LAB 5 Notes

Outline

- We will continue our discussion on SQL
- We will discuss the java program
- Any questions on the project (Discuss)

1) ANY, ALL

```
SELECT [DISTINCT]
FROM from-list
WHERE attribute <=!> ALL/ANY (SELECT attribute
                              FROM X
                               )
```

Set comparison operator (union compatibility)

“Find the oldest employee”

We have already seen

```
SELECT *
FROM Employee e
WHERE e.age = (SELECT MAX(age) FROM EMPLOYEE);
```

OR

```
SELECT *
FROM EMPLOYEE
WHERE E.age > ALL (SELECT E2.age FROM
                   EMPLOYEE E2
                   WHERE E2.ssn!=E.ssn);
```

*** ALL => ALL in the set**
*** ANY => At least 1 in the set**
ANY HERE WOULD PRODUCE: Find employees who’s age is bigger than AT least somebody’s else age.

2) GROUP BY and HAVING CLAUSE

```
SELECT [DISTINCT] a, b, c…z, SUM(A),
FROM from-list
WHERE qualification
GROUP BY a, b, c…z,
HAVING qualification-on-grouping
```

Query: Find the age of the youngest sailor who is eligible to vote (older than 18 years) for each group with at least 2 such sailors.

```
SELECT group, MIN(age)
FROM Sailor
WHERE age>18
GROUP BY group
HAVING COUNT(*)>1;
```

1	Chris	20	1
2	Chris	35	2
3	Chris	19	1
4	John	15	2

Until where

result

1	20
2	35
1	19

Until group by

1	20
1	19
2	35

Until Having

1	19

3) NULLs

unknown or *inapplicable*.

Student(ssn, name, age, addressed)
1321, “John”, null
1421, “John”, 15
1521, “John”, 10
1621, “John”, 15

```
SELECT AVG(age)
FROM Student
```

➔ 15+10+15+0 /4 = 10

```
SELECT AVG(age)
FROM Student
WHERE age IS NOT NULL
```

➔ 15 + 10 + 15 /4 = 13,33

Find all student that don’t have their age in the system

```
SELECT * FROM Student WHERE AGE IS NULL;
```

GO OVER JAVA EMBEDDEDSQL IN LAB