Abu Butt
CSc 336

May 18, 2017
Prof. Peter Barnett

Assignment 3

1)
a) Since salesdetail table has 5 attributes (ord_num, title_id, discount, qty, stor_id) and sales table has 3 attributes (stor_id, ord_num, date). If we add the date attribute from sales into salesdetail, it will have all the attributes and create a new table, which will consist of all attributes from the both tables.

1) So the new table will have 6 attributes (ord_num, title_id, qty, stor_id, date, discount). Stor_id, ord_num, and title_id will be the primary keys of the table. title_id will be a foreign key which will refer to title.title_id.

2)

```
show CREATE TABLE saledetailsales1
```

+ Options

Table	Create Table
saledetailsales1	CREATE TABLE `saledetailsales1` (`stor_id` char(4) NOT NULL, `ord_num` varchar(20) NOT NULL, `title_id` varchar(6) NOT NULL, `qty` smallint(6) NOT NULL, `discount` float NOT NULL, `date` datetime NOT NULL) ENGINE=InnoDB DEFAULT CHARSET=latin1

3)

BU1032	234518
BU2075	234518
MC3021	234518
TC4203	234518
BU2075	342157
MC3021	342157
PS3333	356921
PS7777	356921
TC3218	356921
BU2075	124152
PC1035	124152
TC4203	124152
BU1111	234518
TC3218	234518
TC4203	234518
TC7777	234518
BU1032	12-F-9
BU2075	12-F-9
MC3021	12-F-9
PC1035	12-F-9
TC4203	12-F-9
BU1032	13-E-7
BU2075	13-E-7
MC3021	13-E-7
PC1035	13-E-7
TC4203	13-E-7
BU7832	13-J-9
TC4203	13-J-9

As you can see, there are multiple title_id for the same ord_num.

4) stor_id, ord_num and title_id will be the primary keys of the new table.

5) stor_id, ord_num and title_id will be the functional dependencies, because these attributes determines date, qty, and discount attributes.

6) Yes, there is. date is determined by stor_id and ord_num. but both of these attributes cannot be the whole key, only the portion of it.

7) Question 6 doesn't satisfy BCNF normal form. I think it belongs to 2nd normal form.

b)

sales table has primary key as stor_id, ord_num and combination of both primary key to make it super key. Which is a left side of functional dependency for the table which determines the date. In salesdetail table stor_id, ord_num, title_id are the primary keys, when combined becomes a super key for the table. salesdetail super key is a left side of a functional dependency and

determines qty and discount attributes. In the new table the primary keys are stor_id, ord_num, title_id and the combination of all primary keys make them super key of the new table. stor_id and ord_num are determining only one of the attribute on the right side, which will violate BCNF.

2)
a) I will combine titleauthor and author tables to create a new one.
1)

```
show create table author_title_author
```

+ Options

Table	Create Table
author_title_author	CREATE TABLE `author_title_author` (`au_id` varchar(11) NOT NULL, `au_lname` varchar(40) NOT NULL, `au_fname` varchar(20) NOT NULL, `phone` char(12) NOT NULL, `address` varchar(40) DEFAULT NULL, `city` varchar(20) DEFAULT NULL, `state` char(2) DEFAULT NULL, `country` varchar(12) DEFAULT NULL, `postalcode` char(10) DEFAULT NULL, `au_ord` tinyint(4) DEFAULT NULL, `royaltyper` int(11) DEFAULT NULL, `title_id` varchar(6) NOT NULL DEFAULT '', PRIMARY KEY (`au_id`,`title_id`)) ENGINE=InnoDB DEFAULT CHARSET=latin1

3) The primary keys for the new table are au_id and title_id.
4) In the new table au_ord and royaltyper attributes depends on au_id and title_id. Without the au_id and title_id, you donot know who ordered what and the quantity of it. So, primary keys (au_id, title_id) are very important in this table.
5) There are functional dependency whose left side is not the PK. au_id can not be the whole key. All the other attributes in author table depends on au_id, but not required in title_author.