**Data Engineering Recruitment**

There are two parts. One is a coding exercise, and the other is a data modelling exercise. Please do not spend hours on this. We expect to you finish this in 1-2 hours maximum.

**Part 1: JSON Flattening**

Your task is to create a JSON flattening function that can transform a nested JSON into a flattened JSON for a list of selected keys.

NOTE: You should have an accompanying products.json file.

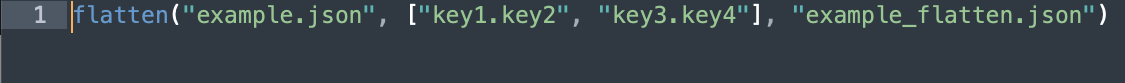
Create a python function ​flatten​ that takes these parameters:

Text

Description automatically generated

The function should write the flattened Json content to the ​output\_file\_path​ and return a boolean to indicate whether the function was successful.

**For example:**



The below example.json

A picture containing text

Description automatically generated

would be converted into the following example\_flatten.json

Text

Description automatically generated

and return True.

**Important Notes:**

* You can create utility functions to support your task.
* Please only use standard python libraries. (e.g., Json, typing, os, etc.)
* Use the products.json which is provide with this exercise as an input
* We want to see clean working code

**Please send or share with us containing:**

* All python scripts for this task
* The ​generated Json file using the following list of key paths:

Text

Description automatically generated

**Part 2: Data Modelling**

Translate the below requirements into a logical data model and present this in the most appropriate way. We are looking for optimal way for analytics and not a process flow.

**Loan Lifecycle Process**

* Small​ ​businesses (​**borrowers**​) can apply for loans
* If the application is successful, it is listed on a marketplace where multiple **investors** ​can fund a part of the loan (​**loan part**​), until the full amount of the loan has been funded.
* Once a loan has been fully funded, the ​**borrower**​ receives the full amount and a monthly ​**repayment schedule**​ is generated.
* The ​**borrower**​ then makes a repayment according to the schedule, that repayment gets distributed between ​**investors**​ according to the value on each loan part.

**Requirements**

1. Design data model as a database schema to support analytics
2. The schema should capture key data points from above, plus any others that you think are useful
3. Provide reasoning for your design decisions.