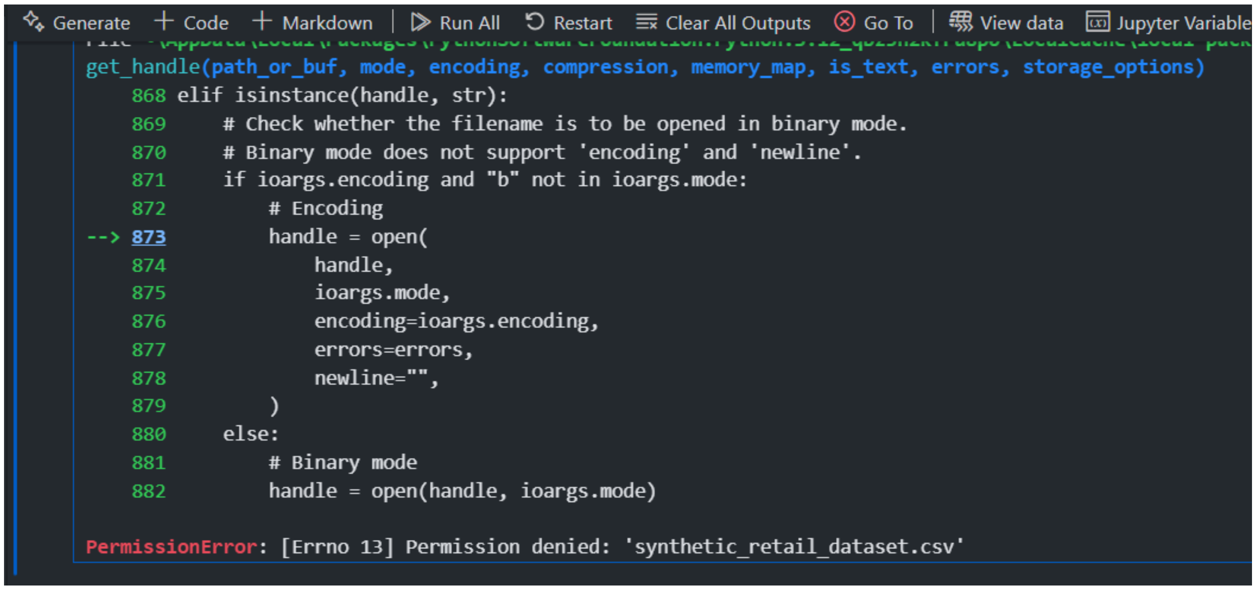
Debugging Notes

1,

Error:
I received an error while trying to access a file.

Cause:
The error occurred because I was attempting to use a file that was already opened.

Solution:
Ensure that the file is closed before opening it again in your program, or use file handling methods (like with open(...) as f: in Python) that automatically manage closing the file.



