Objective:

Learn how to use EF Core to aggregate over databases. Practice LINQ as part of work with EF.

Theory:

- https://docs.microsoft.com/en-us/ef/core/querying/
- https://docs.microsoft.com/en-us/ef/core/change-tracking/
- https://docs.microsoft.com/en-us/ef/core/change-tracking/explicit-tracking
- https://www.entityframeworktutorial.net/efcore/entity-framework-core.aspx
- https://stackoverflow.com/questions/54274166/how-does-ef-core-modified-entity-state-behave

Task:

Deadline: 3-4 days

Requirements:

- Build queries on top of your code-first console application.
- Implement the same 5 queries from stage 3.3 but querying DB with EF Core. Ignore view table requirement for last function.
- All queries should be executed in two mods: Lazy loading and Eager loading. Be ready to show generated by EF sql script and explain the difference.
- Execute one update request with disconnected scenario using Explicit Tracking and Entity State update.
- No need to create a menu, you can call them all on startup with hardcoded arguments.

Starting from now we use our code-first project as a basis for all future work. Later it will be converted to a web application that we will improve on each stage.

Answer all of these questions to be prepared:
1. What are different approaches to load related data in EF Core? What are the use-cases for all of them?
2. What is client vs server evaluation? What are the common cases when EF performs evaluations on the client side and what problems can client evaluation bring?
3. What are tracking and no-tracking queries? What is the reason behind tracking queries? What are the use-cases not to track entities? How to track entities explicitly from code?
4. What is the N+1 query problem and how would you solve it?
5. What is the "Cartesian Explosion" problem and how would you solve it?
6. Why would you need to declare your navigation properties as virtual? What is the technical explanation behind this?
7. What are connected and disconnected scenarios? What is the use-case for disconnected scenarios and how to work with it properly?