(Solution to be uploaded individually to the folder shared with you. Please do not mail with any attached file.
Assignment due date: 4th April, Saturday.)

The following relations keep track of airline flight information:

Flights(flno: integer, from: string, to: string, distance: integer, departs: time, arrives: time, price: integer)
Aircraft(aid: integer, aname: string, cruisingrange: integer)
Certified(eid: integer, aid: integer)
Employees(eid: integer, ename: string, salary: integer)

(Note that the Employees relation describes pilots and other kinds of employees as well; every pilot is certified for some aircraft, and only pilots are certified to fly.)

Write each of the following queries in Relational algebra.

1. Find the names of aircraft such that all pilots certified to operate them earn more than Rs. 80,000.
2. For each pilot who is certified for more than three aircraft, find the eid and the maximum cruisingrange of the aircraft for which she or he is certified.
3. Find the names of pilots whose salary is less than the price of the cheapest route from Los Angeles to Honolulu.
4. For all aircraft with cruisingrange over 1000 miles, find the name of the aircraft and the average salary of all pilots certified for this aircraft.
5. Find the names of pilots certified for some Boeing aircraft.
6. Find the aids of all aircraft that can be used on routes from Los Angeles to Chicago.
7. Print the enames of pilots who can operate planes with cruisingrange greater than 3000 miles but are not certified on any Boeing aircraft.
8. A customer wants to travel from Madison to New York with only one intermittent connected flight. List the possible flight choices.
9. Print the name and salary of every nonpilot whose salary is more than the average salary for pilots.
10. Print the names of employees who are certified only on aircrafts with cruising range longer than 1000 miles.