1 Overview

```
SELECT <attributes>
  FROM <tablenames>
 WHERE <condition>;
```

- `<attributes>` - the attributes to select
- `<tablenames>` - the table names to select from
- `<condition>` is a boolean expression on the attributes of the table

2 WHERE Condition

- `<>` ≡ not equals
- other operators include `<,>,<=,>=, BETWEEN`. (`BETWEEN` is inclusive.)

```
... WHERE max_credits BETWEEN 3 AND 6;
```

- compound expressions: `AND, OR, NOT`
- Testing for `NULL`: must use `IS NULL` or `IS NOT NULL`
- `LIKE` and `NOT LIKE`

```
... WHERE instructor LIKE 'Paint%';
```

- `IN`

```
... WHERE x IN (1, 2, 3);
```

3 Select Statements

3.1 Selecting Expressions on Attributes

```
SELECT 42 / 13 + 12; -- selects 15 (integer math)
SELECT a || ' ' || b || ' ' || c FROM foo; -- string concatenation
SELECT substring(a FROM 1 FOR 4) FROM foo; -- first four characters
```

3.2 Names and Aliasing

`AS` - used for renaming

```
SELECT substring(foo FROM 1 FOR 4) as f, bar as b FROM baz;
```

3.3 Schemas

```
-- given "project1" in cpainter and "project1" in public
SELECT * FROM public.project1; -- selets the public one
```

3.4 Misc

```
SELECT count(*) FROM mines_courses_meetings;
SELECT DISTINCT a1, a2, a3 ...
```

4 Joins

```
SELECT * FROM A, B WHERE A.x = B.x;
SELECT * FROM A JOIN B ON B.x = A.x; -- using join syntax
```

5 Order By

```
... ORDER BY attr DESC/ASC
```

6 Table Creation

```
CREATE TABLE [schema_name.]table_name
(
    attribute1 type1 NOT NULL, -- you can add constraints
    attribute2 type2 PRIMARY KEY,
    attribute3 type3
)
```

7 Examples

```
SELECT mc.instructor, mc.course_id,
       mef.office, mef.email
  FROM mines_courses as mc, mines_eecs.faculty AS mec
 WHERE mc.instructor = mef.name;
```

```
SELECT * FROM foo WHERE bar = 3 ORDER BY alpha, beta, gamma;
```