

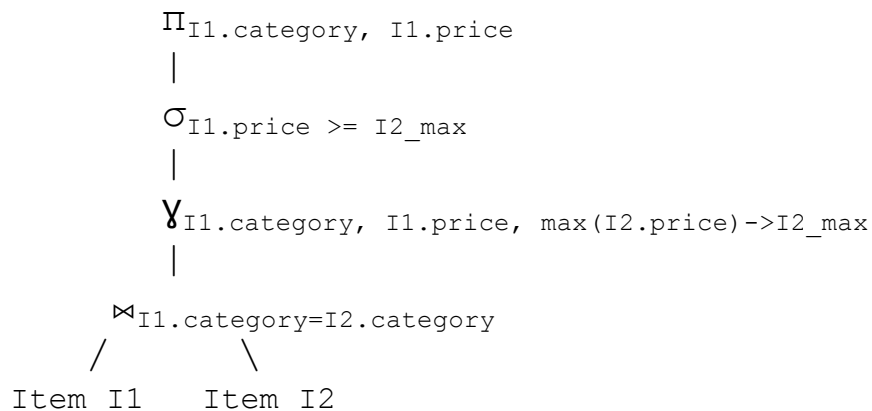
CSE 344 Section 5 Worksheet

Item(iid, category, price)

1. Write a logical query plan (i.e., draw a tree) that is equivalent to the SQL query below:

```
SELECT I.category, COUNT(*)
FROM Item I
WHERE I.price > 10
GROUP BY I.category;
```

2. Write a SQL query that is equivalent to the logical query plan below:



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```
Actor(aid, fname, lname, age)
ActsIn(aid, mid)
Movie(mid, name, budget, gross)
```

Given the above schema, convert the following SQL queries into logical RA plans:

```
3. SELECT M.name, COUNT(*) AS cnt
   FROM Actor AS A, ActsIn In AS AI, Movie AS M
  WHERE A.aid = AI.aid AND M.mid = AI.mid
        AND A.age < 30
   GROUP BY M.mid, M.name
  HAVING COUNT(*) > 1;
```

```
4. SELECT A.aid
   FROM Actor AS A
  WHERE NOT EXISTS (
    SELECT *
    FROM ActsIn AS AI, Movie AS M
   WHERE AI.mid = M.mid AND AI.aid = A.id
        AND M.name = "Star Wars"
  );
```

(Hint: Is this query correlated?)

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1. Estimate the cardinality at **each stage** of the query plan below based on the following information about a library system:

Students(sid, name, age)
Books(bid, title, author)
Checkout(sid, bid, date)

T(S) = 10,000
T(B) = 30,000
T(C) = 150,000

V(B, author) = 500

Student ages are in the range: $5 \leq \text{age} \leq 25$

