

INDIAN INSTITUTE OF INFORMATION
TECHNOLOGY BHOPAL



DATABASE MANAGEMENT SYSTEM

II YEAR, IV SEM

(Group Assignment)

Lab Coordinator: Dr. Aishwarya Anand

STUDENTS INVOLVED:-

SHUBH GUPTA (IT) - 20U03018

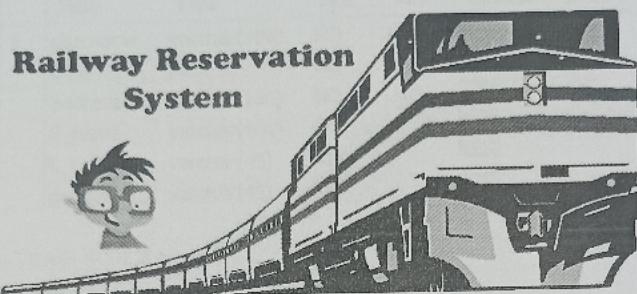
PIYUSH RAJ (IT) - 20U03029

SHASHANK KIRAR (ECE) - 20U01016

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SUBMITTED TO:- Dr. Aishwarya Anand

RAILWAY RESERVATION SYSTEM



--> The railway reservation system facilitates the railway authority to enquiry about the trains availability on the basis of source and destination, enquiry about the status of the booked ticket, passenger information etc.

The project contains information about train, types of seat available, ticket information, class and user's payment in form of table.

We have used the minimum number of table to reduce the complexity and decrease access time.

Total Number of Tables used – 06

SCHEMAS USED:-

1. USER SCHEMA

	Field	Type	Null	Key	Default	Extra
▶	username	varchar(100)	NO	PRI	HULL	
	DOB	date	NO		HULL	
	address	varchar(100)	NO		HULL	
	F_name	varchar(100)	NO		HULL	
	L_name	varchar(45)	YES		HULL	
	gender	varchar(45)	NO		HULL	

2. TRAIN SCHEMA

	Field	Type	Null	Key	Default	Extra
▶	train_no	int	NO	PRI	HULL	
	train_name	varchar(100)	YES		HULL	
	dept_time	varchar(45)	YES		HULL	
	distance	int	YES		HULL	
	seat_available	int	YES		HULL	
	source	varchar(100)	YES		HULL	
	arr_time	varchar(45)	YES		HULL	
	username	varchar(45)	YES	MUL	HULL	

3. CLASS SCHEMA

	Field	Type	Null	Key	Default	Extra
▶	dass_type	varchar(20)	NO	PRI	HULL	
	fare	int	YES		HULL	
	train_no	int	NO	PRI	HULL	

4. TICKET SCHEMA

	Field	Type	Null	Key	Default	Extra
▶	pnr_no	varchar(100)	NO	PRI	HULL	
	train_no	int	YES		HULL	
	date_time	varchar(450)	YES		HULL	
	user_name	varchar(45)	YES	MUL	HULL	
	class	varchar(45)	YES		HULL	
	source	varchar(45)	YES		HULL	
	destination	varchar(45)	YES		HULL	
	seat_no	int	YES		HULL	
	transaction_id	varchar(45)	YES	MUL	HULL	

5. PAYMENT SCHEMA

	Field	Type	Null	Key	Default	Extra
▶	transaction_id	varchar(100)	NO	PRI	HULL	
	bank	varchar(450)	YES		HULL	
	amount	int	YES		HULL	
	card_no	varchar(45)	YES		HULL	

MULTIVALUED ATTRIBUTE

	Field	Type	Null	Key	Default	Extra
▶	phn_no	varchar(50)	NO	PRI	HULL	
	username	varchar(45)	YES	MUL	HULL	

TABLE:-

USER TABLE:-

	username	DOB	address	F_name	L_name	gender
▶	bhanurajput	2001-12-05	jaipur	bhanu	rajput	m
	piyushraj	2002-07-07	patna	piyush	raj	m
	shashankirar	2002-04-13	gwalior	shashank	kirar	m
	shubhgupta	2002-06-01	gwalior	shubh	gupta	m
●	NULL	NULL	NULL	NULL	NULL	NULL

TRAIN:-

	train_no	train_name	dept_time	distance	seat_available	source	arr_time	username
▶	1	patnaexpress	20:00	600	500	bhopal	8:00	piyushraj
	2	shatabdi	3:00	400	600	bhopal	19:00	shubhgupta
	3	japurexpress	19:00	1000	10	bhopal	6:00	bhanurajput
	4	bhopalexpress	12:00	400	56	bhopal	6:00	shubhgupta
	5	gvaliorexpress	16:00	400	59	bhopal	23:00	shashankirar
●	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

