

CSE 5330/7330 Fall 2017 Phase 3 Functional Requirements

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Using your database populated with the data provided.

Everyone: Write Queries (and show the results) to answer the following questions:

1. List all software product names and versions and current product status.

The screenshot shows a database query interface. The SQL query is:

```
-- 1
select *
from software_products;
```

The results are displayed in a table with columns: name, version, software_status.

name	version	software_status
Excel	2010	Readv
Excel	2015	usable
Excel	2018beta	not-readv
Excel	secret	not-readv
NULL	NULL	NULL

The interface also shows an "Action Output" section with a table:

#	Time	Action	Message
1	15:25:09	select * from software_products LIMIT 0, 50000	4 row(s) returned

2. List the owner name, component name & version of all “not ready” components.

The screenshot shows a database query interface. The SQL query is:

```
-- 2
select Employees.name,Components.comp_name,Components.version
from Employees, Components
where components.comp_status like 'not-ready' and components.comp_owner = employees.id;
```

The results are displayed in a table with columns: name, comp_name, version.

name	comp_name	version
Emolovee-2	Dbase Interface	D00

The interface also shows an "Action Output" section with a table:

#	Time	Action	Message
1	15:02:42	select Employees.name,Components.comp_name,Components.version from Employees, Components where com...	1 row(s) returned

3. List all component names and versions that have not been inspected.

```
452 -- 3
453
454 select Components.comp_name,Components.version
455 from components
456 left outer join inspection on Components.comp_name = inspection.comp_name and components.version = inspection.version
457 where inspection.comp_name is null;
458
```

Result Grid

comp_name	version
Chart generator	C11

Result 20 x

Output

Action Output

#	Time	Action	Message
1	15:21:47	select Components.comp_name,Components.version from components left outer join inspection on Components...	1 row(s) returned

4. What is the average number of components owned per person?

```
459 -- 4
460 select avg(tableTemp.componentsCount)
461 from ( select count(components.comp_id) as componentsCount
462 from components
463 group by components.comp_owner) as tableTemp;
464
```

Result Grid

avg(tableTemp.componentsCount)
2.0000

Result 21 x

Output

Action Output

#	Time	Action	Message
1	15:22:34	select avg(tableTemp.componentsCount) from (select count(components.comp_id) as componentsCount from c...	1 row(s) returned

5. What is the average score of all inspections for Excel secret?

```
37 -- 5
38
39 select avg(inspection.score)
40 from inspection
41 where (comp_name,version) in (select comp_name,version
42 from components
43 where comp_id in (select comp_id
44 from software_product_built
45 where software_product_built.name like 'Excel' and software_product_built.version like 'secret'));
46
```

Result Grid

avg(inspection.score)
93.0000

Result 82 x

Output

Action Output

#	Time	Action	Message
1	15:26:27	select avg(inspection.score) from inspection where (comp_name,version) in (select comp_name,version from com...	1 row(s) returned

- List all employees by name, seniority, count of components assigned to them, count of inspections performed by them and their average inspection score.

```

73 -- 6
74
75 select e.name, e.seniority, count(distinct c.comp_id) as component_Count, count(distinct i.inspection_id)
76 as inspection_Count, avg(i.score) as average_Score
77 from components c right join employees e on e.id = c.comp_owner
78 left join inspection i on e.id = i.by_who
79 group by e.id;
80

```

name	seniority	component_Count	inspection_Count	average_Score
Employee-1	senior	2	8	86.0000
Employee-2	senior	4	2	97.5000
Employee-3	senior	1	1	80.0000
Employee-4	senior	0	0	NULL
Employee-5	junior	0	0	NULL
Employee-6	junior	0	0	NULL
Employee-7	junior	1	1	100.0000
Employee-8	newbie	0	0	NULL

Result 105 x

Output

Action Output

#	Time	Action	Message
168	17:22:58	insert into inspection(inspection_id, comp_name, version, inspection_date, by_who, score, description) values(...	1 row(s) affected
169	17:23:12	select e.name, e.seniority, count(distinct c.comp_id) as component_Count, count(distinct i.inspection_id) as ins...	8 row(s) returned

