

```

/* 1 */

/* a */
/* "there should be 2-4 database requests */

/* b */
/* the 2 SQL statment to update PRODUCT */
Update PRODUCT
Set PROD_QOH = PROD_QOH + '1'
Where PROD_CODE = 'ABC';

Update PART
Set PART_QOH = PART_QOH - 1
Where PART_CODE = 'A'
Or    PART_CODE = 'B'
Or    PART_CODE = 'C';
/* the 4 SQL statment to update PRODUCT */
Update PRODUCT
Set PROD_QOH = PROD_QOH + '1'
Where PROD_CODE = 'ABC';

Update PART
Set PART_QOH = PART_QOH - 1
Where PART_CODE = 'A';
Update PART
Set PART_QOH = PART_QOH - 1
Where PART_CODE = 'B';
Update PART
Set PART_QOH = PART_QOH - 1
Where PART_CODE = 'C' ;

/* C */
Begin ;
Update PRODUCT
Set PROD_QOH = PROD_QOH + '1'
Where PROD_CODE = 'ABC';

Update PART
Set PART_QOH = PART_QOH - 1
Where PART_CODE = 'A'
Or    PART_CODE = 'B'
Or    PART_CODE = 'C';
Commit;

/* D */

/* E */

/* 2 */
/* first problem is lost update
second problem is Uncommitted data
thrid problem is Inconsistent retrieval
Concurrency control can checks all the activties that are happing with one process
or mltiple process
and then can control all the process and organize it
so every process that happen in the same time would not have any issue with it.
*/

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/* 3 */
/* the tool responsible for Concurrency control is known as Scheduler
Used of Scheduler to resolving conflicts because it is answerable for the order of
transaction when there are concurrent transactions are executing
Scheduler is required because it maintains the transaction serializability and
isolation
Scheduler uses the concurrency control methods to determine the order of execution
*/

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/* 4 */
/* Binary locks it possesses two values as locked or unlocked
for example
Lock ITEM
READ ITEM_QOH
ITEM_QOH = 4*5
WRITE PROD_QOH
UNLOCK ITEM
LOCK ITEM
READ ITEM_QOH
ITEM_QOH = 12+5
WRITE ITEM_QOH
UNLOCK ITEM
Exclusive locks is the one permits only a single user to do the transaction by
using the locked data item
for example
Insert Into acc Value (26, 100)
Shared lock is used when need to give allowance to different transactions to access
same time
for example
Select aaa from acc
where aaa_number= 50
*/

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/* 5 */
/* Database recovery
one of process could be full backup plan which recovers the entire database or even
the selected part of database which could offer backup to the whole database.
another one could be Differential backup is one only keep the last update or
change
last one Transaction log as it holds back all transactions which have been
performed in entire database.
Techniques of recovery
Deferred-write or deferred-update which does not possible to do it immediately in
the database all the changes are first preferred to be written to transaction and
update with transaction commit point
Write-through or immediate-write as it in this case take place as soon as the
execution of transaction take place it also doesn't need to reach the commit point
*/
/* 6 */

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INSERT INTO INVOICE
Values (10983, '10010', '2016-5-11', 118.80, '30' 'OPEN');
INSERT INTO LINE
value (10983, 1, '11QER/31', 1, 110.00);
Update PRODUCT
Set P_QTYOH = P_QTYOH-1
where P_CODE = '11QER/31';
Update CUSTOMER
Set CUS_DATELSTPUR = '2016-5-11', CUS_BALANCE = CUS_BALANCE + 118.80

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where CUS_CODE = '10010';
COMMIT;

INSERT INTO PAYMENT
value (3428, '2016-6-03', '10010', 100.00, 'CASH', 'None');
Update CUSTOMER
Set CUS_DATELSTPMT = '2016-6-03', CUS_BALANCE = CUS_BALANCE-100.00
where CUS_CODE = '10010';
COMMIT;

```

```

/* KCT */
/*
SQLyog Community Edition- MySQL GUI v8.12
MySQL - 75.1.40-community : Database - kct
*****
*/
/*Table structure for table `KCT_costumetype` */

CREATE TABLE `KCT_costumetype` (
  `TypeId` SMALLINT(6) NOT NULL AUTO_INCREMENT,
  `Description` VARCHAR(35) NOT NULL,
  `Photo` VARCHAR(30) DEFAULT NULL,
  `DailyRentalRate` DECIMAL(8,2) NOT NULL,
  `depositRate` DECIMAL(8,2) DEFAULT NULL,
  `replacementCost` DECIMAL(8,2) DEFAULT NULL,
  PRIMARY KEY (`TypeId`)
) ;

/*Table structure for table `KCT_costume` */

CREATE TABLE `KCT_costume` (
  `costumeID` SMALLINT(6) NOT NULL,
  `size` VARCHAR(10) NOT NULL,
  `available` TINYINT(1) NOT NULL DEFAULT '1',
  `datePurchased` DATE DEFAULT NULL,
  `costumeType` SMALLINT(6) NOT NULL,
  PRIMARY KEY (`costumeID`),
  UNIQUE KEY `costumeID` (`costumeID`),
  KEY `KCT_costume_ibfk_1` (`costumeType`),
  CONSTRAINT `KCT_costume_ibfk_1` FOREIGN KEY (`costumeType`) REFERENCES
`KCT_costumetype` (`TypeId`)
) ;

/*Data for the table `costumetype` */

INSERT INTO
`KCT_costumetype`(`TypeId`,`Description`,`Photo`,`DailyRentalRate`,`depositRate`,`r
eplacementCost`)
VALUES (1,'Clown','clown.jpg','20.00','30.00','50.00'),
(2,'Ballerina','ballerina.jpg','20.00','20.00','50.00'),
(3,'Gorilla','gorilla.jpeg','30.00','23.00','50.00'),
(4,'Misc',NULL,'50.00',NULL,NULL),
(5,'star wars: Darth Vader','darth vader.jpg','40.00','30.00','70.00'),
(6,'star wars: luke','luke.jpg','40.00','30.00','70.00'),
(7,'star wars: leia','leia.jpg','40.00','30.00','70.00');