TICKET:-

	pnr_no	train_no	date_time	user_name	class	source	destination	seat_no	transaction_id
▶	1056	2	3:00	shubhgupta	AC	bhopal	gwalior	45	5788
	1067	4	12:00	shubhgupta	AC	bhopal	gwalior	51	6788
	1085	1	20:00	piyushraj	AC	bhopal	patna	15	8567
	2568	5	16:00	shashankirar	AC	bhopal	gwalior	35	7348
●	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

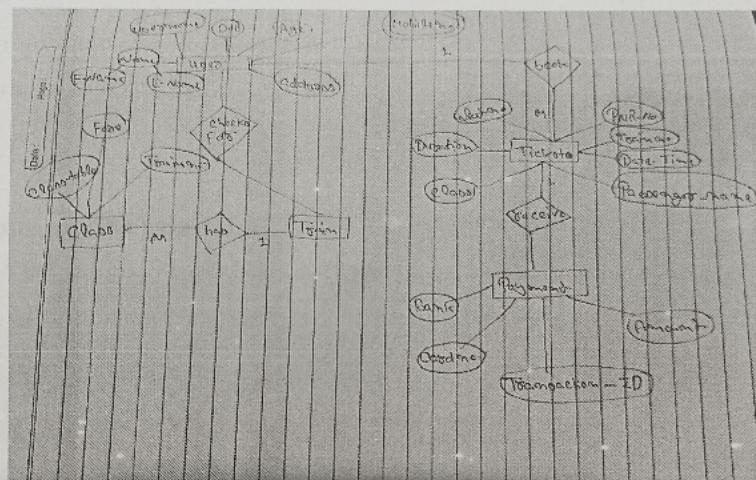
PAYMENT:-

	transaction_id	bank	amount	card_no
▶	5788	pnb	1000	7474
	6788	pnb	2500	5834
	7348	hdfc	500	6987
	8567	sbi	3000	1564
●	NULL	NULL	NULL	NULL

PHONE NUMBER(MULTIVALUED ATTRIBUTE):-

pin_no	username
9588956871	bhanurajput
7970404162	piyushraj
8374559162	piyushraj
6261364449	shashankkirar
7440628141	shubhgupta
HULL	HULL

ER DIAGRAM:



QUERIES:-

Q1 -> Find fair of all classes and class type of a train with train no. 5

```
SELECT fare, train.train_no, class_type FROM user, train, user, class WHERE train.train_no = class.train_no and train.train_no = 5;
```

fare	train_no	class_type
5000	5	AC
300	5000	5
500	5	5

2 -> find number of user checks for train.

```
SELECT count(username) FROM user, user;
```

count(username)
4

3 -> Find username and its pnr detail

```
SELECT user.username, pnr_no FROM user, ticket, user WHERE user.username = ticket.user.username;
```

user.username	pnr_no
pravishna	1085
shestamukherjee	2666
srividya	1056
shubhangita	1067

4 -> Find total amount collected by Railway System

```
SELECT sum(amount) FROM user, payment;
```

sum(amount)
7000

5 -> Find amount paid by user with transaction_id = 6788

```
SELECT user.username, amount FROM user, ticket, user, payment WHERE ticket.transaction_id = payment.transaction_id AND ticket.transaction_id = 6788;
```

user.username	amount
pravishna	2500

6 -> Find average fair of train in ascending order

```
select train_no, avg(fare) from user, class group by train_no order by fare;
```

7 -> Find seat no. and username which belongs to Gwalior

```
SELECT username,address,seat_no FROM user,user join user,ticket ON user.username = ticket.user_name
WHERE user.address = 'gwalior';
```

username	address	seat_no
shubhangita	gwalior	35
shubhangita	gwalior	45
shubhangita	gwalior	51

8 -> Find username whose seat no ends with 5

```
SELECT user_name,seat_no FROM user,ticket WHERE seat_no like "%5";
```

user_name	seat_no
studypal	45
prashant	15
gaganbector	35

9 -> find train name which have arrival time 3:00.

```
SELECT train_name FROM user,ticket WHERE train.train_no = ticket.train_no AND date_time = "3:00";
```

train_name
search

10->find which bank is preferred most for payment.

```
SELECT bank,COUNT(bank) FROM user,payment GROUP BY bank ORDER BY COUNT(bank) DESC;
```

bank	COUNT(bank)
prob	2
hdfc	1
sbi	1

SCOPE OF PROJECT:-

We will further work to create a UI for android, IOS and web User. Some more extra program like authorization and transaction management will be added to our project.
 Optimization of access time and storage will be improved with the help of efficient data structures and algorithm. We will add extra features like generating user report, route report, cancellation report etc in our project.
 Extra schema like route, workers, catering, user-registration, station will help to improve the project.

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