

Name: Chea Senghak

ID: e20211624


TP04_DML

```
3      -- 1. Find the number of books in the database.
4 •    select COUNT(*)
5      from books;
6 •    select COUNT(DocId)
7      from books;
8
9      -- 2. Find the number of books published after 2010.
10 •   select COUNT(*)
11     from books
12     where year > 2010;
13 •   select * from books;
14 •   select COUNT(*)
15     from (select * from books where year > 2010);
16
17     -- 3. Find the number of students that have borrowed books.
```

Result Grid   Filter Rows: | Export:  | Wrap Cell Content: 

	COUNT(*)
▶	19

```
9      -- 2. Find the number of books published after 2010.
10 •   select COUNT(*)
11     from books
12     where year > 2010;
13 •   select * from books;
14 •   select COUNT(*)
15     from (select * from books where year > 2010);
16
17     -- 3. Find the number of students that have borrowed books.
```

Result Grid   Filter Rows: | Export:  | Wrap Cell Content: 

	COUNT(*)
▶	3

```

16 |
17 -- 3. Find the number of students that have borrowed books.
18 • select COUNT(distinct StId)
19   from borrows;
20
21 • select * from borrows;
22 -- 4. Determine the number of books authored by each author
23 • select A.AName, COUNT(DocId)

```


Result Grid   Filter Rows: | Export:  | Wrap Cell Content: 

	COUNT(distinct StId)
▶ 6	

```

21 -- 3. Find the number of students that have borrowed books.
22 -- 4. Determine the number of books authored by each author
23 • select A.AName, COUNT(DocId)
24   from has_written as H right outer join authors as A
25   on H.AName = A.AName
26   group by AName;
27
28 -- 5. Determine the number of authors in each book
29 • select Bk.DocId, Title, COUNT(AName) as NUMBER_OF_AUTHORS

```

Result Grid   Filter Rows: | Export:  | Wrap Cell Content: 

	AName	COUNT(DocId)
▶	Author1	8
	Author2	6
	Author3	6
	Author4	4
	Author5	4

```

28 -- 5. Determine the number of authors in each book
29 • select Bk.DocId, Title, COUNT(AName) as NUMBER_OF_AUTHORS
30 from has_written as H right outer join books as Bk
31 on H.DocId = Bk.DocId
32 group by Bk.DocId;

```

Result Grid			
		Filter Rows:	
		Export:	
		Wrap Cell Content:	
	DocId	Title	NUMBER_OF_AUTHORS
►	1	book1	5
	2	Kid book	6
	3	Book2	2
	4	Book3	4
	5	Book4	4
	6	Book5	5
	7	Book6	2
	8	Book7	2
	9	Book8	4
	11	Book1	0
	12	Book2	0
	13	Book3	0
	14	Book4	0
	15	Book5	0
	16	Book6	0
	17	Book7	0
	18	Book8	0
	19	Book9	0
	20	Book1	0

```

39  -- 7. Find the youngest student in each major.
40  • select *
41  from students as S join borrows as B
42  on S.StId = B.StId;
43

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	StId	StName	Major	Age	DocId	StId	Date
▶	1	Smith	Computer Science	30	1	1	2024-04-27
	1	Smith	Computer Science	30	2	1	2024-04-26
	1	Smith	Computer Science	30	2	1	2024-05-26
	1	Smith	Computer Science	30	6	1	2024-04-22
	2	Tom	English Literature	32	2	2	2024-04-26
	2	Tom	English Literature	32	2	2	2024-04-27
	2	Tom	English Literature	32	7	2	2024-04-21
	3	Jerry	Mathematics	31	3	3	2024-04-25
	3	Jerry	Mathematics	31	3	3	2024-04-28
	3	Jerry	Mathematics	31	8	3	2024-04-20
	4	Dara	Computer Science	20	1	4	2024-04-29
	4	Dara	Computer Science	20	3	4	2024-04-29
	4	Dara	Computer Science	20	4	4	2024-04-24
	4	Dara	Computer Science	20	4	4	2024-05-07
	5	Paul	French Literature	22	1	5	2024-04-25
	5	Paul	French Literature	22	5	5	2024-04-23
	104	Jerry	Computer Science	NULL	4	104	2024-05-07

```

44  -- 8. Calculate the average age of students who borrowed books from the library.
45  • select AVG(age)
46  from students as S join borrows as B
47  on S.StId = B.StId;
48
49  -- 9. Calculate the average age of students who have borrowed books authored by "Author2"
50  • select AVG(age)
51  from (select distinct S.*
52  from students as S join borrows as B