```

```
/*Data for the table `KCT_costume` */
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```
INSERT INTO
`KCT_costume`(`costumeID`,`size`,`available`,`datePurchased`,`costumeType`)
VALUES (1,'medium',1,'2009-03-04',1),
(2,'large',1,'2009-04-04',3),
(3,'large',1,'2009-05-04',2),
(4,'small',0,'2009-06-04',2),
(5,'small',1,'2009-07-04',2),
(6,'small',0,'2009-07-14',5),
(7,'medium',1,'2009-08-14',7),
(8,'large',0,'2009-08-14',6),
(9,'medium',1,'2009-08-14',5),
(10,'medium',1,'2009-08-14',6),
(11,'large',1,'2009-02-04',2);
```

```
/*Table structure for table `KCT_customer` */
```

```
CREATE TABLE `KCT_customer` (
  `CustomerID` INT(11) NOT NULL,
  `FirstName` VARCHAR(25) NOT NULL,
  `LastName` VARCHAR(25) NOT NULL,
  `Street` VARCHAR(30) DEFAULT NULL,
  `City` VARCHAR(35) DEFAULT NULL,
  `State` CHAR(2) DEFAULT NULL,
  `Zip` VARCHAR(9) DEFAULT NULL,
  `PhoneNumber` CHAR(11) DEFAULT NULL,
  PRIMARY KEY (`CustomerID`)
) ;
```

```
/*Data for the table `KCT_customer` */
```

```
INSERT INTO
`KCT_customer`(`CustomerID`,`FirstName`,`LastName`,`Street`,`City`,`State`,`Zip`,`P
honeNumber`)
VALUES (1,'Kalvin','Celcius','833 W 27th St.','Kearney','NE','68845','5559384768'),
(2,'Sue','Jones','433 W 27th St.','Kearney','NE','68845','5552342365'),
(3,'Carl','Carlson','431 Main St.','Grand Island','NE','68803','5553784832'),
(4,'Sally','Smith','123 A Ave','Aurora','NE','36257','5558434423'),
(5,'Dave','Johnsen','1208 Loveland Lane','Kearney','NE','68845','5552445623'),
(6,'John','Johnson','452 South Blvd','York','NE','36257','5558555366');
```

```
/*Table structure for table `KCT_rental` */
```

```
CREATE TABLE `KCT_rental` (
  `RentalID` INT(11) NOT NULL,
  `RentalDate` DATE NOT NULL,
  `NumberOfDays` DECIMAL(3,0) NOT NULL,
  `TotalRentalAmount` DECIMAL(8,2) NOT NULL,
  `TotalDeposit` DECIMAL(8,2) DEFAULT NULL,
  `Tax` DECIMAL(8,2) DEFAULT NULL,
  `TotalAmount` DECIMAL(8,2) NOT NULL,
  `CustomerID` INT(11) NOT NULL,
  `ReturnDate` DATE DEFAULT NULL,
  `AmountReturned` DECIMAL(8,2) DEFAULT NULL,
  PRIMARY KEY (`RentalID`),
  KEY `RentalCustomerFK` (`CustomerID`),
  CONSTRAINT `RentalCustomerFK` FOREIGN KEY (`CustomerID`) REFERENCES
`KCT_customer` (`CustomerID`) ON DELETE NO ACTION ON UPDATE NO ACTION
```

```

) ;

/*Data for the table `KCT_rental` */

INSERT INTO
`KCT_rental`(`RentalID`,`RentalDate`,`NumberOfDays`,`TotalRentalAmount`,`TotalDeposit`,`Tax`,`TotalAmount`,`CustomerID`,`ReturnDate`,`AmountReturned`)
VALUES (1,'2009-10-02','4','80.00','30.00','7.70','87.70',1,NULL,NULL),
(2,'2009-07-08','7','40.00','20.00','9.75','49.75',2,'2009-07-15','15.00'),
(3,'2009-09-21','5','300.00','60.00','17.50','377.50',3,NULL,NULL),
(4,'2009-10-07','5','150.00','23.00','7.00','180.00',1,NULL,NULL),
(5,'2009-10-01','3','120.00','30.00','8.40','158.40',4,NULL,NULL),
(6,'2009-09-25','10','300.00','23.00','21.00','344.00',6,NULL,'100.00');

/*Table structure for table `KCT_lineitem` */

CREATE TABLE `KCT_lineitem` (
  `RentalID` INT(11) NOT NULL,
  `CostumeID` SMALLINT(6) NOT NULL,
  `Rate` DECIMAL(10,0) DEFAULT NULL,
  `Deposit` DECIMAL(10,0) DEFAULT NULL,
  PRIMARY KEY (`RentalID`,`CostumeID`),
  CONSTRAINT `lineRentalFK` FOREIGN KEY (`RentalID`) REFERENCES `KCT_rental`