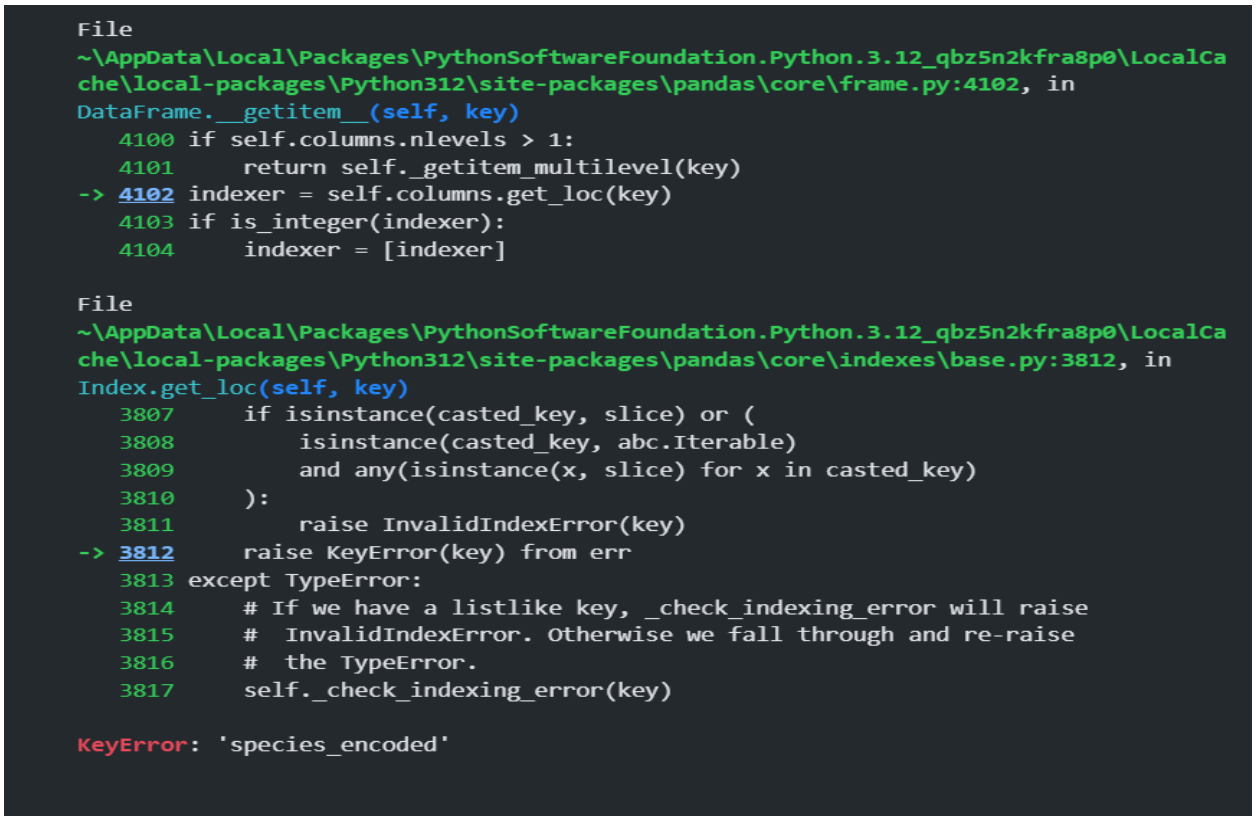
```
get_handle(path_or_buf, mode, encoding, compression, memory_map, is_text, errors, storage_options)
    868 elif isinstance(handle, str):
    869     # Check whether the filename is to be opened in binary mode.
    870     # Binary mode does not support 'encoding' and 'newline'.
    871     if ioargs.encoding and "b" not in ioargs.mode:
    872         # Encoding
--> 873         handle = open(
    874             handle,
    875             ioargs.mode,
    876             encoding=ioargs.encoding,
    877             errors=errors,
    878             newline="",
    879         )
    880     else:
    881         # Binary mode
    882         handle = open(handle, ioargs.mode)

PermissionError: [Errno 13] Permission denied: 'synthetic_retail_dataset.csv'
```

2,

Error:
While exporting the data, I used the original dataframe instead of the preprocessed one, which caused missing encoded columns.

Cause:
The original dataframe did not contain the encoded columns that were added during preprocessing.

Solution:
Always export the preprocessed dataframe that includes all necessary transformations, such as encoded columns, rather than the original raw dataframe.



```
File
~\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5n2kfra8p0\LocalCa
che\local-packages\Python312\site-packages\pandas\core\frame.py:4102, in
DataFrame.__getitem__(self, key)
   4100 if self.columns.nlevels > 1:
   4101     return self._getitem_multilevel(key)
-> 4102 indexer = self.columns.get_loc(key)
   4103 if is_integer(indexer):
   4104     indexer = [indexer]

File
~\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.12_qbz5n2kfra8p0\LocalCa
che\local-packages\Python312\site-packages\pandas\core\indexes\base.py:3812, in
Index.get_loc(self, key)
   3807     if isinstance(casted_key, slice) or (
   3808         isinstance(casted_key, abc.Iterable)
   3809         and any(isinstance(x, slice) for x in casted_key)
   3810     ):
   3811         raise InvalidIndexError(key)
-> 3812     raise KeyError(key) from err
   3813 except TypeError:
   3814     # If we have a listlike key, _check_indexing_error will raise
   3815     #  InvalidIndexError. Otherwise we fall through and re-raise
   3816     #  the TypeError.
   3817     self._check_indexing_error(key)

KeyError: 'species_encoded'
```

