The scenario:

You are a developer who must code a solution for a travel agency company which manages bookings for clients. Each booking can consist of one or more days, and each day has one or more activities planned for it. Each activity has an activity provider which is a third party that conducts these activities.

Tasks:

1. **(Mandatory)** Create a new model for activities. Each ‘Activity’ should be linked to a ‘Day’ and an ‘ActivityProvider. Each activity will also need to store the name of the activity (e.g., “30-minute laser skirmish 5 a side”).
2. **(Mandatory)** Create an entity relationship diagram for each of the models (including the one created under task 1). Make sure the diagram includes crows foot notation, so it is clear if it is a many to one, or many to many relationship.   
   (This can be submitted as a Visio or image file).
3. **(Mandatory)** Create a function which will set the xre\_startdate and xre\_enddate fields against the BookingModel. First you will need to get all the DayModels which have the same xre\_bookingrecordid as the BookingModels primary key. Then you can manipulate this list to obtain the start and end date.
4. **(Optional)** Create a function which will count the number of activities which are against each day for a booking. The final count should be saved against the days xre\_activitycount field.
5. **(Optional)** Create a function which will output the activity providers name, address, and contact number to JSON for each activity against a given booking (without duplicates).