_status	Free text

Part 2:

Write a python script that reads data from data.json and inserts it in the database.

- Store the list of transactions for a subscription in the **transactions** field
- Calculate and store **trial_start_date**. Rule: trial_start_date is equal to purchase_date where is_trial_period = true
- Calculate and store **subscription_start_date**. Rule: subscription_start_date is equal to purchase_date for the transaction that immediately follows a trial transaction

- Calculate and store **expiration_date**. Rule: expiration_date is equal to expires_date of the last transaction
- Calculate and store **current_status**. Rules for calculating current_status
    - If the subscription only has a trial transaction and the expires_date is in the future, then the value is “Active Trial”
    - If the subscription only has a trial transaction and the expires_date is in the past, then the value is “Expired Trial”
    - If the subscription has non-trial (paid) transactions and the expires_date of the last transaction is in the future, then the value is “Active Subscription”
    - If the subscription has non-trial (paid) transactions and the expires_date of the last transaction is in the past, then the value is “Expired Subscription”

Part 3:

Write an sql query that lists the number of Active Itunes Subscriptions, Expired Itunes Subscriptions, Active trials and expired trials.