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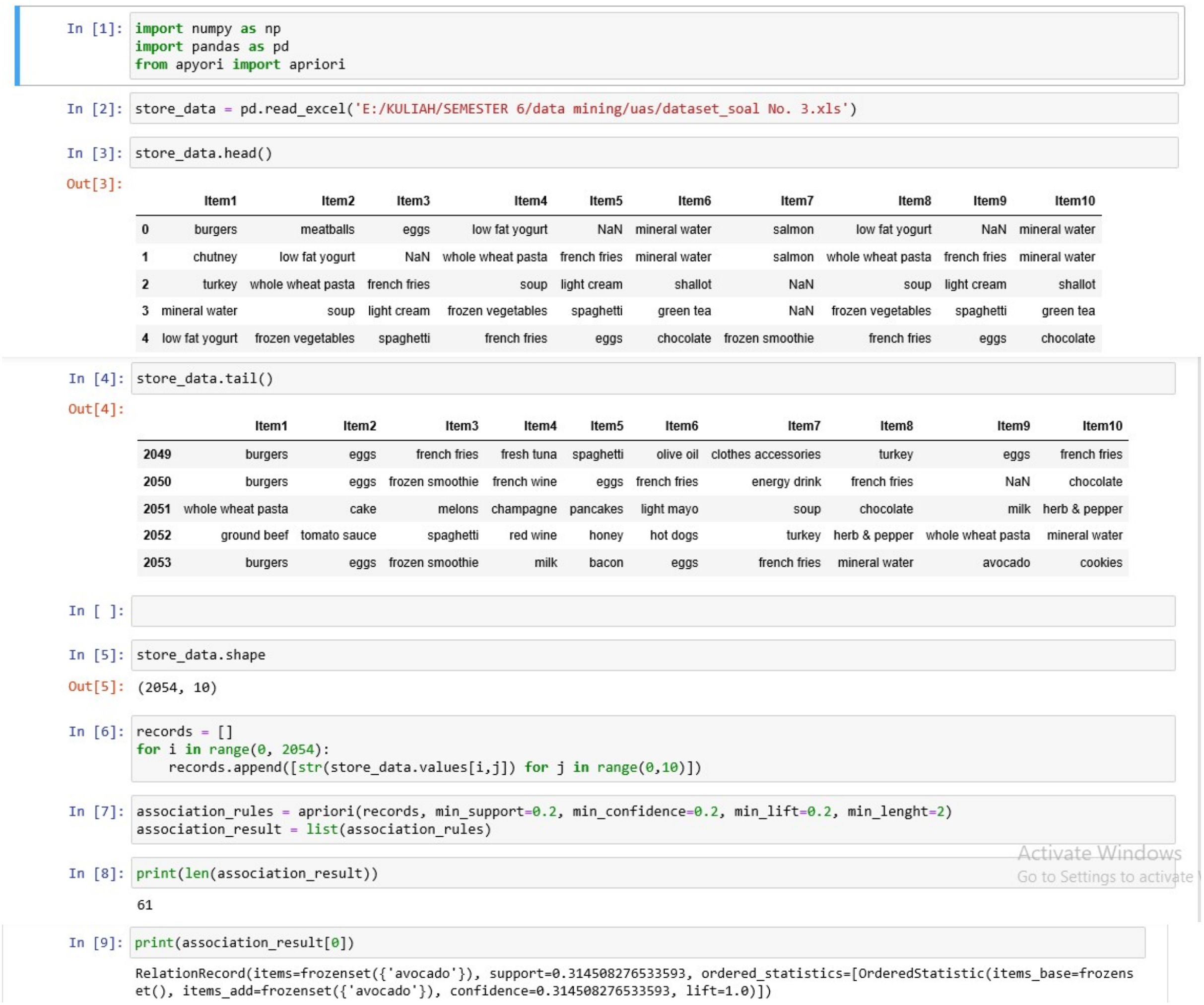
NIM :17.51.0004