(`RentalID`),
  CONSTRAINT `linecostumeFK` FOREIGN KEY (`CostumeID`) REFERENCES `KCT_costume`
(`costumeID`)
) ;

/*Data for the table `KCT_lineitem` */

INSERT INTO `KCT_lineitem`(`RentalID`,`CostumeID`,`Rate`,`Deposit`) VALUES
(1,1,'20','30'),(2,3,'20','20'),(3,4,'20','20'),(3,6,'40','30'),(4,2,'30','23'),
(5,8,'40','30'),(6,2,'30','23');

CREATE VIEW `KCT_customeraddress` AS SELECT `KCT_customer`.`FirstName` AS
`FirstName`,`KCT_customer`.`LastName` AS `LastName`,
`KCT_customer`.`Street` AS `Street`,`KCT_customer`.`City` AS
`City`,`KCT_customer`.`State` AS `State`,`KCT_customer`.`Zip` AS `Zip`
FROM `KCT_customer` ;

CREATE VIEW `KCT_laterentals` AS SELECT `KCT_customer`.`FirstName` AS
`FirstName`,`KCT_customer`.`LastName` AS `LastName`,
`KCT_customer`.`PhoneNumber` AS `PhoneNumber`,`KCT_rental`.`RentalDate` AS
`RentalDate`,`KCT_rental`.`TotalRentalAmount` AS `TotalRentalAmount`,
`KCT_rental`.`NumberOfDays` AS `NumberOfDays`,`(TO_DAYS(CURDATE()) -
TO_DAYS((`KCT_rental`.`RentalDate` + `KCT_rental`.`NumberOfDays`))) AS
`NumberOfDaysLate`
FROM (`KCT_customer` JOIN `KCT_rental`)
WHERE ((`KCT_customer`.`CustomerID` = `KCT_rental`.`CustomerID`)
AND (CURDATE() > (`KCT_rental`.`RentalDate` + INTERVAL `KCT_rental`.`NumberOfDays`
DAY))
AND ISNULL(`KCT_rental`.`ReturnDate`)) ;

/*View structure for view KCT_customerlatefees */

CREATE VIEW `KCT_customerlatefees` AS SELECT `KCT_laterentals`.`LastName` AS
`LastName`,`KCT_laterentals`.`FirstName` AS `FirstName`,

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`KCT_laterentals`.`PhoneNumber` AS `PhoneNumber`,
(`KCT_laterentals`.`NumberOfDaysLate` * (`KCT_laterentals`.`TotalRentalAmount` /
`KCT_laterentals`.`NumberOfDays`)) AS `LateFee`
FROM `KCT_laterentals`;

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/*View structure for view KCT_customerlatetotals */

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CREATE VIEW `KCT_customerlatetotals` AS SELECT `KCT_customerlatefees`.`FirstName`
AS `FirstName`,`KCT_customerlatefees`.`LastName` AS `LastName`,
`KCT_customerlatefees`.`PhoneNumber` AS
`PhoneNumber`,SUM(`KCT_customerlatefees`.`LateFee`) AS `AccountDue`
FROM `KCT_customerlatefees`
GROUP BY
`KCT_customerlatefees`.`LastName`,`KCT_customerlatefees`.`FirstName`,`KCT_customerl
atefees`.`PhoneNumber`;

```

```

/*View structure for view KCT_laterentals */

```

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/* A */

```

```

Insert Into KCT_costumetype (TypeId, Description, DailyRentalRate, depositeRate,
replacementcost)
value (8, 'star wars; ewok', 40,30,70);

```

```

Insert Into KCT_costume (costumeID, size, available, datePurchased, costumeType)
Value (12, 'large', 1, '2020-10-30', 8);

```

```

Insert Into KCT_costume (costumeID, size, available, datePurchased, costumeType)
Value (12, 'small', 1, '2020-10-30', 8);

```

```

commit;

```

```

/* B */

```

```

Insert Into KCT_rental (RentalID, RentalDate, NumberOfDays, CustomerID, Tax)
Value ('1','2020-10-31', '2', '1', '7.0');

```

```

Insert Into KCT_Lineitem (RentalID,CustomerID)
Value ('7','12');

```

```

Insert Into KCT_Lineitem (RentalID,CustomerID)
Value ('8','12');

```

```

Update KCT_costume
Set availble = 0;

```

```

commit;

```