//Bài 1b

* Tổng hợp cục bộ

Class MAPPER

Method Map(id docId, line ln)

H 🡨 new ASSOCIATIVEARRY()

Arr 🡨 ln.split(“,”)

l 🡨 arr[0]

min 🡨StringtoInt(arr[1])

H{l} 🡨 H{l} + min

for all link l ε H do

Emit(link l, minute H{l})

Class REDUCE

Method Reduce(link l, minutes[m1, m2, …])

Sum 🡨 0

for all minute m ε minutes[m1, m2, ... ] do

sum += m;

Emit(link 1, minute sum);

* Duy trì trạng thái biến nhớ:

Method INITIALIZE:

H <- new ASSOCIATIVEARRAY()

Method Map( id I, line In)

arr <- In.split(",")

1 <- arr[0]

min <- StringtoInt(arr[1])

H{1} <- H{1} + min

Method CLOSE

for all link 1 E H do

Emit (link 1, minute H{1})

Class REDUCE

Method Reduce(link l, minutes[m1, m2, …])

Sum 🡨 0

for all minute m ε minutes[m1, m2, ... ] do

sum += m;

Emit(link 1, minute sum);

//Bài 2b

* Tổng hợp cục bộ

Class MAPPER

Method Map( id I, line ln)

H 🡨 new ASSOCIATIVEARRAY()

arr 🡨 In.split(",")

price 🡨 (int) arr[2]

quantity 🡨 (int) arr[3]

revenue 🡨 price\*quantity

H{1} 🡨 H{1} + revenue

for all link 1 ε H do

Emit (CustomerID c, revenue H{1})

Class REDUCE

Method Reduce(CustomerID c, revenues [r1, r2, ... ]):

sum 🡨 0

for all revenue r E revenues[m1, m2, ... ] do

sum += r;

Emit(CustomerID c, revenue sum);

* Duy trì trạng thái biến nhớ

Method INITIALIZE:

H <- new ASSOCIATIVEARRAY()

Method Map( id I, line In)

arr 🡨 In.split(",")

price 🡨 (int) arr[2]

quantity 🡨 (int) arr[3]

revenue 🡨 price\*quantity

H{1} 🡨 H{1} + revenue

Method CLOSE

for all link 1 ε H do

Emit (CustomerID c, revenue H{1})

Class REDUCE

Method Reduce(CustomerID c, revenues [r1, r2, ... ]):

sum 🡨 0

for all revenue r E revenues[m1, m2, ... ] do

sum += r;

Emit(CustomerID c, revenue sum);

//Bài 8

* Tổng hợp cục bộ

Class MAPPER

Method MAP(polygonId I, polygon p)

H 🡨 new ASSOCIATIVEARRAY()

for all edge e ε polygon p do

H{e} 🡨 H{e} + 1

for all edge e ε H do

EMIT(edge e, count H{e})

class REDUCER

method REDUCE(edge e, counts[c1, c2, ... ])

sum 🡨 0

for all count c E counts[c1, c2, ... ] do

sum 🡨 sum + c

EMIT(edge e, sum)

* Duy trì trạng thái biến nhớ

Class MAPPER

Method INITIALIZE:

H <- new ASSOCIATIVEARRAY()

Method MAP(polygonId I, polygon p)

for all edge e ε polygon p do

H{e} 🡨 H{e} + 1

Method CLOSE

for all edge e ε H do

EMIT(edge e, count H{e})

class REDUCER

method REDUCE(edge e, counts[c1, c2, ... ])

sum 🡨 0

for all count c E counts[c1, c2, ... ] do

sum 🡨 sum + c

EMIT(edge e, sum)