3. Jawaban No 3



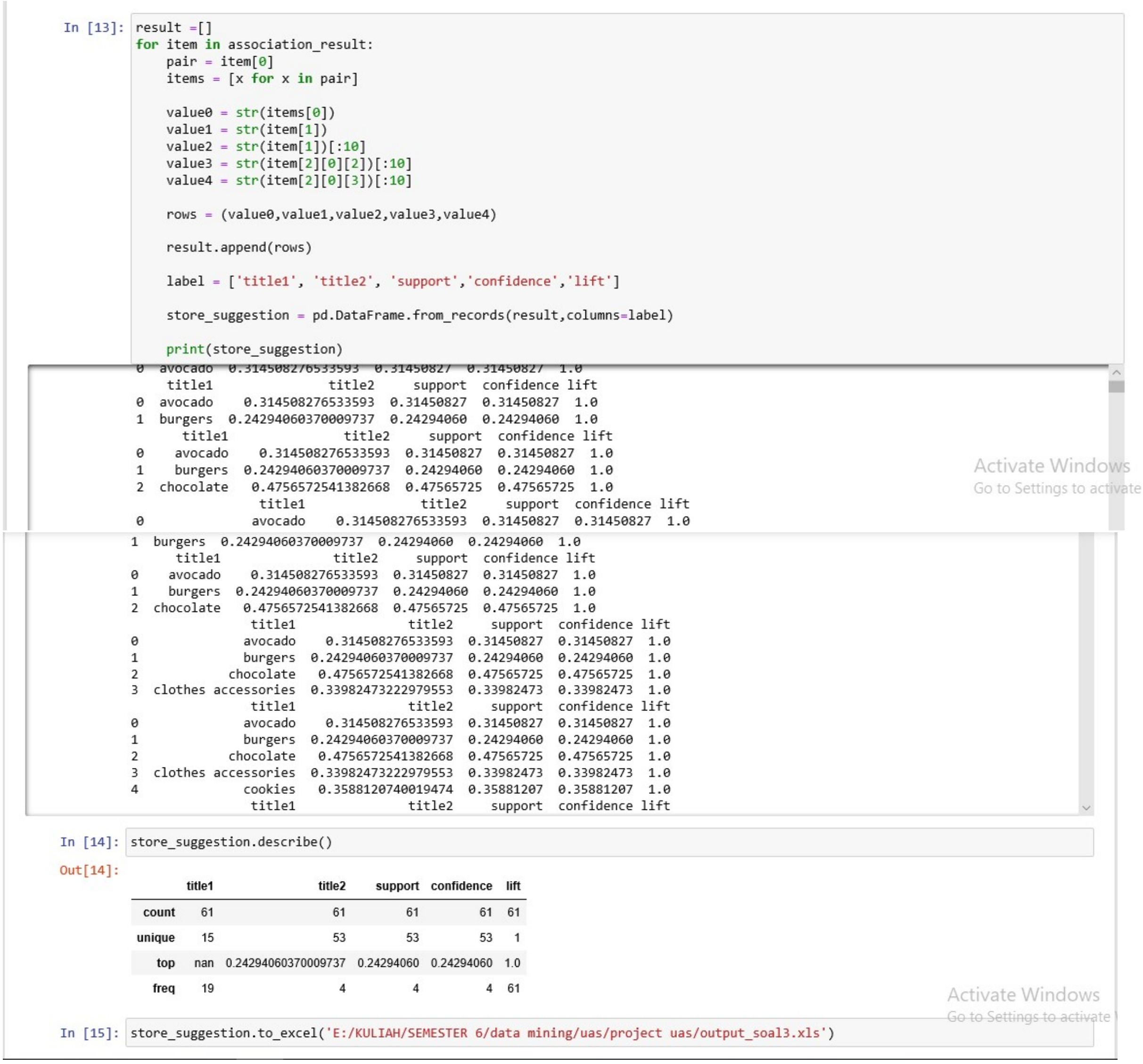
```
In [1]: import numpy as np
        import pandas as pd
        from apyori import apriori

In [2]: store_data = pd.read_excel('E:/KULIAH/SEMESTER 6/data mining/uas/dataset_soal No. 3.xls')

In [3]: store_data.head()

Out[3]:
```

	Item1	Item2	Item3	Item4	Item5	Item6	Item7	Item8	Item9	Item10
0	burgers	meatballs	eggs	low fat yogurt	NaN	mineral water	salmon	low fat yogurt	NaN	mineral water
1	chutney	low fat yogurt	NaN	whole wheat pasta	french fries	mineral water	salmon	whole wheat pasta	french fries	mineral water
2	turkey	whole wheat pasta	french fries	soup	light cream	shallot	NaN	soup	light cream	shallot
3	mineral water	soup	light cream	frozen vegetables	spaghetti	green tea	NaN	frozen vegetables	spaghetti	green tea
4	low fat yogurt	frozen vegetables	spaghetti	french fries	eggs	chocolate	frozen smoothie	french fries	eggs	chocolate

```
In [4]: store_data.tail()

Out[4]:
```