- Assume an inspection that results in a “ready” status costs \$200, and all other inspections cost \$100 each. How much did *OSF* in 2010 for inspections conducted by each seniority level?

```

52 -- 7
53
54 select employees.seniority ,
55 CASE status
56 when 'ready' then count(status)*200
57 when 'not-ready' then count(status)*100
58 when 'usable' then count(status)*100
59 end as cost
60 from employees
61 join inspection on employees.id = inspection.by_who
62 where DATE_FORMAT( inspection.inspection_date, "%Y" ) = "2010"
63 group by employees.seniority;
64
65

```

seniority	cost
senior	1000

Result 83 x

Output

Action Output

#	Time	Action	Message
1	15:29:07	select employees.seniority , CASE status when 'ready' then count(status)*200 when 'not-ready' then count(status)...	1 row(s) returned

Everyone: Demonstrate \equiv show the SQL command(s) and result

8. Demonstrate the adding of a new inspection by employee 10400 on Pen driver - P01 held on 8/15/2017 with the score of 60 and description of “needs rework, introduced new errors”.

```
466 -- 8 --
467 -- Demonstrate the adding of a new inspection by employee 10400 on Pen driver - P01 held on 8/15/2017 with t
468 • insert into inspection(inspection_id, comp_name, version, inspection_date, by_who, score, description)
469 values(13, "Pen Driver", "P01", 08/15/2017, 10400, 60, "needs rework, introduced new errors");
470 • select * from inspection;
471
```

inspection_id	comp_name	version	inspection_date	by_who	score	description	status
1	Keyboard Driver	K11	2010-02-14 00:00:00	10100	100	legacv code which is already approved	Readv
2	Touch Screen Driver	T00	2017-06-01 00:00:00	10200	95	initial release ready for usaae	Readv
3	Dbase Interface	D00	2010-02-22 00:00:00	10100	55	too manv hard coded parameters. the software...	not-readv
4	Dbase Interface	D00	2010-02-24 00:00:00	10100	78	improved. but onlv handles DB2 format	usable
5	Dbase Interface	D00	2010-02-26 00:00:00	10100	95	Okav. handles DB3 format.	Readv
6	Dbase Interface	D00	2010-02-28 00:00:00	10100	100	satisfied	Readv
7	Dbase Interface	D01	2011-05-01 00:00:00	10200	100	Okav ready for use	Readv
8	Pen Driver	P01	2017-07-15 00:00:00	10300	80	Okav ready for beta testing	usable
9	Math unit	A01	2014-06-10 00:00:00	10100	90	almost readv	usable
10	Math unit	A02	2014-06-15 00:00:00	10100	70	Accuracy problems!	not-readv
11	Math unit	A02	2014-06-30 00:00:00	10100	100	Okav problems fixed	Readv
12	Math unit	A02	2016-11-02 00:00:00	10700	100	re-review for new employee to gain experience ...	Readv
13	Pen Driver	P01	0000-00-00 00:00:00	10400	60	needs rework. introduced new errors	not-readv

inspection 24 x

Output

Action Output

#	Time	Action	Message
1	15:37:51	insert into inspection(inspection_id, comp_name, version, inspection_date, by_who, score, description) values(13...	1 row(s) affected
2	15:37:51	select * from inspection LIMIT 0, 50000	13 row(s) returned

9. A) Demonstrate adding a new component to Excel 2018beta. This new component is named “Dynamic Table Interface”, version D01, and was written in javascript by person 10400, size = 775.

```
471 -- 9 A --
472 -- Demonstrate adding a new component to Excel 2018beta. This new component is named "Dynamic Table Interface"
473 • insert into programming_language values('JavaScript', 'Current');
474 • select * from programming_language;
475
476
```

language_name	language_status
C	current
C#	current
C++	current
Java	current
JavaScript	current
PHP	current
Python	future

programming_language 25 x

Output

Action Output

#	Time	Action	Message
2	15:40:47	insert into programming_language values('JavaScript', 'Current')	1 row(s) affected
3	15:40:47	select * from programming_language LIMIT 0, 50000	8 row(s) returned

```

477 -- 9 B --
478 • insert into Components(comp_id, comp_name, version, comp_size, prog_language, comp_owner)
479 values(9, 'Dynamic Table Interface', 'D01', 775, 'JavaScript', 10400);
480 •
481 select * from components;

