CS 1103 - FR02B

Assignment 4

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Problems:

FIGURE P7.56 THE CH07_FACT ERD

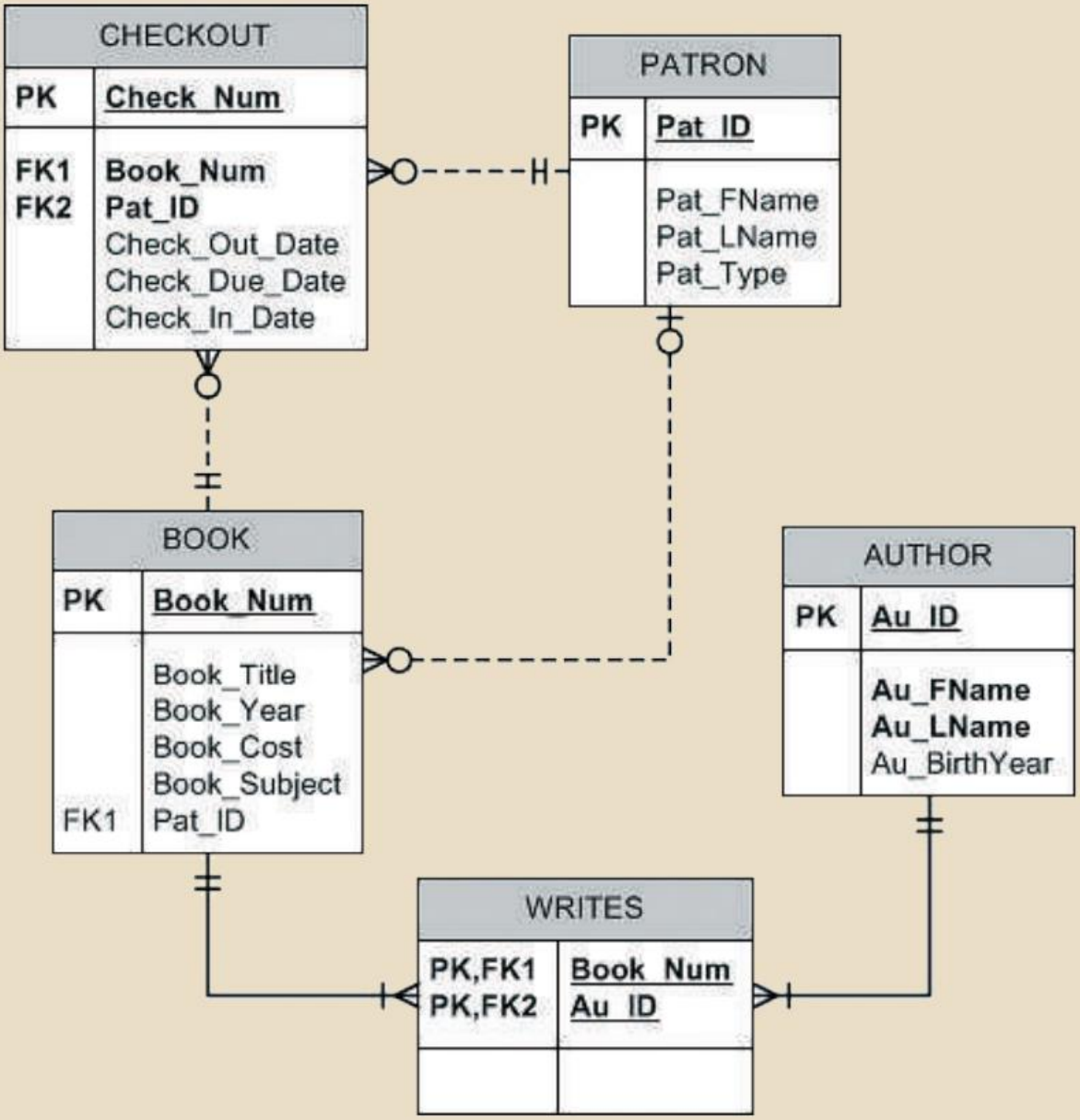

Figure P7.56: The Ch07_Fact ERD

Problem 60: Write a query to display the different years in which books have been published. Include each year only once and sort the results by year (Figure P7.60).

