Database Design

Table: **rate**
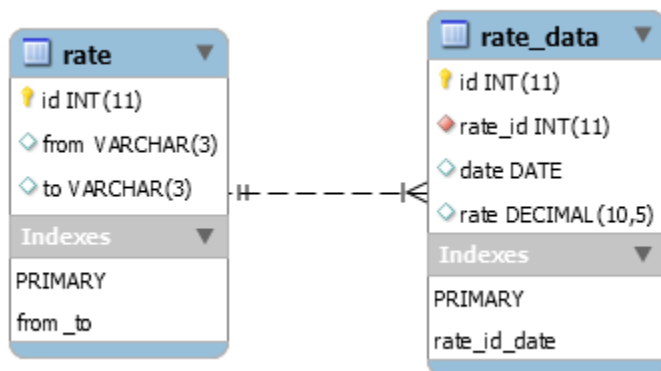
Field Name	Type	Size	Primary Key
id	INT	11	Yes
from	VARCHAR	3	
to	VARCHAR	3	

Table **rate_data**

Field Name	Type	Size	Primary Key
id	INT	11	Yes
rate_id	INT	11	
date	DATE		
rate	NUMERIC	20, 5	

Database Relation

Using one to many relationship to describe the relation, one **rate** can have many exchange **rate data**

Fields

Field **from** and **to**, limited to only 3 character, as for International Standard ISO 4217 for currency designator

For **rate** field, instead of Float or Double, Decimal is better to handle monetary data and to prevent data truncation.

Indexes

While both tables is indexed with auto increment primary key (id), an unique index (**from_to**) is required to prevent duplication, because by *requirement*, input fields **from** and **to** are used to create or delete from **rate** table.

As well as **rate_data** table, from and to are used to insert new exchange rate data, so we indexed it with unique **rate_id** and **date**, so when new data by the same **rate** and **date** inserted, it will just update it with the new rate value.