```python
import pandas as pd

# Load the dataset
file_path = 'Final Data CA+FA.csv'
data = pd.read_csv(file_path)

# Filter data for only 'Corresponding' author type
data_corresponding = data[final_data['Author Type'] ==
'Corresponding']

# Get the top 20 countries by publication count in the final dataset
with 'Corresponding' author type
top_20_data_corresponding =
data_corresponding['Country'].value_counts().head(20).reset_index()
top_20_data_corresponding.columns = ['Country', 'Publication Count']

# Display the result
print(top_20_data_corresponding)

                      Country  Publication Count
0                       China               2839
1    United States of America               2512
2                     Germany                721
3                       Japan                539
4                     England                410
5                       Italy                353
6                  South Korea                349
7                      Canada                340
8                       Spain                321
9                   Australia                275
10                Netherlands                268
11                     Sweden                259
12                     France                223
13                      India                189
14                     Taiwan                171
15                     Poland                157
16                     Brazil                151
17                Switzerland                131
18                    Denmark                116
19                    Belgium                103

# Calculate the number of unique publications from each country using
the 'WOS ID' column
unique_publications_per_country = data.groupby('Country')['WOS
ID'].nunique().sort_values(ascending=False)

unique_publications_per_country

Country
United States of America      2462
```

```
China                        2254
Germany                       713
Japan                         523
England                       465
                              ...
Liberia                         1
Mali                            1
North Korea                     1
SWITZERLAND                     1
Zimbabwe                        1
Name: WOS ID, Length: 99, dtype: int64
```

```python
# Extract the top 10 countries based on the number of unique
publications
top_10_unique_publications_per_country =
unique_publications_per_country.head(15)
top_10_unique_publications_per_country
```

```
Country
United States of America    2462
China                       2254
Germany                      713
Japan                        523
England                      465
Italy                        350
Canada                       335
Spain                        317
South Korea                  288
Sweden                       270
Netherlands                  270
Australia                    262
France                       218
India                        185
Taiwan                       154
Name: WOS ID, dtype: int64
```

```python
import pandas as pd

# Load the data from a CSV file
file_path = 'Final Data CA+FA.csv'

data = pd.read_csv(file_path)

# Split the data based on the 'Author Type'
first_authors = data[data['Author Type'] == 'First']
corresponding_authors = data[data['Author Type'] == 'Corresponding']

# Calculate counts for male and female authors
first_authors_male = first_authors[first_authors['Gender'] == 'male']
['Country'].value_counts()
```

```python
first_authors_female = first_authors[first_authors['Gender'] ==
'female']['Country'].value_counts()
corresponding_authors_male =
corresponding_authors[corresponding_authors['Gender'] == 'male']
['Country'].value_counts()
corresponding_authors_female =
corresponding_authors[corresponding_authors['Gender'] == 'female']
['Country'].value_counts()

# Combine the data into DataFrames for easier manipulation
fa_counts = pd.DataFrame({
    'Male First Authors': first_authors_male,
    'Female First Authors': first_authors_female
}).fillna(0).astype(int)

ca_counts = pd.DataFrame({
    'Male Corresponding Authors': corresponding_authors_male,
    'Female Corresponding Authors': corresponding_authors_female
}).fillna(0).astype(int)

# Define top countries including the Netherlands and their specific
order
top_countries = [
    "United States of America", "China", "Germany", "Japan",
"England",
    "Italy", "Canada", "Spain", "South Korea", "Netherlands", "Sweden"
]

# Filter the DataFrames to include only the specified countries
fa_gender_bifurcation = fa_counts.loc[top_countries]
ca_gender_bifurcation = ca_counts.loc[top_countries]

# Output the gender bifurcation tables for First and Corresponding
Authors
print("Gender Bifurcation for First Authors (FA):")
print(fa_gender_bifurcation)
print("\nGender Bifurcation for Corresponding Authors (CA):")
print(ca_gender_bifurcation)
```

```
Gender Bifurcation for First Authors (FA):
                          Male First Authors  Female First Authors
United States of America                1214                   860
China                                   1195                   894
Germany                                  362                   278
Japan                                    365                   134
England                                  222                   176
Italy                                    136                   202
Canada                                   160                   108
Spain                                    107                   198
South Korea                              140                   102
```

```
Netherlands                                  104                              131
Sweden                                       118                              119

Gender Bifurcation for Corresponding Authors (CA):
                          Male Corresponding Authors  \
United States of America                     1649
China                                        1717
Germany                                       499
Japan                                         443
England                                       268
Italy                                         178
Canada                                        236
Spain                                         170
South Korea                                   223
Netherlands                                   169
Sweden                                        148

                          Female Corresponding Authors
United States of America                      724
China                                         849
Germany                                       206
Japan                                          72
England                                       113
Italy                                         173
Canada                                         83
Spain                                         147
South Korea                                    81
Netherlands                                    92
Sweden                                        100
```