FIGURE P7.60 UNIQUE BOOK YEARS

BOOK_YEAR
2014
2015
2016
2017

Figure P7.60: Sample output of Query 60

```
select distinct BOOK_YEAR from BOOK order by BOOK_YEAR asc;
```

#	BOOK_YEAR
1	2014
2	2015
3	2016
4	2017

Figure 1: Output result of Query 60

Problem 61: Write a query to display the different subjects on which FACT has books. Include each subject only once and sort the results by subject (Figure P7.61).

FIGURE P7.61 UNIQUE BOOK SUBJECTS

BOOK_SUBJECT
Cloud
Database
Middleware
Programming

Figure P7.61: Sample output of Query 61

```
select distinct BOOK_SUBJECT from BOOK order by BOOK_SUBJECT asc;
```

#	BOOK_SUBJECT
1	Cloud
2	Database
3	Middleware
4	Programming

Figure 2: Output result of Query 61

Problem 65: Write a query to display the book number, title, and cost for all books that cost $59.95 sorted by book number (Figure P7.65).

FIGURE P7.65 BOOKS THAT COST $59.95

BOOK_NUM	BOOK_TITLE	BOOK_COST
5235	Beginner's Guide to JAVA	59.95
5238	Conceptual Programming	59.95
5242	C# in Middleware Deployment	59.95
5251	Thoughts on Revitalizing Ruby	59.95

Figure P7.65: Sample output of Query 65

```
select BOOK_NUM, BOOK_TITLE, BOOK_COST from BOOK where BOOK_COST
= 59.95 order by BOOK_NUM asc;
```

#	BOOK_NUM	BOOK_TITLE	BOOK_COST
1	5235	Beginner's Guide to JAVA	59.95
2	5238	Conceptual Programming	59.95
3	5242	C# in Middleware Deployment	59.95
4	5251	Thoughts on Revitalizing Ruby	59.95
*	NULL	NULL	NULL

Figure 3: Output result of Query 65

Problem 72: Write a query to display the patron ID, first and last name of all patrons who are students, sorted by patron ID (Figure P7.72). (44 rows)

FIGURE P7.72 STUDENT PATRONS

PAT_ID	PAT_FNAME	PAT_LNAME
1166	Vera	Alvarado
1171	Peggy	Marsh
1172	Tony	Miles
1174	Betsy	Malone
1180	Nadine	Blair
1181	Allen	Horne
1182	Jamal	Melendez
1184	Jimmie	Love
1185	Sandra	Yang
1200	Lorenzo	Torres

Figure P7.72: Sample output of Query 72

```
select PAT_ID, PAT_FNAME, PAT_LNAME from PATRON where PAT_TYPE =
"student" order by PAT_ID asc;
```

#	PAT_ID	PAT_FNAME	PAT_LNAME
1	1166	Vera	Alvarado
2	1171	Peggy	Marsh
3	1172	Tony	Miles
4	1174	Betsy	Malone
5	1180	Nadine	Blair
6	1181	Allen	Horne
7	1182	Jamal	Melendez
8	1184	Jimmie	Love
9	1185	Sandra	Yang
10	1200	Lorenzo	Torres
11	1201	Shelby	Noble
12	1202	Holly	Anthony
13	1203	Tyler	Pope
14	1204	Thomas	Duran
15	1205	Claire	Gomez
16	1207	Iva	Ramos
17	1208	Ollie	Cantrell
18	1209	Rena	Mathis
19	1210	Keith	Cooley
20	1211	Jerald	Gaines
21	1212	Iva	McClain
22	1213	Desiree	Rivas

Figure 4: Output result of Query 72 (Part 1)

