

SYSTEM DESIGN & DEVELOPMENT

1. Database Design:

An important aspect of system design is the design of data storage structure. To begin with a logical model of data structure is developed first. A database is a container object which contains tables, queries, reports and data validation policies enforcement rules or constraints etc. A logical data often represented as a records are kept in different tables after reducing anomalies and redundancies. The goodness of data base design lies in the table structure and its relationship.

This software project maintains a database named AMAN which contains the following tables

2. Table Design:

The database of INDIAN RAILWAY Bullet Train Reservation System contains 6 tables. The tables are normalized to minimize the redundancies of data and enforcing the validation rules of the organization. Most of the tables are designed to store master records. The tables and their structure are given below:

```
mysql> DESC BULLET_TRAIN_IRBT001;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| STN_NAME   | varchar(40)   | YES  |     | NULL    |       |
| ARR        | varchar(10)   | YES  |     | NULL    |       |
| DEP        | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

```
mysql> DESC BULLET_TRAIN_IRBT002;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| STN_NAME   | varchar(40)   | YES  |     | NULL    |       |
| ARR        | varchar(10)   | YES  |     | NULL    |       |
| DEP        | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.06 sec)
```

```
mysql> DESC BULLET_TRAIN_IRBT004;
```

Field	Type	Null	Key	Default	Extra
STN_NAME	varchar(40)	YES		NULL	
ARR	varchar(10)	YES		NULL	
DEP	varchar(10)	YES		NULL	

3 rows in set (0.02 sec)

```
mysql> DESC BULLET_TRAIN_IRBT005;
```

Field	Type	Null	Key	Default	Extra
STN_NAME	varchar(40)	YES		NULL	
ARR	varchar(10)	YES		NULL	
DEP	varchar(10)	YES		NULL	

3 rows in set (0.02 sec)

```
mysql> DESC BULLET_TRAIN_IRBT006;
```

Field	Type	Null	Key	Default	Extra
STN_NAME	varchar(40)	YES		NULL	
ARR	varchar(10)	YES		NULL	
DEP	varchar(10)	YES		NULL	

3 rows in set (0.15 sec)

```
mysql> DESC BULLETTRAIN_TICKET;
```

Field	Type	Null	Key	Default	Extra
TICKET_NO	varchar(20)	NO	PRI	NULL	
FROM_STN	varchar(40)	YES		NULL	
TO_STN	varchar(40)	YES		NULL	
DATE_OF_JOURNEY	date	YES		NULL	
TRAIN_NO	varchar(15)	YES		NULL	
CLASS	varchar(15)	YES		NULL	
PAX_1_NAME	varchar(80)	YES		NULL	
PAX_1_AGE	varchar(3)	YES		NULL	
PAX_1_GENDER	varchar(7)	YES		NULL	
PAX_1_UID	varchar(16)	YES		NULL	
PAX_2_NAME	varchar(80)	YES		NULL	
PAX_2_AGE	varchar(3)	YES		NULL	
PAX_2_GENDER	varchar(7)	YES		NULL	
PAX_2_UID	varchar(16)	YES		NULL	
PAX_3_NAME	varchar(80)	YES		NULL	
PAX_3_AGE	varchar(3)	YES		NULL	
PAX_3_GENDER	varchar(7)	YES		NULL	
PAX_3_UID	varchar(16)	YES		NULL	
PAX_4_NAME	varchar(80)	YES		NULL	
PAX_4_AGE	varchar(3)	YES		NULL	
PAX_4_GENDER	varchar(7)	YES		NULL	
PAX_4_UID	varchar(16)	YES		NULL	
TICKET_FARE	int(20)	YES		NULL	

23 rows in set (0.03 sec)