Challenge 1:

Background:
While booking a hotel, there are many restrictions or limitations like maximum number of guests or maximum adults allowed in one room etc. It's programmer's job to translate these restrictions to website/app visitors while booking a hotel room online.

Problem:
In Hotel Transylvania, each room can only accommodate a maximum of

- 3 adults
  AND
- 3 children
  AND
- 3 infants

- In one booking, maximum guests can be 7(excluding infants)
- No room will have only children or infants (i.e without at least one adult supervision)
- Per booking maximum number of rooms will be only 3
- If guests are either greater than 7(excluding infants) or rooms are greater than 3, the booking will be rejected.

Problem:
Write a program to input number of adults, children and infants to output the mapping of pax per room. Optimise number of rooms to keep it to minimum.

For example:

For 3 Adults, 4 Children and 2 infants can be fit in 2 rooms and not 3.

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Challenge 2:

Given a database table “LeaveCalendar” that store all the staff’s leaves in the following format

Employee_Name	Leave_Type	Start	End
Elfriede Medders	Annual	2019-07-01	2019-07-10
Cher Mandel	Sick	2019-07-01	2019-07-02
Albert Wager	Annual	2019-07-04	2019-07-09
Terese Grenier	Maternity	2019-07-08	2019-10-08
Wally Abercrombie	Annual	2019-07-09	2019-07-11
Kraig Duffel	Sick	2019-07-15	2019-07-16
Billi Cavitt	Annual	2019-07-10	2019-07-19

Create a SQL query that accept @Period_Start and @Period_End to list down all the employees and leave type that are absent during these periods. For example:

@Period_Start = “2019-07-08” and @Period_end = “2019-07-12” will return:

Employee_Name	Leave_Type
Elfriede Medders	Annual
Albert Wager	Annual
Terese Grenier	Maternity
Wally Abercrombie	Annual
Billi Cavitt	Annual