```

Result Grid

comp_id	comp_name	version	comp_size	prog_language	comp_owner	comp_status
5	Chart oenerator	C11	6500	iava	10200	not-readv
3	Dbase Interface	D00	2500	C++	10200	Readv
4	Dbase Interface	D01	2500	C++	10300	Readv
9	Dvnamic Table Interface	D01	775	JavaScript	10400	not-readv
1	Keyboard Driver	K11	1200	C	10100	Readv
7	Math unit	A01	5000	C	10200	usable
8	Math unit	A02	3500	Java	10200	Readv
6	Pen Driver	P01	3575	C	10700	not-readv
2	Touch Screen Driver	T00	4000	C++	10100	Readv
NULL	NULL	NULL	NULL	NULL	NULL	NULL

components 26 x

Output

Action Output

#	Time	Action	Message
1	15:42:27	insert into Components(comp_id, comp_name, version, comp_size, prog_language, comp_owner) values(9, 'Dyn...	1 row(s) affected
2	15:42:27	select * from components LIMIT 0, 50000	9 row(s) returned

B) What is the Excel 2018beta product status?

```

488
489 • select * from software_products;
490

```

Result Grid

name	version	software_status
Excel	2010	Readv
Excel	2015	not-readv
Excel	2018beta	not-readv
Excel	secret	not-readv
NULL	NULL	NULL

software_products29 x

Output

Action Output

#	Time	Action	Message
1	15:46:15	select * from software_products LIMIT 0, 50000	4 row(s) returned

10. A) Demonstrate the adding of an inspection on the component you just added. This inspection occurred on 11/20/2017 by inspector 10500, with a score of 80, and note of “minor fixes needed”.

```

482
483 -- 10 --
484 -- Demonstrate the adding of an inspection on the component you just added. This inspection occurred on 11/
485 • insert into inspection(inspection_id, comp_name, version, inspection_date, by_who, score, description)
486 values(14, "Dynamic Table Interface", "D01", 11/20/2017, 10500, 80, "minor fixes needed");
487 • select * from inspection;
488

```

Result Grid

inspection_id	comp_name	version	inspection_date	by_who	score	description	status
1	Keyboard Driver	K11	2010-02-14 00:00:00	10100	100	leacv code which is already approved	Ready
2	Touch Screen Driver	T00	2017-06-01 00:00:00	10200	95	initial release ready for usage	Ready
3	Dbase Interface	D00	2010-02-22 00:00:00	10100	55	too many hard coded parameters. the software...	not-ready
4	Dbase Interface	D00	2010-02-24 00:00:00	10100	78	improved, but only handles DB2 format	usable
5	Dbase Interface	D00	2010-02-26 00:00:00	10100	95	Okav. handles DB3 format.	Ready
6	Dbase Interface	D00	2010-02-28 00:00:00	10100	100	satisfied	Ready
7	Dbase Interface	D01	2011-05-01 00:00:00	10200	100	Okav ready for use	Ready
8	Pen Driver	P01	2017-07-15 00:00:00	10300	80	Okav ready for beta testing	usable
9	Math unit	A01	2014-06-10 00:00:00	10100	90	almost ready	usable
10	Math unit	A02	2014-06-15 00:00:00	10100	70	Accuracy problems!	not-ready
11	Math unit	A02	2014-06-30 00:00:00	10100	100	Okav problems fixed	Ready
12	Math unit	A02	2016-11-02 00:00:00	10700	100	re-review for new employee to gain experience ...	Ready
13	Pen Driver	P01	0000-00-00 00:00:00	10400	60	needs rework. introduced new errors	not-ready
14	Dynamic Table Inte...	D01	0000-00-00 00:00:00	10500	80	minor fixes needed	usable

inspection 27 x

Output

Action Output

#	Time	Action	Message
1	15:44:12	insert into inspection(inspection_id, comp_name, version, inspection_date, by_who, score, description) values(14, ...	1 row(s) affected
2	15:44:12	select * from inspection LIMIT 0, 50000	14 row(s) returned

B) What is the Excel 2018beta product status?

```

488
489 • select * from software_products;
490

```

Result Grid

name	version	software_status
Excel	2010	Ready
Excel	2015	not-ready
Excel	2018beta	not-ready
Excel	secret	not-ready

software_products29 x

Output

Action Output

#	Time	Action	Message
1	15:46:15	select * from software_products LIMIT 0, 50000	4 row(s) returned

GRADUATE:

11. Person 10700 has decided to leave *OSF* for other employment. Implement a solution for this situation.

- This is under that assumption that when an employee is deleted, his/her inspection work & component ownership must not be invalidated.

