

RELATIONAL SCHEMA

```
-- Table structure for table `canc`
CREATE TABLE IF NOT EXISTS `canc` (
  `pnr` int(11) NOT NULL,
  `rfare` int(11) DEFAULT '0',
  PRIMARY KEY (`pnr`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Table structure for table `class`
CREATE TABLE IF NOT EXISTS `class` (
  `cname` varchar(10) NOT NULL,
  PRIMARY KEY (`cname`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Table structure for table `classseats`
CREATE TABLE IF NOT EXISTS `classseats` (
  `trainno` int(11) NOT NULL,
  `doj` date NOT NULL,
  `class` varchar(10) NOT NULL,
  `fare` int(11) NOT NULL,
  `seatsleft` int(11) NOT NULL,
  PRIMARY KEY (`trainno`, `doj`, `class`),
  KEY `class` (`class`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Triggers `classseats`
DROP TRIGGER IF EXISTS `before_insert_on_classseats`;
DELIMITER //
CREATE TRIGGER `before_insert_on_classseats` BEFORE INSERT ON `classseats`
 FOR EACH ROW begin
if datediff(curdate(),new.doj)>0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE TEXT = 'Check date!!!';
end if;
if new.fare<=0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Check fare!!!';
end if;
if new.seatsleft<=0 then
SIGNAL SOLSTATE '45000'
SET MESSAGE_TEXT = 'Check seats!!!';
end if;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before_update_on_classseats`;
DELIMITER //
CREATE TRIGGER `before_update_on_classseats` BEFORE UPDATE ON `classseats`
```

```
FOR EACH ROW begin
if datediff(curdate(),new.doj)>0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE TEXT = 'check date!!!';
end if;
if new.fare<=0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Check fare!!!';
end if;
if new.seatsleft<=0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Check seats!!!';
end if;
end
//
DELIMITER;
-- Table structure for table `pd`
CREATE TABLE IF NOT EXISTS `pd` (
  `pnr` int(11) NOT NULL,
  `pname` varchar(50) NOT NULL,
  `page` int(11) NOT NULL,
  `pgender` varchar(10) NOT NULL,
  PRIMARY KEY (`pnr`,`pname`,`page`,`pgender`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Triggers `pd`
DROP TRIGGER IF EXISTS `before_insert_on_pd`;
DELIMITER //
CREATE TRIGGER `before_insert_on_pd` BEFORE INSERT ON `pd`
 FOR EACH ROW begin
if new.pgender NOT IN ('M', 'F') then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Enter M:Male F:Female.';
