**Chương trình mapreduce (2 jobs)**

**- Mapper  
+ avg\_price\_mapper.py**

import sys

import json

for line in sys.stdin:

try:

record = json.loads(line)

price = float(record.get('price', 0))

print(f"price\t{price}\t1")

except:

continue

+ avg\_rating\_mapper.py

import sys

import json

for line in sys.stdin:

try:

record = json.loads(line)

rating = float(record.get("rating", 0))

print(f"avg\_rating\t{rating}")

except:

continue

* Reducer

+ avg\_price\_reducer.py

import sys

total\_price = 0.0

count = 0

for line in sys.stdin:

try:

key, price, cnt = line.strip().split('\t')

price = float(price)

cnt = int(cnt)

total\_price += price

count += cnt

except:

continue

if count > 0:

print(f"Average\_Price\t{total\_price/count:.2f}")

else:

print("Average\_Price\t0")

+ avg\_rating\_reducer.py

import sys

total\_rating = 0

count = 0

for line in sys.stdin:

key, value = line.strip().split('\t')

total\_rating += float(value)

count += 1

if count > 0:

print(f"Average Rating: {total\_rating / count:.2f}")

else:

print("No valid ratings")