	Item1	Item2	Item3	Item4	Item5	Item6	Item7	Item8	Item9	Item10
2049	burgers	eggs	french fries	fresh tuna	spaghetti	olive oil	clothes accessories	turkey	eggs	french fries
2050	burgers	eggs	frozen smoothie	french wine	eggs	french fries	energy drink	french fries	NaN	chocolate
2051	whole wheat pasta	cake	melons	champagne	pancakes	light mayo	soup	chocolate	milk	herb & pepper
2052	ground beef	tomato sauce	spaghetti	red wine	honey	hot dogs	turkey	herb & pepper	whole wheat pasta	mineral water
2053	burgers	eggs	frozen smoothie	milk	bacon	eggs	french fries	mineral water	avocado	cookies

```
In [ ]: 

In [5]: store_data.shape

Out[5]: (2054, 10)

In [6]: records = []
        for i in range(0, 2054):
            records.append([str(store_data.values[i,j]) for j in range(0,10)])

In [7]: association_rules = apriori(records, min_support=0.2, min_confidence=0.2, min_lift=0.2, min_lenght=2)
        association_result = list(association_rules)

In [8]: print(len(association_result))

        61

In [9]: print(association_result[0])

        RelationRecord(items=frozenset({'avocado'}), support=0.314508276533593, ordered_statistics=[OrderedStatistic(items_base=frozens
        et(), items_add=frozenset({'avocado'}), confidence=0.314508276533593, lift=1.0)])
```



In [13]:
```python
result =[]
for item in association_result:
    pair = item[0]
    items = [x for x in pair]

    value0 = str(items[0])
    value1 = str(item[1])
    value2 = str(item[1])[:10]
    value3 = str(item[2][0][2])[:10]
    value4 = str(item[2][0][3])[:10]

    rows = (value0,value1,value2,value3,value4)

    result.append(rows)

    label = ['title1', 'title2', 'support','confidence','lift']

    store_suggestion = pd.DataFrame.from_records(result,columns=label)

    print(store_suggestion)
```

```
0  avocado  0.314508276533593  0.31450827  0.31450827  1.0
     title1               title2     support  confidence lift
0  avocado   0.314508276533593  0.31450827  0.31450827  1.0
1  burgers  0.24294060370009737  0.24294060  0.24294060  1.0
      title1               title2     support  confidence lift
0    avocado   0.314508276533593  0.31450827  0.31450827  1.0
1    burgers  0.24294060370009737  0.24294060  0.24294060  1.0
2  chocolate   0.4756572541382668  0.47565725  0.47565725  1.0
           title1               title2     support  confidence lift
0         avocado   0.314508276533593  0.31450827  0.31450827  1.0
```

```
1  burgers  0.24294060370009737  0.24294060  0.24294060  1.0
      title1               title2     support  confidence lift
0    avocado   0.314508276533593  0.31450827  0.31450827  1.0
1    burgers  0.24294060370009737  0.24294060  0.24294060  1.0
2  chocolate   0.4756572541382668  0.47565725  0.47565725  1.0
               title1               title2     support  confidence lift
0             avocado   0.314508276533593  0.31450827  0.31450827  1.0
1             burgers  0.24294060370009737  0.24294060  0.24294060  1.0
2           chocolate   0.4756572541382668  0.47565725  0.47565725  1.0
3  clothes accessories  0.33982473222979553  0.33982473  0.33982473  1.0
               title1               title2     support  confidence lift
0             avocado   0.314508276533593  0.31450827  0.31450827  1.0
1             burgers  0.24294060370009737  0.24294060  0.24294060  1.0
2           chocolate   0.4756572541382668  0.47565725  0.47565725  1.0
3  clothes accessories  0.33982473222979553  0.33982473  0.33982473  1.0
4             cookies   0.3588120740019474  0.35881207  0.35881207  1.0
               title1               title2     support  confidence lift
```

In [14]:
```python
store_suggestion.describe()
```

Out[14]:

	title1	title2	support	confidence	lift
count	61	61	61	61	61
unique	15	53	53	53	1
top	nan	0.24294060370009737	0.24294060	0.24294060	1.0
freq	19	4	4	4	61

In [15]:
```python
store_suggestion.to_excel('E:/KULIAH/SEMESTER 6/data mining/uas/project uas/output_soal3.xls')
```