--3.1

```
SELECT COUNT(*) AS "Number of rows "
FROM CourseGrade
```

Number of rows
19

(1 row affected)

--3.2

```
SELECT COUNT(ALL grade) AS " Number of grades" FROM CourseGrade
```

Number of gades
17

(1 row affected)

<mark>** COUNT (ALL *column_name*): returns the number of the non-null values</mark>

--3.3

```
SELECT COUNT(*) AS "Teachers who earn more than 16000" FROM Teacher WHERE salary >
16000
```

Teachers who earn more than 16000
3

(1 row affected)

--3.4

```
SELECT MAX(salary) as "Maximum salary", MIN(salary) as "Minimum salary", AVG (DISTINCT
salary) as "Average salary", SUM(salary) as "Total of salary"
FROM Teacher
```

Maximum salary	Minimum salary	Average salary	Total of salary
25000.00	2550.75	14480.416666	130323.75

(1 row affected)

--3.5a

```
SELECT AVG(grade * 1.0) as "Average grade" FROM Coursegrade
```

Average grade
2.941176

(1 row affected)

--3.5b

```
SELECT CAST(AVG(grade*1.0) as DECIMAL(4,2)) as "Average grade"  FROM CourseGrade
```

Average grade

2.94

(1 row affected)

--3.5c

```sql
SELECT CAST(AVG(grade*1.0) as DECIMAL(2,0)) as "Average grade" FROM CourseGrade
```

Average grade
3

(1 row affected)

--3.6

```sql
SELECT COUNT(grade) AS "Number of grade 3" FROM CourseGrade WHERE grade = 3
```

Number of grade 3
5

(1 row affected)

--3.7

```sql
SELECT CAST(AVG(grade*1.0) AS DECIMAL(4,2)) as "o473 Average grade" FROM CourseGrade
WHERE student_number = 'o473'
```

o473 Average grade
1.67

(1 row affected)

--3.8

```sql
SELECT COUNT(first_name) AS "First names starting with K" FROM Student WHERE
first_name LIKE 'K%'
```

First names starting with 'K'
3

(1 row affected)

--3.9

```sql
SELECT COUNT( DISTINCT surname) AS "Different surnames starting with 'T'" FROM Teacher
WHERE surname LIKE 'T%'
```

Different surnames starting with 'T'
1

(1 row affected)

--String Handling

--3.10

```sql
SELECT CONCAT(LOWER(first_name),'.',LOWER(surname),'@takkula.fi') AS 'Default email'
FROM Student ORDER BY [Default email] ASC
```

Default email
fredrik.leino@takkula.fi
greta.hullerus@takkula.fi
kaarina.käki@takkula.fi
kaarlo.kuikka@takkula.fi
kuikka.kaarlo@takkula.fi
leila.liimatta@takkula.fi

(13 rows affected)

--3.11

```sql
SELECT DATENAME(MONTH, birth_date) AS 'Month name', surname, first_name,
student_number FROm Student ORDER BY MONTH(birth_date) ASC, surname ASC, first_name
ASC, student_number ASC
```

Month name	surname	first_name	student_number
February	Kaarlo	Kuikka	o889
March	Hullerus	Greta	o558
March	Keto	Martti	o649
March	Liimatta	Leila	o410
April	Käki	Kaarina	o348
May	Huhta	Usko	o354
May	Keto	Matti	o349
May	Laine	Rosina	o654
August	Kuikka	Kaarlo	o210
October	Rentukka	Sanna	o148
October	Vuori	Valma	o548
November	Leino	Fredrik	o473
December	Veto	Raimo	o298

(13 rows affected)

--3.12

```sql
SELECT COUNT(*) AS 'Number of students born in May' FROM Student WHERE DATENAME(MONTH,
birth_date) = 'May'
```

Number of students born in May
3

(1 row affected)

--3.13

```sql
SELECT DATENAME(QUARTER, start_date) AS 'Quarter', start_date, course_code,
instance_number FROM CourseInstance ORDER BY Quarter, start_date, course_code
```

