Assumptions

* 1 study can have multiple samples.
* 1 sample is belong to 1 study.
* 1 sample is collected from 1 location.
* 1 location can have multiple samples.
* 1 sample can have 1 or more accessions.
* 1 accession can be linked only with 1 sample.
* 1 sample can have multiple replicates.
* 1 replicate is belong to 1 sample.
* One drug has many drug attributes/drug resistance data

ER - Diagram

**countrys**

**accessions**

m 1

**has**

**has**

1 m

1 m m 1

**locations**

**has**

**samples**

**has**

**studys**

**has**

1

m

**sample**\_**replications**

1 m

**drug\_resistance\_data**

**has**

**drugs**

m

**has**

1

**tb\_genetic\_locus**

Table Structure

Database: ***mtc\_db***

Table Name: ***studys***

|  |  |  |
| --- | --- | --- |
| **PK** | id | VARCHAR |
|  | name | VARCHAR |
|  | contact\_name | VARCHAR |
|  | contact\_email | VARCHAR |
|  | contact\_details | VARCHAR |

Table Name: ***countrys***

|  |  |  |
| --- | --- | --- |
| **PK** | id | INT (10) |
|  | name | VARCHAR |

Table Name: ***locations***

|  |  |  |
| --- | --- | --- |
| **PK** | id | INT (10) |
| FK | country\_id | INT (10) |
|  | City | VARCHAR |
|  | latitude | DECIMAL |
|  | longitude | DECIMAL |

Table Name: ***samples***

|  |  |  |
| --- | --- | --- |
| **PK** | id | VARCHAR |
| FK | study\_id | VARCHAR |
| FK | location\_id | INT (10) |

Table Name: ***sample\_replications***

|  |  |  |
| --- | --- | --- |
| **PK** | id | VARCHAR |
| FK | sample\_id | VARCHAR |

Table Name: ***accessions***

|  |  |  |
| --- | --- | --- |
| **PK** | id | VARCHAR |
| FK | sample\_id | VARCHAR |
| FK | sample\_replication\_id | VARCHAR |
|  | url\_1 | VARCHAR |
|  | url\_2 | VARCHAR |

Table Name: ***drugs***

|  |  |  |
| --- | --- | --- |
| **PK** | id | INT (4) |
|  | drug\_abbreviation | VARCHAR |
|  | drug\_name | VARCHAR |

Table Name: ***drug\_resistance\_data***

|  |  |  |
| --- | --- | --- |
| **PK** | id | INT (5) |
| FK | drug\_id | INT (4) |
| FK | tb\_genetic\_locus\_id | INT (4) |
|  | description | VARCHAR |
|  | start\_chr\_coord | INT (7) |
|  | stop\_chr\_coord | INT (7) |
|  | start\_gene\_coord | INT (4) |
|  | stop\_gene\_coord | INT (4) |
|  | nucleotide\_ref | VARCHAR |
|  | nucleotide\_alt | VARCHAR |
|  | start\_codon\_no | INT (3) |
|  | stop\_codon\_no | INT (3) |
|  | codon\_ref | VARCHAR |
|  | codon\_alt | VARCHAR |
|  | amino\_ref | CHAR |
|  | amino\_alt | CHAR |
|  | tbdreamdb | BOOLEAN |
|  | tbproflr | BOOLEAN |
|  | kvarq | BOOLEAN |
|  | hc | BOOLEAN |
|  | isValidate | BOOLEAN |
|  | references | VARCHAR |

Table Name: ***tb\_genetic\_locus***

|  |  |  |
| --- | --- | --- |
| **PK** | id | INT (4) |
|  | locus\_name | VARCHAR |
|  | locus\_tag | VARCHAR |
|  | URL | VARCHAR |