Task D1

Create an ER-diagram for the schema defined per task **X2**.
Express as many restrictions as possible via the domain constraints and relation cardinalities.

Task D2

Define the relational model for the schema defined per task **X2**.
Express as many restrictions as possible via the domain, uniqueness, and foreign key constraints. Carefully choose whether to permit or prohibit the NULL values for each attribute.

Task D3

Write a program that loads the data from task X2 into a PostgreSQL database with the schema defined in task **D2.**

1. The import should be performed in 2 phases: streaming phase and normalization phase.
2. The streaming phase should **not** buffer the data in memory. Rely on the SAX parser to avoid scanning the whole document before injecting the data into the database.
3. Streaming phase must support multiple simultaneous threads. The number of threads to use - N - should be a program runtime parameter.
4. Split the file into N segments of approximately the same size:
    a. Guess the section points by dividing the file length by N
    b. Adjust the section points as necessary to avoid splitting the <person> elements\It is recommended to rely on a “temporary” database schema with little or no restrictions during the streaming phase - to avoid foreign-key lookup failures.
5. The normalization phase should be performed via SQL statements over the data imported by the streaming phase.
   It should enforce all the constraints defined in the target database schema.
6. Consider creating some indexes on the “raw” imported data on the early steps of the normalization phase, to speed up the lookups during normalization.