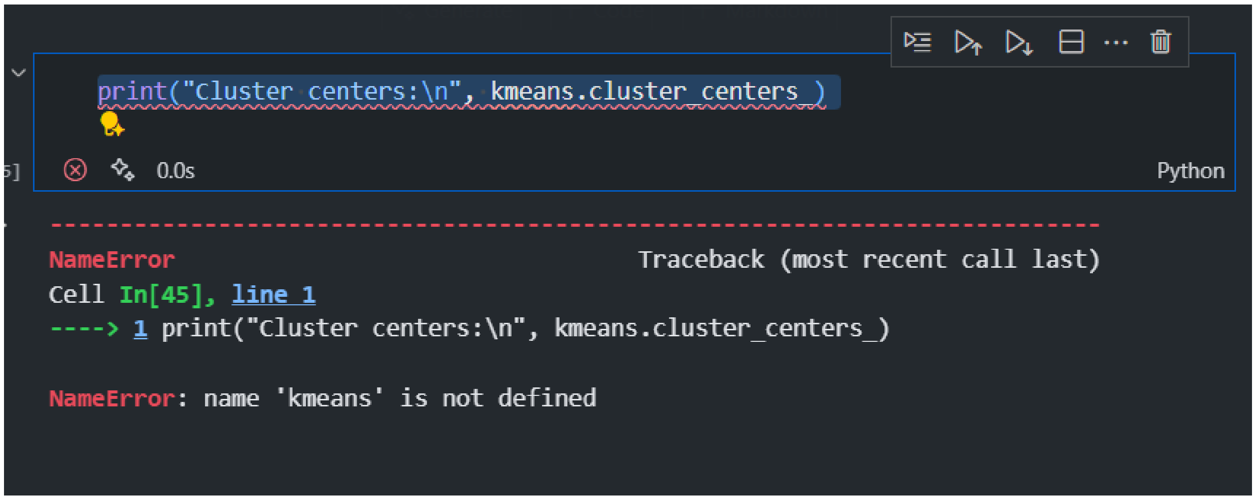
3,

Error:
I was unable to access the cluster centers after running kmeans_clustering_evaluate() in my modular code.

Cause:
The KMeans object was created inside the function but not returned. Currently, the function only returns clusters and ARI, so the fitted model (and its cluster_centers_) is inaccessible outside the function.

Solution:
Modify the function to also return the fitted KMeans model. This allows access to the cluster centers, for example:

return clusters, ari, kmeans_model.



```
print("Cluster centers:\n", kmeans.cluster_centers_)
```
0.0s Python

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[45], line 1
----> 1 print("Cluster centers:\n", kmeans.cluster_centers_)

NameError: name 'kmeans' is not defined
```

4,

Error:
When running the SQL code again, I got a “table already exists” error.

Cause:
The error occurs because the schema or tables already exist. Attempting to create them again without first removing or checking them causes a conflict.

Solution:
Use DROP TABLE IF EXISTS before creating the tables to ensure that any existing tables are removed, e.g.:

DROP TABLE IF EXISTS fact_sales;

DROP TABLE IF EXISTS dim_customer;

DROP TABLE IF EXISTS dim_product;

DROP TABLE IF EXISTS dim_date;

This ensures that the tables can be recreated without errors.