end if;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before_update_on_pd`;
DELIMITER //
CREATE TRIGGER `before update on pd` BEFORE UPDATE ON `pd`
 FOR EACH ROW begin
if new.pgender NOT IN ('M', 'F') then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Enter M:Male F:Female.';
end if;
end
//
DELIMITER;
-- Table structure for table `resv'
```

```
CREATE TABLE IF NOT EXISTS `resv` (
  `pnr` int(11) NOT NULL AUTO INCREMENT,
  `id` int(11) NOT NULL,
  `trainno` int(11) NOT NULL,
  `doj` date NOT NULL,
  `tfare` int(11) NOT NULL,
  `class` varchar(50) NOT NULL,
  `nos` int(11) NOT NULL,
  `status` varchar(50) NOT NULL,
  PRIMARY KEY (`pnr`),
  UNIQUE KEY `UNIQUE` (`id`,`trainno`,`doj`,`status`),
  KEY `FK_ID` (`id`),
  KEY `FK_TN_DOJ_C` (`trainno`,`doj`,`class`),
  KEY `class` (`class`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=41 ;
-- Triggers `resv`
DROP TRIGGER IF EXISTS `after_insert_on_resv`;
DELIMITER //
CREATE TRIGGER `after insert on resv` AFTER INSERT ON `resv`
 FOR EACH ROW begin
UPDATE classseats SET seatsleft=seatsleft-new.nos where trainno=new.trainno AND
class=new.class AND doj=new.doj;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `after_update_on_resv`;
DELIMITER //
CREATE TRIGGER `after_update_on_resv` AFTER UPDATE ON `resv`
 FOR EACH ROW begin
if (new.status='CANCELLED' AND datediff(new.doj,curdate())<=0 ) then</pre>
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Cancellation Not Possible!!!!';
end if;
if (new.status='CANCELLED' AND datediff(new.doj,curdate())>0 )then
UPDATE classseats SET seatsleft=seatsleft+new.nos where trainno=new.trainno AND
class=new.class AND doj=new.doj;
 if datediff(new.doj,curdate())>=30 then
 INSERT INTO canc values (new.pnr,new.tfare);
 end if;
 if datediff(new.doj,curdate())<30 then
 INSERT INTO canc values (new.pnr,0.5*new.tfare);
 end if;
end if;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before insert on resv`;
DELIMITER //
CREATE TRIGGER `before_insert_on_resv` BEFORE INSERT ON `resv`
```

```
FOR EACH ROW begin
if new.tfare<0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE TEXT = 'Negative balance NOT possible';
end if;
if new.nos<=0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Negative OR 0 seats NOT possible';
end if;
if (select seatsleft from classseats where trainno=new.trainno AND