- so, purposely not used 'on delete set NULL'
- Just removed row from employee table.
- Put NULL value in 'manager_id' column of another employee, if eligible
- Add that employee in Ex-employee table.

```

503 |
504 | -- 11 --
505 | delete from employees where id = 10700;
506 | select * from employees;

```

Result Grid

id	name	hire_date	mgr_id	seniority
10100	Employee-1	1984-08-11 00:00:00	10100	senior
10200	Employee-2	1994-08-11 00:00:00	10100	senior
10300	Employee-3	2004-08-11 00:00:00	10200	senior
10400	Employee-4	2008-01-11 00:00:00	10200	senior
10500	Employee-5	2015-01-11 00:00:00	10400	junior
10600	Employee-6	2015-01-11 00:00:00	10400	junior
10800	Employee-8	2017-01-11 00:00:00	10200	newbie
NULL	NULL	NULL	NULL	NULL

employees 38 x

Output

Action Output

#	Time	Action	Message
90	16:05:19	delete from employees where id = 10700	1 row(s) affected
91	16:05:41	select * from employees LIMIT 0, 50000	7 row(s) returned

```

507 |
508 | select * from components;
509 |

```

Result Grid

comp_id	comp_name	version	comp_size	prog_language	comp_owner	comp_status
5	Chart generator	C11	6500	java	10200	not-readv
3	Dbase Interface	D00	2500	C++	10200	Readv
4	Dbase Interface	D01	2500	C++	10300	Readv
9	Dvnamc Table Interface	D01	775	JavaScript	10400	usable
1	Keyboard Driver	K11	1200	C	10100	Readv
7	Math unit	A01	5000	C	10200	usable
8	Math unit	A02	3500	Java	10200	Readv
6	Pen Driver	P01	3575	C	10700	not-readv
2	Touch Screen Driver	T00	4000	C++	10100	Readv
NULL	NULL	NULL	NULL	NULL	NULL	NULL

components 39 x

Output

Action Output

#	Time	Action	Message
91	16:05:41	select * from employees LIMIT 0, 50000	7 row(s) returned
92	16:07:09	select * from components LIMIT 0, 50000	9 row(s) returned

```
510 • select * from inspection;
```

Result Grid

inspection_id	comp_name	version	inspection_date	by_who	score	description	status
1	Keyboard Driver	K11	2010-02-14 00:00:00	10100	100	legacy code which is already approved	Ready
2	Touch Screen Driver	T00	2017-06-01 00:00:00	10200	95	initial release ready for use	Ready
3	Dbase Interface	D00	2010-02-22 00:00:00	10100	55	too many hard coded parameters, the software...	not-ready
4	Dbase Interface	D00	2010-02-24 00:00:00	10100	78	improved, but only handles DB2 format	usable
5	Dbase Interface	D00	2010-02-26 00:00:00	10100	95	Okav, handles DB3 format.	Ready
6	Dbase Interface	D00	2010-02-28 00:00:00	10100	100	satisfied	Ready
7	Dbase Interface	D01	2011-05-01 00:00:00	10200	100	Okav ready for use	Ready
8	Pen Driver	P01	2017-07-15 00:00:00	10300	80	Okav ready for beta testing	usable
9	Math unit	A01	2014-06-10 00:00:00	10100	90	almost ready	usable
10	Math unit	A02	2014-06-15 00:00:00	10100	70	Accuracy problems!	not-ready
11	Math unit	A02	2014-06-30 00:00:00	10100	100	Okav problems fixed	Ready
12	Math unit	A02	2016-11-02 00:00:00	10700	100	re-review for new employee to gain experience ...	Ready
13	Pen Driver	P01	0000-00-00 00:00:00	10400	60	needs rework, introduced new errors	not-ready
14	Dynamic Table Inte...	D01	0000-00-00 00:00:00	10500	80	minor fixes needed	usable

inspection 40 x

Output

Action Output

#	Time	Action	Message
92	16:07:09	select * from components LIMIT 0, 50000	9 row(s) returned
93	16:08:00	select * from inspection LIMIT 0, 50000	14 row(s) returned

```
521
522 -- 11 --
523 • delete from employees where id = 10700;
524 • select * from EXemployee;
```

Result Grid

id	name	leftDate
10700	Employee-7	2017-12-06 00:00:00

EXemployee 46 x

Output

Action Output

#	Time	Action	Message
88	17:10:24	delete from employees where id = 10700	1 row(s) affected
89	17:10:30	select * from EXemployee LIMIT 0, 50000	1 row(s) returned

(END)