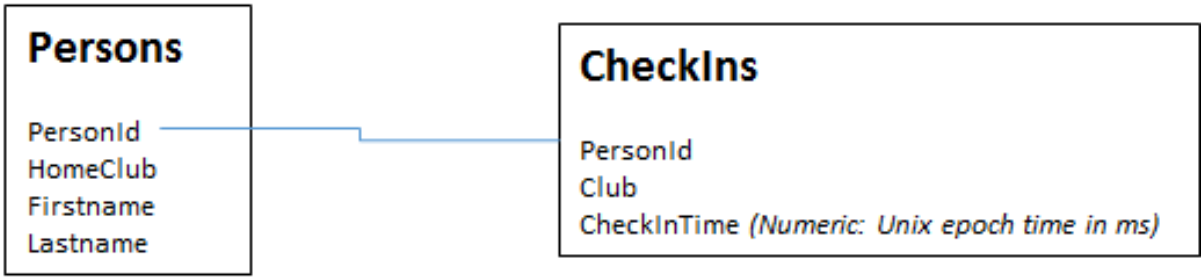
1. SQL tests: 2 x 30 minutes.

When members (table Persons) are visiting a club the system registers a “CheckIn” and store an entry in the below check-in table (CheckIns).

Data model:



Definitions:

- Persons.PersonId: Primary key identifying the person. Used as Foreign Key in the CheckIns table to find all the checkins of that person.
- Persons.HomeClub: club where the member is registered and has his membership. Members can use their membership in any club.
- CheckIns.Club: club where the member did his check-in. The club can be different than the Persons.HomeClub when the Person is visiting another club than it’s own club.
- CheckIns.CheckInTime: the time at which the member visited a club.

The tables have the following volumes:
Persons: 2 millions
Check-Ins: 100 millions
Check-ins by day: 30.000 - 100.000

Write two optimized queries returning the following information:

- **Problem 1**: Knowing that members are allowed to go to any gym nationwide, our client wants to have a report indicating, for each club, how many visits to the clubs are made by members registered in this club (as Defined in Persons.HomeClub) and how many visits are made by members registered in other clubs in the last 6 months.

  Write the SQL query making it possible to produce a report with the following columns

Club Id	Checkins from members registered in this club	Checkins from members registered in **other** clubs
101	4500	3000
102	2000	200

- **Problem 2**: The marketing department of our client wants to send a congratulation email the day after a member has been visiting the chain for 100 times.

  Please suggest a SQL query returning this list. This query will be then run automatically once a day and emails will be sent based on the output. It is important that the member only gets the email once and only once, the day they reach their 100th visit.
  As a matter of simplicity, we will assume that a member can only visit the gym once per day.