

(1)

Course Code - EBS1007
Slot \rightarrow B1

Name - Gaurav Singh
Reg No - 19BBS0026

Date - 15-05-20

(Q2)

Given:-

$R = (CSJDPAV)$

F.D $\rightarrow C \rightarrow SJDP \& V$

JP $\rightarrow C$

SD $\rightarrow P$

J $\rightarrow S$

To find :- minimal key.

Sol.

Step 1-

In R.H.S, should have single attribute,

$\Rightarrow C \rightarrow S$

$C \rightarrow J$

$C \rightarrow D$

$C \rightarrow P$

$C \rightarrow A$

$C \rightarrow V$

JP $\rightarrow C$

SD $\rightarrow P$

J $\rightarrow S$

②

Step 2 - In LHS, remove extraneous attributes.

$C \rightarrow S$

$C \rightarrow J$

$C \rightarrow D$

$C \rightarrow P$

$C \rightarrow C$

$C \rightarrow V$

$JP \rightarrow C \implies J^+, P^+$

$J^+ = \{ J, S, C, P \}$

and

$P^+ = \{ P, C, \}$

Remove P in the above FP

$J \rightarrow C$

11/2.

$SP \rightarrow P \implies S^+, D^+$

$S^+ = \{ S \}$

$D^+ = \{ D, P, C, S, V \}$

remove S from the above FP

$D \rightarrow P$

(3)

Name - Gaurav Singh

Reg No. - 19 BBS0026

Date - 15-03-20

\Rightarrow

$C \rightarrow S$ ✓
 $C \rightarrow J$ ✓
 $C \rightarrow D$ ✓
 $C \rightarrow P$ ✗
 $C \rightarrow a$ ✓
 $C \rightarrow v$ ✓
 $J \rightarrow C$ ✗
 $D \rightarrow P$ ✓

Step 3 - Eliminate the redundancy -

(i)

$C \rightarrow S$

find C

exist $C \rightarrow S$

S is not there
accepted ✓

$C = \{ J, D, P, a, v, \}$

(ii)

$C \rightarrow J$

find C

exist $C \rightarrow J$

$C = \{ S, P, P, v, a, \}$

J is not there accepted ✓

(iii)

$C \rightarrow D$

accepted.

(iv)

$C \rightarrow P$

Not accepted

$C = \{ S, J, D, a, v, P \}$

(v)

$C \rightarrow a$

accepted.

(vi)

\rightarrow

(9)

$J \rightarrow C$ not accepted, X

$J \rightarrow C, SP; P, P)$

$D \rightarrow P$ accepted ✓

Find \rightarrow

$C \rightarrow S$

$C \rightarrow J$

$C \rightarrow d$

$C \rightarrow a$

$C \rightarrow v$

$P \rightarrow P$

(5)

Name - Gaurav Singh
Reg No. - 19BBS0026

Date - 15-09-20

Q3-

S [RegNo, Sname, Test, empId, Enroll, Vene]

Insert anomalies -> occurs when certain attributes cannot be inserted into the database without presence of other attributes.

Delete anomalies -> exists when certain attributes are lost because of deletion of other attributes.

Update anomalies -> An update occurs when one or more instance of duplicated data is updated not all

Ex.

RegNo	Sname	Test	empId	Enroll	Vene
1	Gaurav	math	5	X	N
2	Ram	math	6	Y	P

empId	Enroll
5	X

Insertion:-

we can see that there is Ram having empId 6 but it is not in the table.

(b)

Deletion:

If someone decides to delete maths for Gaurav then he has to delete for Ram too.

Update:

If someone decides to update maths subject of Gaurav to English then he/she has to change to whole table.

Q5 Q7

Name- Gaurav Singh
Reg No- 19BBS00261

Date- 15-09-20

Q1-

Given:-

$R = \{ P, Q, R, S, T, U \}$

F.D:-
 $R \rightarrow P,$
 $RS \rightarrow T$
 $P \rightarrow Q$
 $S \rightarrow U$

Set The possible Candidate keys in above relation as $\{ P, RS, Q, U \}$

F.D in 3NF:-

FD $R \rightarrow P$

Attribute-

R, P

Attribute

$\boxed{R} \quad \boxed{P}$

FD

$\boxed{R \rightarrow P}$

F.D

$P \rightarrow Q$

Attribute

$\boxed{P} \quad \boxed{Q}$

F.D

$\boxed{P \rightarrow Q}$

(8)

F.D

$S \rightarrow U$

F.P

$R.S \rightarrow T$

Attributes

S U

F.D

$S \rightarrow U$

R S T

$S.R \rightarrow T$

(9)

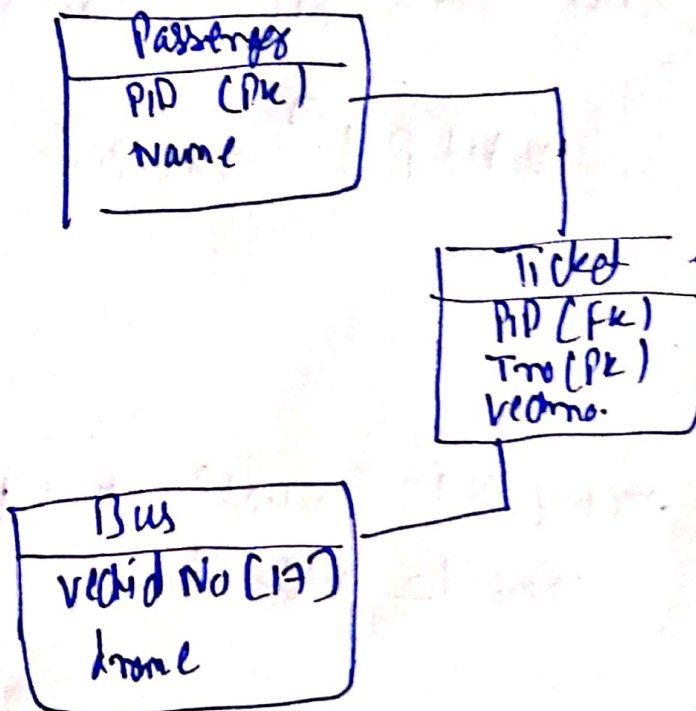
Name - Gaurav Singh
Reg No - 19BBS0026

Date - 15-09-20

Q4 -

Create Table (PID int, Pname varchar(20));

Create Table Ticket (PID int, Tno int,
Vehidno varchar(20));



(i)

(10)

1- Select name
from Bus

when vehid no = "3012", vehid no = 4022
vehid pid = name.pid.

2- Select name
from Bus.

when name = "3012", vehid no = "4022"

vehid pid = name.pid

3- Select pid
from bus

when name.pid = "JOHN" and
nameid = vehid pid.

4- Select name
from Bus

vehid no = 1012,

vehid pid = name.pid

5- Select name
from Bus.

when vehid no = "3012", vehid no = "4022"

vehid pid = name pid.