

SQL: SELECT, FROM, WHERE

COMS10012 Software Tools

SELECT



SELECT

```
SELECT <columns> FROM <tables>  
[WHERE <conditions>];
```

```
<columns> ::= * | <column> [,<column>...]  
<tables> ::= <table> [,<table>...]
```

SELECT

```
SELECT id, title, cp FROM Unit;
```

id	title	cp
11	Databases	10
12	Web Technologies	10
13	Programming and Algorithms	20
14	Computer Architecture	30
15	Overview of Computer Architecture	20
16	Security 101	10

DISTINCT

```
SELECT cp  
FROM Unit;
```

cp
10
10
20
30
20
10

```
SELECT DISTINCT cp  
FROM Unit;
```

cp
10
20
30

Aliasing (part 1)

```
<column> ::= <name> [[AS] <alias>]  
           | ...    [[AS] <alias>]
```

```
SELECT username AS u,  
       CONCAT(name, ' ', username) AS name,  
       rgroup AS "Research Group"  
FROM Lecturer;
```

WHERE



WHERE

WHERE <condition>

<condition> ::= <condition> [**AND**|**OR**] <condition>
| **NOT** <condition>
| <column> <op> <value>
| <column> <op> <column>
| <column> **IS** [**NOT**] **NULL**
| ...

<op> ::= < | > | <= | >= | = | <> | **LIKE**

WHERE

```
SELECT id, title FROM Unit  
WHERE (level = '3' OR level = 'M')  
AND director = 36;
```

IN (part 1)

```
<condition> ::= ...  
    | <column> [NOT] IN (<values>)
```

```
SELECT username FROM Student  
WHERE cohort IN  
( 'G400', 'G401', 'G403', 'MS50' );
```

LIKE

```
<condition> ::= ...  
    | <column> [NOT] LIKE <pattern>
```

```
SELECT username FROM Student  
WHERE name LIKE 'D%';
```



Functions

```
SELECT id FROM Lecturer  
WHERE UPPER(name) = 'DAVID';
```

```
SELECT id FROM Lecturer  
WHERE SUBSTRING(name,1,5) = 'David';
```



Aliasing (part 2)

```
SELECT id, name FROM Lecturer L
WHERE L.name = 'David';
```

```
<table> ::= <name>          [[AS] <alias>]
          | (SELECT ...)    [[AS] <alias>]
          | ...              [[AS] <alias>]
```

