CS 327E Project 4, due Thursday, 10/08.

This project makes use of the same shopify dataset which was used in Project 3. If you still have this data in your Jupyter notebook instance, you are good to go. If you don't have it anymore, you'll need to download as follows:

```
gsutil cp gs://cs327e-open-access/shopify.zip .
```

Redesign the shopify database for Firestore in accordance to Firestore's data model and the design principles discussed in class. Create an ERD with your Firestore database. The ERD should be created in Lucidchart. Be sure to include collections and embedded maps. Follow the college example from class for formatting and style. Collections should have document ids in addition to field names and types. Use one background color to identify collections and a different color to identify embedded maps. Draw the relationships between all entity types. If you're not sure what type of relationship exists between two given entities, sample the data. Export the ERD as a pdf file and name it shopify-erd.pdf.

Create a new jupyter notebook and name it project4.ipynb. Implement the following logic in your project4.ipynb notebook:

- Map entities to Firestore collections and embedded maps and populate them with the appropriate data from the shopify dataset.
- Get a document count for each collection.
- Implement the following queries:
 - List the 10 apps with the highest number of reviews (based on apps.review_count). Return the id, title, developer, rating and reviews_count of those apps. Order the results by reviews_count in descending order.
 - 2) Find the apps which are categorized as "Trust and security". Return the id, url, title, developer and rating of those apps. Order the results by rating in descending order. Limit the number of results to 5.
 - 3) Find all the apps that are under the Premium Plan and whose price is \$12.99 or higher. Return the id, title, developer, rating, and reviews_count of those apps. Order the results by price in ascending order. Limit the number of results to 10.

CS 327E Project 4 Rubric

Due Date: 10/08/20

Create an ERD for shopify designed for Firestore. Include field names, types, and ids. Draw proper relationships between entity types. -3 for each missing field, data type or id -3 for each missing or incorrect relationship between entity types Create a notebook project4.ipynb -3 incorrect file name Create a Firestore collection for each collection entity from the ERD -5 for each collection which does not match its entity specification -4 for each embedded map which does not match its entity specification -3 for each field which does not match its entity specification -2 for each id which does not match its entity specification -3 for each missing or incorrect or each empty collection5 for each empty collection5 for each empty collection -3 for each empty collection -3 for each missing or incorrect count Implement Query #1: Apps with highest number of reviews3 incorrect or missing order by -3 incorrect or missing order by -3 incorrect or missing fileds in results -3 incorrect or missing filed in results -3 incorrect or missing filer -5 incorrect or missing filer -6 incorrect or missing filer -7 incorrect or missing filer -7 incorrect or missing		
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```
submission.json submitted into Canvas. Your project will not be graded without this submission. The file should have the following schema:

{
    "commit-id": "your most recent commit ID from GitHub",
    "project-id": "your project ID from GCP"
}

Example:

{
    "commit-id": "dab96492ac7d906368ac9c7a17cb0dbd670923d9",
    "project-id": "some-project-id"
}

Total Credit:

100
```