[4-2. DB 데이터 엑셀로 추출하기]

1. 엑셀파일 쓰기 기초

```
In [ ]:
from openpyxl import Workbook

# 새로운 워크북(엑셀 파일) 생성
workbook = Workbook()

# 활성 시트(첫번째 시트) 선택
sheet = workbook.active

# 시트 이름 변경
sheet.title = "DataSheet"

# 셀에 데이터 쓰기
sheet['A1'] = 'Name'
sheet['B1'] = 'Age'
sheet['C1'] = 'Gender'

# 여러 셀에 데이터 쓰기
data = [
    ('John', 25, 'male'),
    ('Emily', 30, 'female'),
    ('Michael', 35, 'male')
]
for row_data in data:
    sheet.append(row_data)

# 엑셀 파일 저장
workbook.save('excel_data2.xlsx')
```

2. 데이터베이스의 데이터를 엑셀파일로 출력하기

2-1. 데이터베이스 데이터 읽어오기

```
In [ ]:
from connector import Connector

with Connector() as conn:
    query = "SELECT * FROM cashflow_tbl WHERE deposit > 0;"
    conn.cursor.execute(query)
    result = conn.cursor.fetchall()
```

```
In [ ]:
print(result)
```

[{'id': 1, 'account_id': 'hana4321', 'dw_date': datetime.date(2024, 1,

2), 'category': '자본금', 'client': 'FC사', 'deposit': 2000000000, 'withdrawal': 0, 'description': '자본금 입금', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 3, 'account_id': 'shhn4567', 'dw_date': datetime.date(2024, 1, 2), 'category': '계좌이체', 'client': 'FC사', 'deposit': 1000000000, 'withdrawal': 0, 'description': '정기예금 예치', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 4, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 3), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 33000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 7, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 4), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 8, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 5), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 30000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 9, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 6), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 10, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 7), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 31000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 12, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 8), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 14, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 9), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 31000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 15, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 10), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 27000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 40, 21), 'deleted_at': None}, {'id': 19, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 11), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 43, 17), 'deleted_at': None}, {'id': 20, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 12), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 32000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 43, 17), 'deleted_at': None}, {'id': 21, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 13), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 35000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 43, 17), 'deleted_at': None}, {'id': 23, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 14), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 33000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 43, 17), 'deleted_at': None}, {'id': 25, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 1, 15), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 24000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 10, 23, 43, 17), 'deleted_at': Non

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unt_id': 'hana1234', 'dw_date': datetime.date(2024, 2, 28), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 27000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 13, 18, 53, 2), 'deleted_at': None}, {'id': 142, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 2, 29), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 32000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(202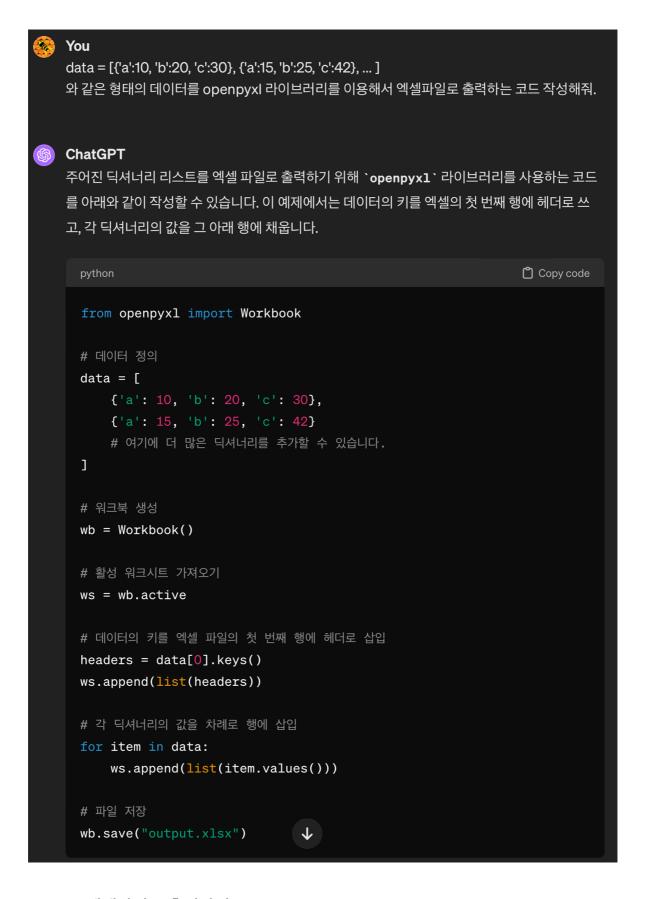4, 4, 13, 18, 53, 2), 'deleted_at': None}, {'id': 167, 'account_id': 'shhn4567', 'dw_date': datetime.date(2024, 3, 2), 'category': '이자수입', 'client': '신한은행', 'deposit': 4246575, 'withdrawal': 0, 'description': '정기예금 이자', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 168, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 1), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 169, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 2), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 29000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 170, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 3), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 171, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 4), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 30000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 172, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 5), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 173, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 6), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 27000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 174, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 7), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 34000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 175, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 8), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 31000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 176, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 9), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 177, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 10), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 20000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 178, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 11), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 39000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 179, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 12), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 34000000, 'withdrawal': 0, 'description': '객실 매출',