class=new.class AND doj=new.doj) < new.nos then</pre>
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Not enough seats available!!!';
end if;
SET new.status='BOOKED';
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before_update_on_resv`;
DELIMITER //
CREATE TRIGGER `before update on resv` BEFORE UPDATE ON `resv`
 FOR EACH ROW begin
if new.tfare<0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Negative balance NOT possible';
end if;
if new.nos<=0 then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Negative OR 0 seats NOT possible';
if (select seatsleft from classseats where trainno=new.trainno AND
class=new.class AND doj=new.doj) < new.nos then</pre>
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Not enough seats available!!!';
end if;
end
//
DELIMITER;
-- Table structure for table `station`
CREATE TABLE IF NOT EXISTS `station` (
  `sname` varchar(50) NOT NULL,
  PRIMARY KEY (`sname`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Table structure for table `train`
CREATE TABLE IF NOT EXISTS `train` (
  `trainno` int(11) NOT NULL AUTO INCREMENT,
  `tname` varchar(50) NOT NULL,
  `sp` varchar(50) NOT NULL,
  `st` time NOT NULL,
```

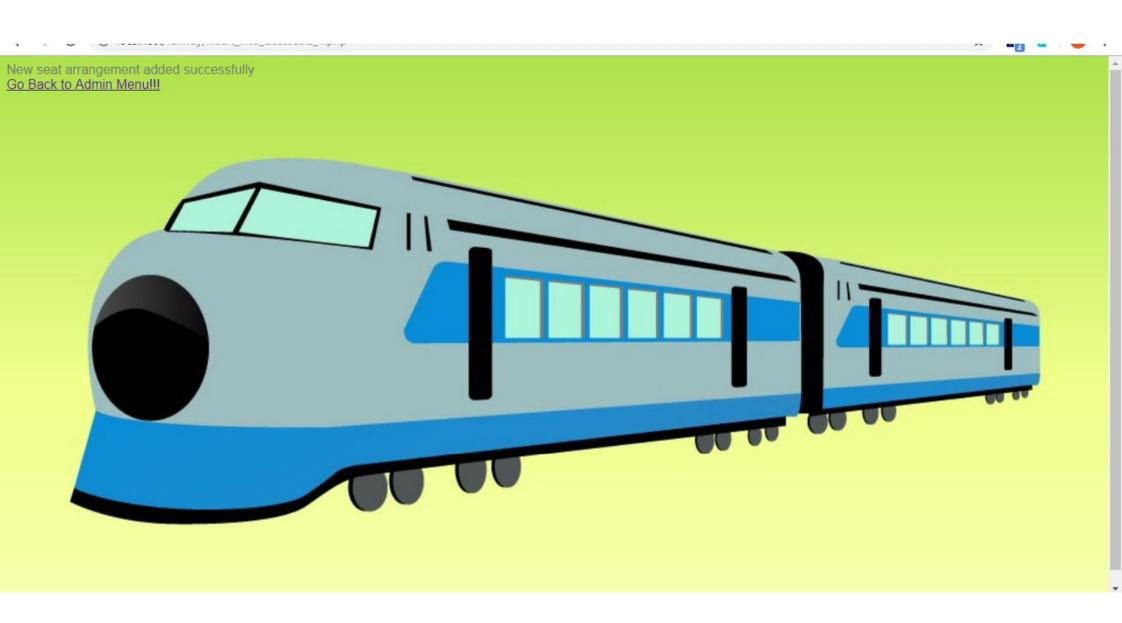
```
`dp` varchar(50) NOT NULL,
  `dd` varchar(10) DEFAULT NULL,
  `dt` time NOT NULL,
  PRIMARY KEY (`trainno`),
  KEY `sp` (`sp`),
  KEY `dp` (`dp`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO_INCREMENT=11 ;
-- Triggers `train`
DROP TRIGGER IF EXISTS `before_insert_on_train`;
DELIMITER //
CREATE TRIGGER `before_insert_on_train` BEFORE INSERT ON `train`
 FOR EACH ROW begin
if (new.dt<new.st AND new.dd='Day 1') then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Improper Timings';
end if;
if (new.dp=new.sp) then
SIGNAL SQLSTATE '45000'
SET MESSAGE TEXT = 'Same Starting & Destination Points not allowed';
end if;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before update on train`;
DELIMITER //
CREATE TRIGGER `before update on train` BEFORE UPDATE ON `train`
 FOR EACH ROW begin
if (new.dt<new.st AND new.dd='Day 1') then
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Improper Timings';
end if;
end
//
DELIMITER;
-- Table structure for table `user`
CREATE TABLE IF NOT EXISTS `user` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `password` varchar(50) NOT NULL,