#	PAT_ID	PAT_FNAME	PAT_LNAME
23	1214	Marina	King
24	1215	Maureen	Downs
25	1218	Angel	Terrell
26	1219	Desiree	Harrington
27	1220	Carlton	Morton
28	1221	Gloria	Pitts
29	1222	Zach	Kelly
30	1223	Jose	Hays
31	1224	Jewel	England
32	1225	Wilfred	Fuller
33	1226	Jeff	Owens
34	1227	Alicia	Dickson
35	1228	Homer	Goodman
36	1229	Gerald	Burke
37	1237	Brandi	Larson
38	1238	Erika	Bowen
39	1239	Elton	Irwin
40	1240	Jan	Joyce
41	1241	Irene	West
42	1242	Mario	King
43	1243	Roberto	Kennedy
44	1244	Leon	Richmond
*	NULL	NULL	NULL

Figure 5: Output result of Query 72 (Part 2)

Problem 73: Write a query to display the patron ID, first and last name, and patron type for all patrons whose last name begins with the letter "C," sorted by patron ID (Figure P7.73).

FIGURE P7.73 PATRONS WHOSE LAST NAME STARTS WITH "C"

PAT_ID	PAT_FNAME	PAT_LNAME	PAT_TYPE
1160	robert	carter	Faculty
1208	Ollie	Cantrell	Student
1210	Keith	Cooley	STUdent

Figure P7.73: Sample output of Query 73

```
select PAT_ID, PAT_FNAME, PAT_LNAME, PAT_TYPE from PATRON where
substring(PAT_LNAME,1,1) = "c" order by PAT_ID asc;
```

#	PAT_ID	PAT_FNAME	PAT_LNAME	PAT_TYPE
1	1160	robert	carter	Faculty
2	1208	Ollie	Cantrell	Student
3	1210	Keith	Cooley	STUdent
*	NULL	NULL	NULL	NULL

Figure 6: Output result of Query 73

Problem 74: Write a query to display the author ID, first and last name of all authors whose year of birth is unknown. Sort the results by author ID (Figure P7.74).

FIGURE P7.74 AUTHORS WITH UNKNOWN BIRTH YEAR

AU_ID	AU_FNAME	AU_LNAME
229	Carmine	Salvadore
262	Xia	Chiang
559	Rachel	McGill

Figure P7.74: Sample output of Query 74

```
select AU_ID, AU_FNAME, AU_LNAME from AUTHOR where AU_BIRTHYEAR is
null order by AU_ID asc;
```

#	AU_ID	AU_FNAME	AU_LNAME
1	229	Carmine	Salvadore
2	262	Xia	Chiang
3	559	Rachel	McGill
*	NULL	NULL	NULL

Figure 7: Output result of Query 74

Problem 78: Write a query to display the number of books in the FACT system (Figure P7.78).

FIGURE P7.78 NUMBER OF BOOKS

Number of Books
20

Figure P7.78: Sample output of Query 78

```
select count(BOOK_NUM) as "Number of Books" from BOOK;
```

#	Number of Books
1	20

Figure 8: Output result of Query 78

Problem 79: Write a query to display the number of different book subjects in the FACT system (Figure P7.79).

FIGURE P7.79 NUMBER OF DIFFERENT SUBJECTS

Number of Subjects
4

Figure P7.79: Sample output of Query 79

```
select count(distinct(BOOK_SUBJECT)) as "Number of Subjects" from
BOOK;
```

#	Number of Subjects
1	4

Figure 9: Output result of Query 79

Problem 80: Write a query to display the number of books that are available (not currently checked out) (Figure P7.80).