'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 180, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 13), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 36000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 181, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 14), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 182, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 15), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 31000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 183, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 16), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 184, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 17), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 185, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 18), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 186, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 19), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 38000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 187, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 20), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 32000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 188, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 21), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 189, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 22), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 24000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 190, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 23), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 26000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 191, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 24), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 32000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 192, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 25), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 40000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 193, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 26), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 20000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 194, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 27), 'c

ategory': '객실수입', 'client': '호텔스닷컴', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 195, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 28), 'category': '객실수입', 'client': '호텔스넷', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 196, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 29), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 25000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 197, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 30), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 28000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}, {'id': 198, 'account_id': 'hana1234', 'dw_date': datetime.date(2024, 3, 31), 'category': '객실수입', 'client': '호텔스닷컴', 'deposit': 35000000, 'withdrawal': 0, 'description': '객실 매출', 'created_at': datetime.datetime(2024, 4, 15, 10, 27, 23), 'deleted_at': None}]

2-2. 데이터를 엑셀파일에 쓰기(openpyxl)

2-2-1. ChatGPT 질의

You

data = [{'a':10, 'b':20, 'c':30}, {'a':15, 'b':25, 'c':42}, ...]
와 같은 형태의 데이터를 openpyxl 라이브러리를 이용해서 엑셀파일로 출력하는 코드 작성해줘.

ChatGPT

주어진 딕셔너리 리스트를 엑셀 파일로 출력하기 위해 `openpyxl` 라이브러리를 사용하는 코드를 아래와 같이 작성할 수 있습니다. 이 예제에서는 데이터의 키를 엑셀의 첫 번째 행에 헤더로 쓰고, 각 딕셔너리의 값을 그 아래 행에 채웁니다.

python   ☐ Copy code

```python
from openpyxl import Workbook

# 데이터 정의
data = [
    {'a': 10, 'b': 20, 'c': 30},
    {'a': 15, 'b': 25, 'c': 42}
    # 여기에 더 많은 딕셔너리를 추가할 수 있습니다.
]

# 워크북 생성
wb = Workbook()

# 활성 워크시트 가져오기
ws = wb.active

# 데이터의 키를 엑셀 파일의 첫 번째 행에 헤더로 삽입
headers = data[0].keys()
ws.append(list(headers))

# 각 딕셔너리의 값을 차례로 행에 삽입
for item in data:
    ws.append(list(item.values()))

# 파일 저장
wb.save("output.xlsx")
```