  `emailid` varchar(50) NOT NULL,
  `mobileno` varchar(10) NOT NULL,
  `dob` date NOT NULL,
  PRIMARY KEY (`id`),
  UNIQUE KEY `UNIQUEMN` (`mobileno`),
  UNIQUE KEY `UNIQUEEI` (`emailid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 AUTO INCREMENT=23;
-- Triggers `user`
DROP TRIGGER IF EXISTS `before_insert_on_user`;
```

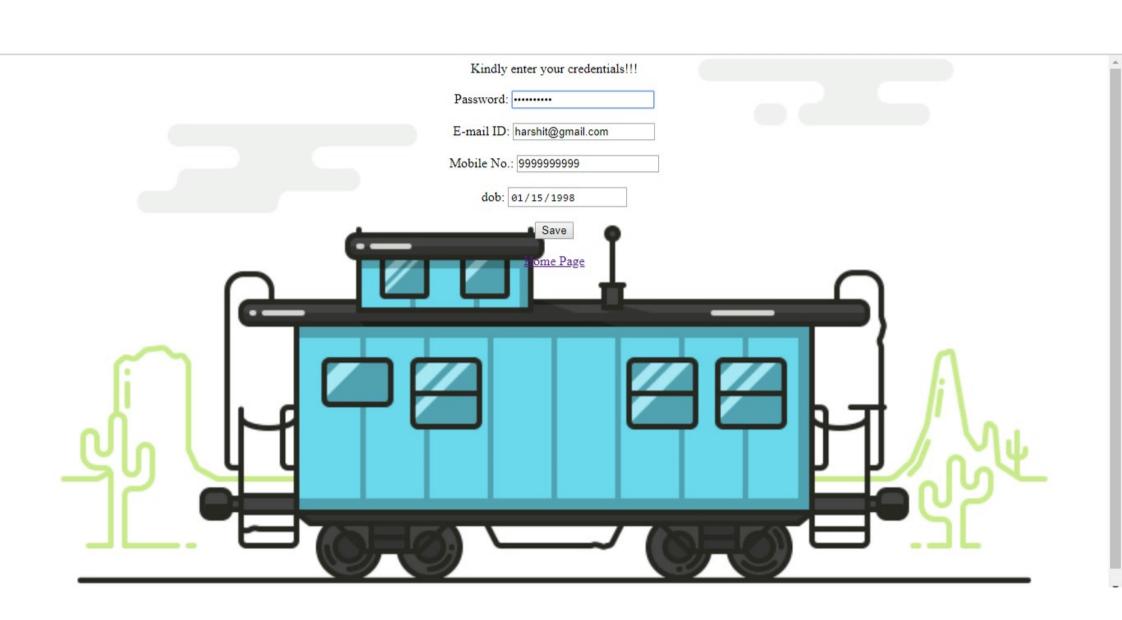
```
DELIMITER //
CREATE TRIGGER `before_insert_on_user` BEFORE INSERT ON `user`
 FOR EACH ROW begin
if (year(curdate())-year(new.dob))<18 then</pre>
SIGNAL SOLSTATE '45000'
SET MESSAGE_TEXT = 'Minimum age bar of 18 years.';
end if;
end
//
DELIMITER;
DROP TRIGGER IF EXISTS `before_update_on_user`;
DELIMITER //
CREATE TRIGGER `before_update_on_user` BEFORE UPDATE ON `user`
 FOR EACH ROW begin
if (year(curdate())-year(new.dob))<18 then</pre>
SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT = 'Minimum age bar of 18 years.';
end if;
end
//
DELIMITER;
-- Constraints for table `canc`
ALTER TABLE `canc`
  ADD CONSTRAINT `canc ibfk 1` FOREIGN KEY (`pnr`) REFERENCES `resv` (`pnr`) ON
UPDATE CASCADE;
-- Constraints for table `classseats`
ALTER TABLE `classseats`
  ADD CONSTRAINT `classseats_ibfk_1` FOREIGN KEY (`trainno`) REFERENCES `train`
(`trainno`) ON UPDATE CASCADE,
  ADD CONSTRAINT `classseats_ibfk_2` FOREIGN KEY (`class`) REFERENCES `class`
(`cname`) ON UPDATE CASCADE;
-- Constraints for table `pd`
ALTER TABLE 'pd'
  ADD CONSTRAINT `pd_ibfk_1` FOREIGN KEY (`pnr`) REFERENCES `resv` (`pnr`) ON
UPDATE CASCADE;
-- Constraints for table `resv`
ALTER TABLE `resv`
  ADD CONSTRAINT `resv_ibfk_1` FOREIGN KEY (`id`) REFERENCES `user` (`id`) ON
UPDATE CASCADE,
  ADD CONSTRAINT `resv_ibfk_2` FOREIGN KEY (`trainno`, `doj`, `class`)
REFERENCES `classseats` (`trainno`, `doj`, `class`) ON UPDATE CASCADE,
  ADD CONSTRAINT `resv_ibfk_3` FOREIGN KEY (`class`) REFERENCES `class`
(`cname`) ON UPDATE CASCADE;
-- Constraints for table `train`
```

```
ALTER TABLE `train`

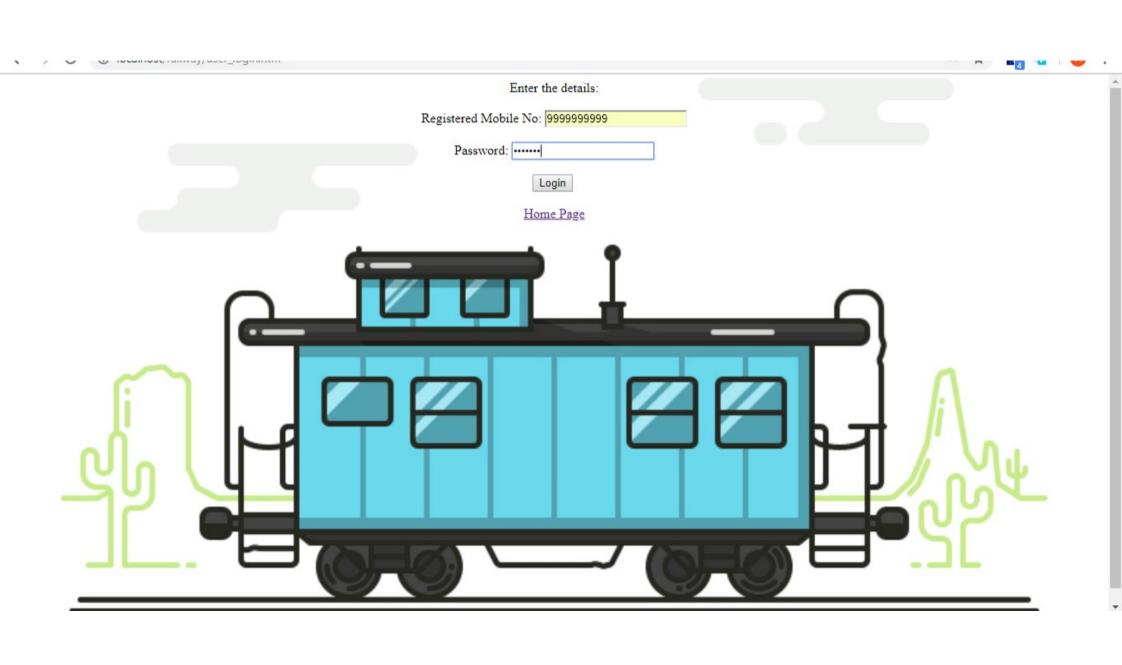
ADD CONSTRAINT `train_ibfk_1` FOREIGN KEY (`sp`) REFERENCES `station`
(`sname`) ON UPDATE CASCADE,

ADD CONSTRAINT `train_ibfk_2` FOREIGN KEY (`dp`) REFERENCES `station`
(`sname`) ON UPDATE CASCADE;
```









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