Quarter	start_date	course_code	instance_number
1	2007-01-03	a450	1
1	2007-02-10	a480	1
1	2007-03-15	a730	1
1	2008-01-01	a450	3
1	2008-01-15	a480	2
1	2008-02-02	a290	2
1	2014-01-15	a730	4
3	2007-08-01	a290	1
3	2007-08-20	a730	2
3	2009-08-21	a450	4
4	2007-10-01	a730	3
4	2007-12-01	a450	2

(12 rows affected)

--3.14
```sql
SELECT MONTH(birth_date) AS 'Month', DATENAME(DAY, birth_date) AS 'Day', surname,
first_name, student_number FROM Student ORDER BY Month, Day, surname, first_name,
student_number
```

Month	Day	surname	first_name	student_number
2	27	Kaarlo	Kuikka	o889
3	28	Hullerus	Greta	o558
3	28	Keto	Martti	o649
3	3	Liimatta	Leila	o410
4	3	Käki	Kaarina	o348
5	17	Keto	Matti	o349
5	22	Huhta	Usko	o354
5	7	Laine	Rosina	o654
8	31	Kuikka	Kaarlo	o210
10	10	Vuori	Valma	o548
10	22	Rentukka	Sanna	o148
11	22	Leino	Fredrik	o473
12	1	Veto	Raimo	o298

(13 rows affected)

--3.15
```sql
SELECT COUNT(*) AS 'Number of students born on Sunday' FROM Student WHERE
DATENAME(WEEKDAY,birth_date) = 'Sunday'
```

Number of students born on Sunday
2

(1 row affected)

--3.16

-- GETDATE returns the current date and time as DATETIME but SYSDATETIME returns a
DATETIME2 value, which is more precise. DATETIME is commonly used as higher precision
corresponds to lower efficiency(marginally) in case of SYSDATETIME

```sql
SELECT LEFT(SYSDATETIME(),10) AS 'Current date', DATENAME(WEEKDAY, GETDATE()) AS
'Weekday'
```

Current date	Weekday
2021-10-04	Monday

(1 row affected)

--3.17
```sql
SELECT DATEDIFF(DAY, start_date,end_date) AS 'Course length', course_code,
instance_number FROM CourseInstance
WHERE start_date IS NOT NULL AND end_date IS NOT NULL ORDER BY [Course length],
course_code, instance_number ASC
```

Course length	course_code	instance_number
39	a480	2
45	a290	1
46	a730	2
50	a730	3
53	a450	1
71	a450	2
71	a480	1
76	a730	1
115	a450	4

--3.18
```
SELECT DATEDIFF(YEAR,birth_date, GETDATE()) AS 'Age', surname, first_name,
student_number FROM Student ORDER BY Age DESC, surname ASC, first_name ASC,
student_number ASC
```

Age	surname	first_name	student_number
54	Kaarlo	Kuikka	o889
52	Liimatta	Leila	o410
44	Hullerus	Greta	o558
44	Keto	Martti	o649
44	Veto	Raimo	o298
43	Laine	Rosina	o654
41	Kuikka	Kaarlo	o210
40	Huhta	Usko	o354
37	Vuori	Valma	o548
36	Käki	Kaarina	o348
36	Rentukka	Sanna	o148
35	Keto	Matti	o349
35	Leino	Fredrik	o473

```
(13 rows affected)
```

--3.19
```
SELECT student_number, surname, first_name, email FROM Student WHERE
CHARINDEX('takkula.fi', email) = 0 OR email IS NULL ORDER BY student_number ASC
```

student_number	surname	first_name	email
o148	Rentukka	Sanna	sanna@gmail.com
o473	Leino	Fredrik	NULL
o548	Vuori	Valma	valma@gmail.com
o649	Keto	Martti	martti@jeps.fi
o889	Kaarlo	Kuikka	NULL

```
(5 rows affected)
```

--3.20
```
SELECT DISTINCT SUBSTRING(email, CHARINDEX('@',email)+1, len(email)) AS 'Domain name'
FROM Student  WHERE email IS NOT NULL ORDER BY [Domain name] ASC
```

Domain name
gmail.com
jeps.fi
takkula.fi

--3.21
```
SELECT CAST(AVG(DATEDIFF(DAY, start_date,end_date)*1.0) as DECIMAL(2,0)) AS 'Course
instance length' FROM CourseInstance
```

Course instance length
63

```
(1 row affected)
```