2-2-2. 엑셀파일로 출력하기

```python
from openpyxl import Workbook

# 새로운 워크북(엑셀 파일) 생성
workbook = Workbook()

# 활성 시트(첫번째 시트) 선택
sheet = workbook.active

# 시트 이름 변경
sheet.title = "DataSheet"

# 데이터의 키를 엑셀 파일의 첫번째 행에 헤더로 삽입
headers = result[0].keys()
sheet.append(list(headers))

# 각 딕셔너리의 값을 차례로 행에 삽입
for item in result:
    sheet.append(list(item.values()))

# 엑셀 파일 저장
workbook.save('data_select1.xlsx')
```
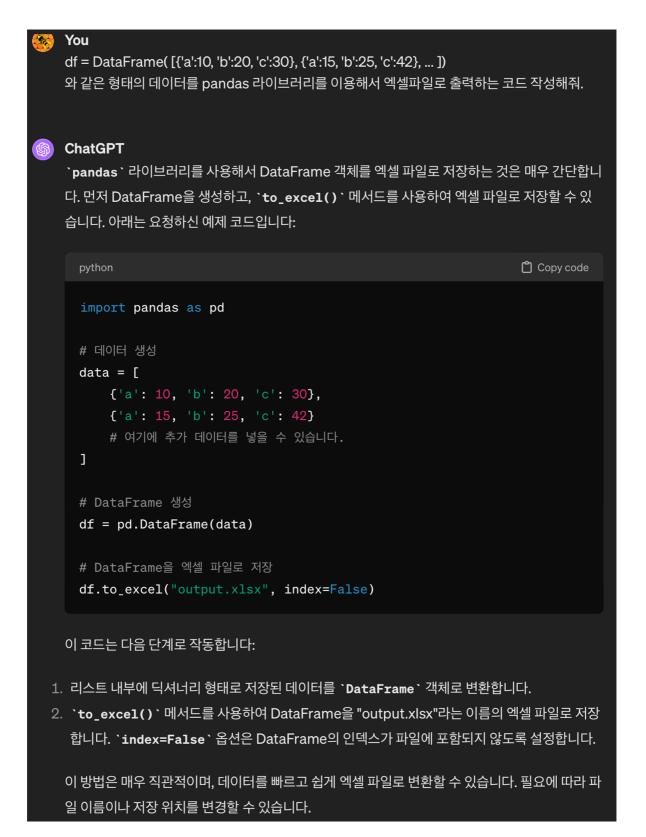
2-3. 데이터를 엑셀파일에 쓰기(pandas.DataFrame)

2-3-1. ChatGPT 질의

You
df = DataFrame([{'a':10, 'b':20, 'c':30}, {'a':15, 'b':25, 'c':42}, ...])
와 같은 형태의 데이터를 pandas 라이브러리를 이용해서 엑셀파일로 출력하는 코드 작성해줘.

ChatGPT
`pandas` 라이브러리를 사용해서 DataFrame 객체를 엑셀 파일로 저장하는 것은 매우 간단합니다. 먼저 DataFrame을 생성하고, `to_excel()` 메서드를 사용하여 엑셀 파일로 저장할 수 있습니다. 아래는 요청하신 예제 코드입니다:

```python
import pandas as pd

# 데이터 생성
data = [
    {'a': 10, 'b': 20, 'c': 30},
    {'a': 15, 'b': 25, 'c': 42}
    # 여기에 추가 데이터를 넣을 수 있습니다.
]

# DataFrame 생성
df = pd.DataFrame(data)

# DataFrame을 엑셀 파일로 저장
df.to_excel("output.xlsx", index=False)
```

이 코드는 다음 단계로 작동합니다:

1. 리스트 내부에 딕셔너리 형태로 저장된 데이터를 `DataFrame` 객체로 변환합니다.
2. `to_excel()` 메서드를 사용하여 DataFrame을 "output.xlsx"라는 이름의 엑셀 파일로 저장합니다. `index=False` 옵션은 DataFrame의 인덱스가 파일에 포함되지 않도록 설정합니다.

이 방법은 매우 직관적이며, 데이터를 빠르고 쉽게 엑셀 파일로 변환할 수 있습니다. 필요에 따라 파일 이름이나 저장 위치를 변경할 수 있습니다.

2-3-2. 데이터 SELECT한 후 엑셀파일로 출력하기

```python
import pandas as pd
from connector import Connector

with Connector() as conn:
    query = """
        SELECT * FROM cashflow_tbl
        WHERE dw_date BETWEEN '2024-02-01' AND '2024-02-29';
    """
    conn.cursor.execute(query)
    result_df = conn.cursor.fetchall()
    result_df = pd.DataFrame(result)
```

```python
result_df.to_excel("data_select2.xlsx", index=False)
```

```python
import pandas as pd
from connector import Connector
```