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

AVG(age)
27.0625

```

49  -- 9. Calculate the average age of students who have borrowed books authored by "Author2"
50 • select AVG(age)
51 from (select distinct S.*
52 from students as S join borrows as B
53 on S.StId = B.StId
54 join has_written as H on B.DocId = H.DocId
55 where AName = "Author2" ) as Tj;
56
57 -- 10. Find the total number of students borrowed in each book in the database along with the b
58 • select Bk.DocId, title, count(StId) as NUMBER_OF_STUDENTS_BORROWED
59 from books as Bk left outer join borrows as B
60 on Bk.DocId = B.DocId
61 group by Bk.DocId;

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	AVG(age)				
▶	28.2500				

```

57 -- 10. Find the total number of students borrowed in each book in the database along with the book name in the result.
58 • select Bk.DocId, title, count(StId) as NUMBER_OF_STUDENTS_BORROWED
59 from books as Bk left outer join borrows as B
60 on Bk.DocId = B.DocId
61 group by Bk.DocId;

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
DocId	title	NUMBER_OF_STUDENTS_BORROWED			
▶ 1	book1	3			
2	Kid book	4			
3	Book2	3			
4	Book3	3			
5	Book4	1			
6	Book5	1			
7	Book6	1			
8	Book7	1			
9	Book8	0			
11	Book1	0			
12	Book2	0			
13	Book3	0			
14	Book4	0			
15	Book5	0			
16	Book6	0			
17	Book7	0			
18	Book8	0			
19	Book9	0			
20	Book1	0			

```

63  -- 11. Find the total number of books borrowed by each student in the student table along with student name in the result.
64  • select S.StId, StName, count(DocId) as NUMBER_OF_STUDENTS_BORROWED
65  from students as S left outer join borrows as B
66  on S.StId = B.StId
67  group by S.StId;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
StId	StName	NUMBER_OF_STUDENTS_BORROWED	
1	Smith	4	
2	Tom	3	
3	Jerry	3	
4	Dara	4	
5	Paul	2	
6	Sara	0	
7	Sok	0	
8	San	0	
9	Sabay	0	
104	Jerry	1	
105	Smith	0	
106	Smith	0	
107	Smith	0	
108	Jerry	0	

```

69  -- 12. Find the total number of books written by each author who has written books with the keyword "programming".
70  • select AName, COUNT(DocId)
71  from has_written where AName in
72  (
73  select distinct AName
74  from has_written as H join describes as B
75  on B.DocId = H.DocId
76  where keyword = "programming" )
77  group by AName;
78  • select * from has_written;
79
80  -- 13. Find the books borrowed by students within the last 15 days.



```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
AName	COUNT(DocId)		
Author1	8		
Author5	4		
Author2	6		
Author3	6		
Author6	6		

```

80 -- 13. Find the books borrowed by students within the last 15 days.
81 • select *
82 from books as Bk join borrows as B
83 on Bk.DocId = B.DocId
84 where DATE_SUB(curdate(), INTERVAL 15 day) <= DATE
85 and date <= curdate();
86
87 • select DATE_SUB(curdate(), interval 15 day);
88
89 • select *
90 from books as Bk join borrows as B
91 on Bk.DocId = B.DocId
92 where datediff(curdate(), DATE) <= 15;
93
94 -- 14. Find the books borrowed by students within the last 15 days along with the bo

```





Result Grid   Filter Rows: Export:  Wrap Cell Content: 

	DocId	Title	Publisher	Year	DocId	StId	Date
▶	4	Book3	Scholastic	1995	4	4	2024-05-07
	4	Book3	Scholastic	1995	4	104	2024-05-07

```

94 -- 14. Find the books borrowed by students within the last 15 days along with the borrowing date and the student's name.
95 • select Bk.DocId, Title, S.StId, DATE
96 from borrows as B join students as S
97 on B.StId = S.StId
98 join books as Bk on Bk.DocId = B.DocId
99 where datediff(curdate(), date) <= 15;
100

```




Result Grid   Filter Rows: Export:  Wrap Cell Content: 

	DocId	Title	StId	DATE
▶	2	Kid book	1	2024-05-26
	4	Book3	4	2024-05-07
	4	Book3	104	2024-05-07

```

101 -- 15. Find the rank of books based on the number of borrows.
102 • select Bk.DocId, count(StId), rank() over(order by count(StId) desc)
103 from books as Bk left outer join borrows as B
104 on Bk.DocId = B.DocId
105 group by Bk.DocId;

```

Result Grid   Filter Rows: Export:  Wrap Cell Content: [IA](#)

	DocId	count(StId)	rank() over(order by count(StId) desc)
▶	2	4	1
	1	3	2
	3	3	2
	4	3	2
	5	1	5
	6	1	5
	7	1	5
	8	1	5
	9	0	9
	11	0	9
	12	0	9
	13	0	9
	14	0	9
	15	0	9
	16	0	9
	17	0	9
	18	0	9
	19	0	9
	20	0	9