1 SQL tables and queries (3 parts, 10p)

A database system used by a company's personnel department has the following relations:

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Employees(empId, name, year, salary, entitlement, branch)
ParentalLeave(employee, startDay, startYear, endDay, endYear)
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Employee identifiers (empId) are unique. Attribute year is the employee's year of birth. Attribute entitlement is the number of annual vacation days to which the employee is entitled. Employees have 30 days of annual vacation entitlement by default. Branch is the name of the city where the branch is located (assume that there is only one branch in each city). The personnel department keeps a record of all periods of parental leave taken by employees. The attributes startDay and endDay are integers in the range 1-366 that represent the day within the year. For each period of parental leave, the start date must be before the end date.

3a. Suggest keys and references for these relations. Write SQL statements that create these relations with reasonable constraints in PostgreSQL. (4p)

3b. Show an SQL query to get the amount of employees per branch that have/had parental leave spanning a period in two different calendar years (this means startYear and endYear are not the same). Example output row if the Stockholm branch has had 3 such employees: (`'Stockholm', 3`). (3p)

3c. Show an SQL query to get the branch name and average of salaries in that branch, for those branches that only have employees born after 1987. Sort the output by average salary. Do not show information about branches that have employees born in or before 1987. (3p)