National College of Ireland

Configuration Manual

MSc Research Project
Data Analytics

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Project Submission Sheet
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Configuration Manual

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1 Introduction

This configuration manual is for the research project of the Recommendation of Korean-Pop Bands using Topic Modelling Algorithm and Myers-Briggs Type Indicator. Section 2 explained the system configuration to implement the project. Whereas, in Section 3 outlined the data extraction process. Next, Section 4 entailed the required Python libraries for the implementation of the project. This is followed by the recommender demonstration in Section 5.

2 System Configuration

2.1 Hardware Requirements

The project is conducted at a local system with the specifications below:

1. Model Name: MacBook Air
2. System OS: MacOS Monterey (Version 12.6.1)
3. Processor: 1.6 GHz Dual-Core Intel Core i5
4. Memory: 8 GB

2.2 Software Requirements

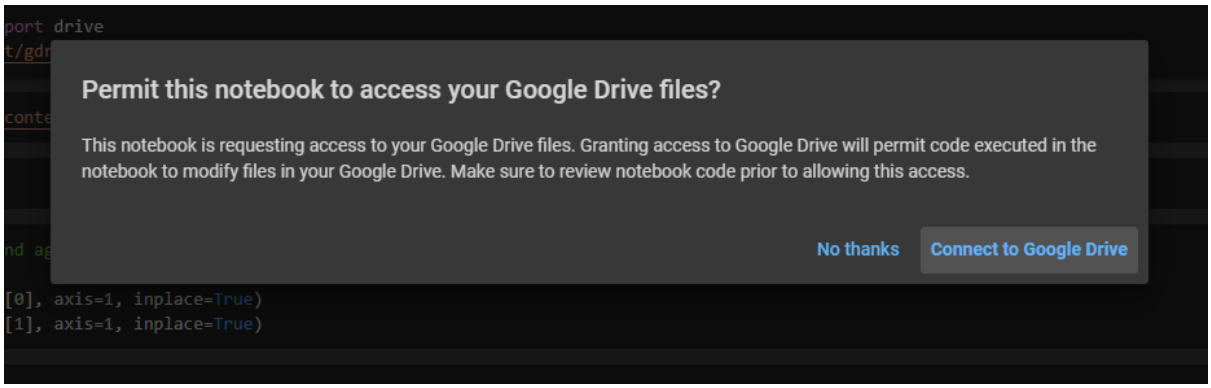
1. Python 3.8.16: The version (Zakka; 2020) of the programming language that the code is written in throughout the project.
2. Google Colaboratory: A Jupyter notebook environment that is free and runs entirely in the cloud. It helps to execute the code.
3. Google Drive: The location of the stored raw data.
4. Anvil: A drag-and-drop web application builder that is specifically Python-based that is used to deploy the recommender algorithm.

3 Data Extraction

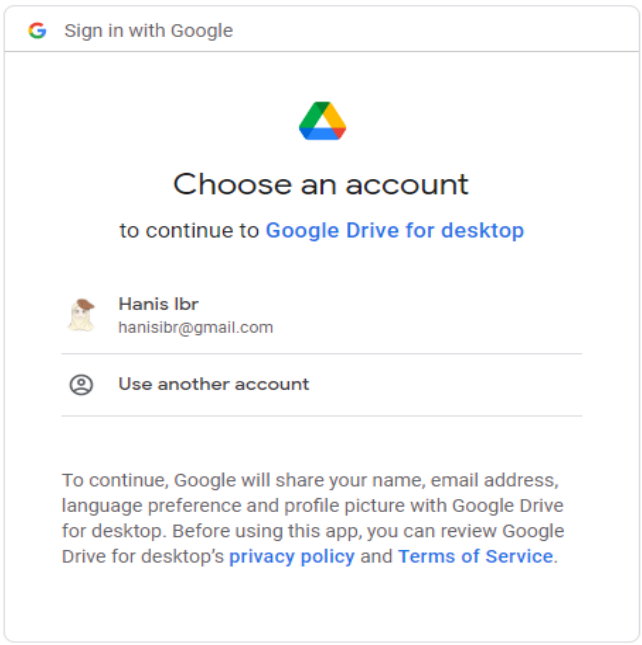
Firstly, the dataset must be located in Google Drive. Then, the extraction of data begins by executing these lines of code:

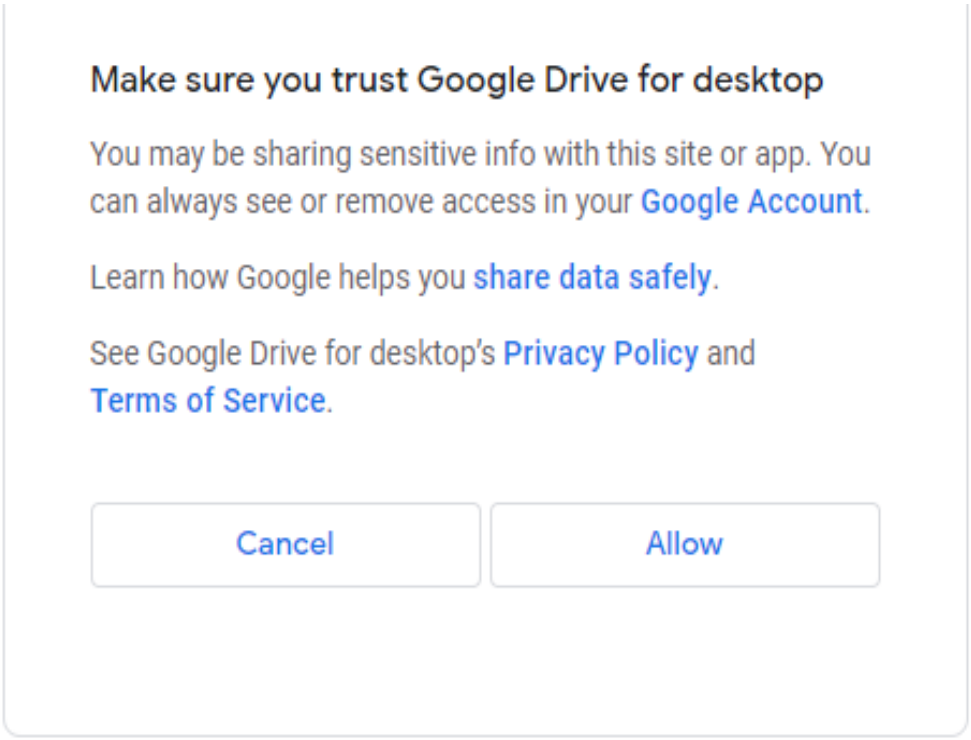
```
[2]  from google.colab import drive
     drive.mount('/content/gdrive')
```

By executing, a pop-up message will appear to permit the notebook in connecting to Google Drive:



Next, the user is redirected to a page to select an account to be connected to Google Drive and allowing the permission to be connected:





Upon allowing, the user is returned to the notebook environment. As an indication of a successful mount from Google Drive, the output is produced below. Thus, the dataset can be called to proceed with the subsequent step.

```
from google.colab import drive
drive.mount('/content/gdrive')
```

```
Mounted at /content/gdrive
```

```
df1 = pd.read_csv('/content/gdrive/MyDrive/rp/dataset.csv')
```

4 The Required Python Libraries for the Implementation of the Project

The Python Libraries utilised for the entire project implementation is illustrated below:

```
import pandas as pd
import re
import numpy as np

# LDA Model
import gensim
from gensim.utils import simple_preprocess
import gensim.corpora as corpora
from pprint import pprint
!pip install -U spacy
import spacy
import nltk
from nltk.tokenize import word_tokenize
from nltk.corpus import stopwords
nltk.download('stopwords')
from gensim import corpora, models, similarities

# Deploying the application
!pip install anvil-uplink
import anvil.server

# Evaluation of LDA model
from sklearn.metrics.pairwise import cosine_similarity
from collections import OrderedDict
```

5 Recommender Demonstration

The following code that is not commented is added to connect to Anvil:

```
# Connecting the script

anvil.server.connect("WZEQQX5P62VGZB7HOACJT5QG-PMZICLHDCMXLCP7E")

@anvil.server.callable
# def band_recommender(mbti):
#   recommendation_scores = []
#   for idx,row in vertical_stack.iterrows():
#     if row.name[0] == mbti:
#       for each in mbti:
#         sims = index[lda_vectors]
#         sims = list(enumerate(sims))
#         for sim in sims:
#           recommendation_score = [row.name[1], sim[1]]
#           recommendation_scores.append(recommendation_score)
#         recommendation = sorted(recommendation_scores, key=lambda x: x[1], reverse=True)
#       return 'Here are the band recommendations for {}:'.format(mbti) + " " + str(recommendation[0])

anvil.server.wait_forever()
```

References

Zakka, K. (2020). Cs231n python tutorial with google colab, `https://colab.research.google.com/github/cs231n/cs231n.github.io/blob/master/python-colab.ipynb`.