1. **What database models do you know?**

* tree
* graph
* relational DB
* non-relational DB/Object-oriented/

1. **Which are the main functions performed by a Relational Database Management System (RDBMS)?**
   * Create/change/delete/ tables and relation between them

* Add/change/delete/search and retrieve data stored in tables
* Support SQL language
* Transaction management

1. **Define what is "table" in database terms.**

* Data arranged in columns and rows
* All rows have the same structure
* Columns have name and type

1. **Explain the difference between a primary and a foreign key.**

* Primary key is an unique identifier for a record
* Foreign key is an identifier for relation of a record located in another table

1. **Explain the different kinds of relationships between tables in relational databases.**

* One –to-many /one country for many cities /
* Many-to-many /many products in many stores/
* One-to-one /human-student used to model inheritance/

1. **When is a certain database schema normalized? What are the advantages of normalized databases?**

* Fast search/update/sort and index creation
* DB Integrity / Prevent duplicate content and no redundant data/
* Improved concurrency resolution/table locks will affect less data/

1. **What are database integrity constraints and when are they used?**

* database integrity constraints are some rules that constraints the data
* there are used when the table is created and after that

1. **Point out the pros and cons of using indexes in a database.**

* Speed up search
* Slow add/delete record

1. **What's the main purpose of the SQL language?**

* DDL data definition language
* DML data manipulation language

1. **What are transactions used for? Give an example.**

* To prevent incorrect data result during concurrent changes over a single unit
* Example banking transactions

1. **What is a NoSQL database?**

* It is a non-relational DB

1. **Explain the classical non-relational data models.**

* Schema-free
* Support indexing and querying
* Support concurrency and transaction
* High scalability

1. **Give few examples of NoSQL databases and their pros and cons.**

* Data stored as documents with no fixed structure
* Pros - easy to read/write and light, directly corresponds to basic data types of most script languages
* Cons – it is encapsulated and have to break it into individual objects /doesn’t distinguish floating and decimal, doesn’t have a binary type/