FIGURE P7.80 NUMBER OF BOOKS NOT CURRENTLY CHECKED OUT

Available Books
14

Figure P7.80: Sample output of Query 80

```
select count(BOOK_NUM) as "Available Books" from BOOK where PAT_ID
is null;
```

#	Available Books
1	14

Figure 10: Output result of Query 80

Problem 81: Write a query to display the highest book cost in the system (Figure P7.81)

FIGURE P7.81 MOST EXPENSIVE BOOK PRICE

Most Expensive
129.95

Figure P7.81: Sample output of Query 81

```
select max(BOOK_COST) as "Most Expensive" from BOOK;
```

#	Most Expensive
1	129.95

Figure 11: Output result of Query 81

Problem 82: Write a query to display the lowest book cost in the system (Figure P7.82).

FIGURE P7.82 LEAST EXPENSIVE BOOK PRICE

Least Expensive
49.95

Figure P7.82: Sample output of Query 82

```
select min(BOOK_COST) as "Least Expensive" from BOOK;
```

#	Least Expensive
1	49.95

Figure 12: Output result of Query 82

Problem 83: Write a query to display the number of different patrons who have ever checked out a book (Figure P7.83).

FIGURE P7.83 DIFFERENT PARTONS TO CHECKOUT A BOOK

DIFFERENT PATRONS
33

Figure P7.83: Sample output of Query 83

```
select count(distinct(PAT_ID)) as "DIFFERENT PATRONS" from
CHECKOUT;
```

#	DIFFERENT PATRONS
1	33

Figure 13: Output result of Query 83

Problem 85: Write a query to display the author ID and the number of books written by that author. Sort the results in descending order by number of books, then in ascending order by author ID (Figure P7.85).

FIGURE P7.85 NUMBER OF BOOKS PER AUTHOR

AU_ID	Books Written
262	3
460	3
185	2
229	2
251	2
383	2
394	2
559	2
218	1
273	1
284	1
438	1
581	1
592	1
603	1

Figure P7.85: Sample output of Query 85

```
select distinct(AU_ID), count(BOOK_NUM) as "Books Written" FROM
WRITES group by AU_ID order by count(BOOK_NUM) desc, AU_ID asc;
```

#	AU_ID	Books Written
1	262	3
2	460	3
3	185	2
4	229	2
5	251	2
6	383	2
7	394	2
8	559	2
9	218	1
10	273	1
11	284	1
12	438	1
13	581	1
14	592	1
15	603	1

Figure 14: Output result of Query 85

Problem 101: Write a query to display the patron ID, first and last name of all patrons who have never checked out any book. Sort the result by patron last name and then first name (Figure P7.101).

FIGURE P7.101 PATRONS WHO NEVER CHECKED OUT A BOOK

PAT_ID	PAT_FNAME	PAT_LNAME
1166	Vera	Alvarado
1180	Nadine	Blair
1238	Erika	Bowen
1208	Ollie	Cantrell
1227	Alicia	Dickson
1205	Claire	Gomez
1239	Elton	Irwin
1240	Jan	Joyce
1243	Roberto	Kennedy
1242	Mario	King
1237	Brandi	Larson
1167	Alan	Martin
1182	Jamal	Melendez
1201	Shelby	Noble
1244	Leon	Richmond
1200	Lorenzo	Torres
1241	Irene	West

Figure P7.101: Sample output of Query 101

```
select PAT_ID, PAT_FNAME, PAT_LNAME from PATRON where PAT_ID not
in
     (SELECT PAT_ID FROM CHECKOUT)
order by PAT_LNAME, PAT_FNAME;
```

#	PAT_ID	PAT_FNAME	PAT_LNAME
1	1166	Vera	Alvarado
2	1180	Nadine	Blair
3	1238	Erika	Bowen
4	1208	Ollie	Cantrell
5	1227	Alicia	Dickson
6	1205	Claire	Gomez
7	1239	Elton	Irwin
8	1240	Jan	Joyce
9	1243	Roberto	Kennedy
10	1242	Mario	King
11	1237	Brandi	Larson
12	1167	Alan	Martin
13	1182	Jamal	Melendez
14	1201	Shelby	Noble
15	1244	Leon	Richmond
16	1200	Lorenzo	Torres
17	1241	Irene	West
*	NULL	NULL	NULL

Figure 15: Output result of Query 101