Stephanie Frost
CMPT 898 Milestone 3
Instructor:
Dr. Ray Spiteri

Software Carpentry Highlights

Databases

Person Table

FirstName	LastName	LoginID
Dian	Fossey	dian
Maria	Michell	mm
Dmitri	Mendeleev	dmitri
Henry	Taube	taube
Frederick	Banting	fban
William	Herschel	herschel
Jane	Goodall	jane
Sofia	Kovalevskaya	skol
Mikhail	Lomonosov	mlom
Charles	Best	best
Ivan	Pavlov	ivan

ExperimentDetails Table

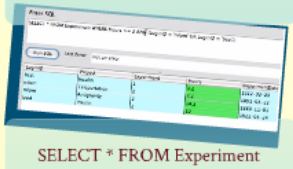
Project	Experiment	ExperimentName	Location
Time Travel	1	EM Cloaking	Philadelphia
Antigravity	1	Rotating superconduc...	New Zealand
Antigravity	2	Gravitoelectric coupling	Huntsville, Alabama
Great Apes	1	Feeding Observations	Tanzania
Infrared	1	Sun spot observation	UK
Insulin	1	Pancreatic duct isolati...	Toronto, Canada
Insulin	2	Extract isolation	Toronto, Canada
Teleportation	1	Macroscopic entangle...	Denmark

Experiment Table

LoginID	Project	Experiment	Hours	ExperimentDate
best	Insulin	1	5.2	1922-08-28
ivan	Time Travel	2	-1.5	1910-07-05
dian	Great Apes	1	15	1967-04-12
fban	Insulin	1	5.5	1922-08-28
mlom	Antigravity	1	1.5	1889-11-10
fban	Insulin	2	1.2	1922-08-24
taube	Redox Reaction	2	2	1942-12-04
ivan	Teleportation	3	7	1891-02-17
skol	Teleportation	2	14	1891-01-28
dmitri	Teleportation	1	7	1891-01-22
jane	Great Apes	1	7	1967-04-13
skol	Time Travel	1	-17.5	1900-07-05
herschel	Infrared	1	7	1798-08-12
taube	Redox Reaction	1	5	1942-11-17

SQL as a Pipeline

```
SELECT * FROM Experiment
WHERE Hours >= 3
AND (LoginID = 'mlom' OR
LoginID = 'best');
```



```
SELECT * FROM Experiment
WHERE Hours >= 3
AND LoginID IN
('mlom','best');
```

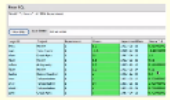
Nested Query Example

- want all Scientists NOT working on Time Travel (LoginID)

```
SELECT DISTINCT LoginID
FROM Experiment
WHERE
    Project != 'Time Travel';
```

Appending

- Suppose that 10% of the Experiment Hours is preparation time, which must be accounted for separately.
- Append a new column which shows the 10%



All Scientists NOT working on Time Travel

```
SELECT DISTINCT LoginID FROM Experiment
WHERE LoginID NOT IN
(SELECT DISTINCT LoginID FROM Experiment
WHERE Project = 'Time Travel');
```

working on time travel

Prezi

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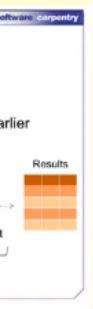
Insulin	1	Pancreatic duct isolati...	Toronto, Canada
Insulin	2	Extract isolation	Toronto, Canada
Teleportation	1	Macroscopic entangle...	Denmark

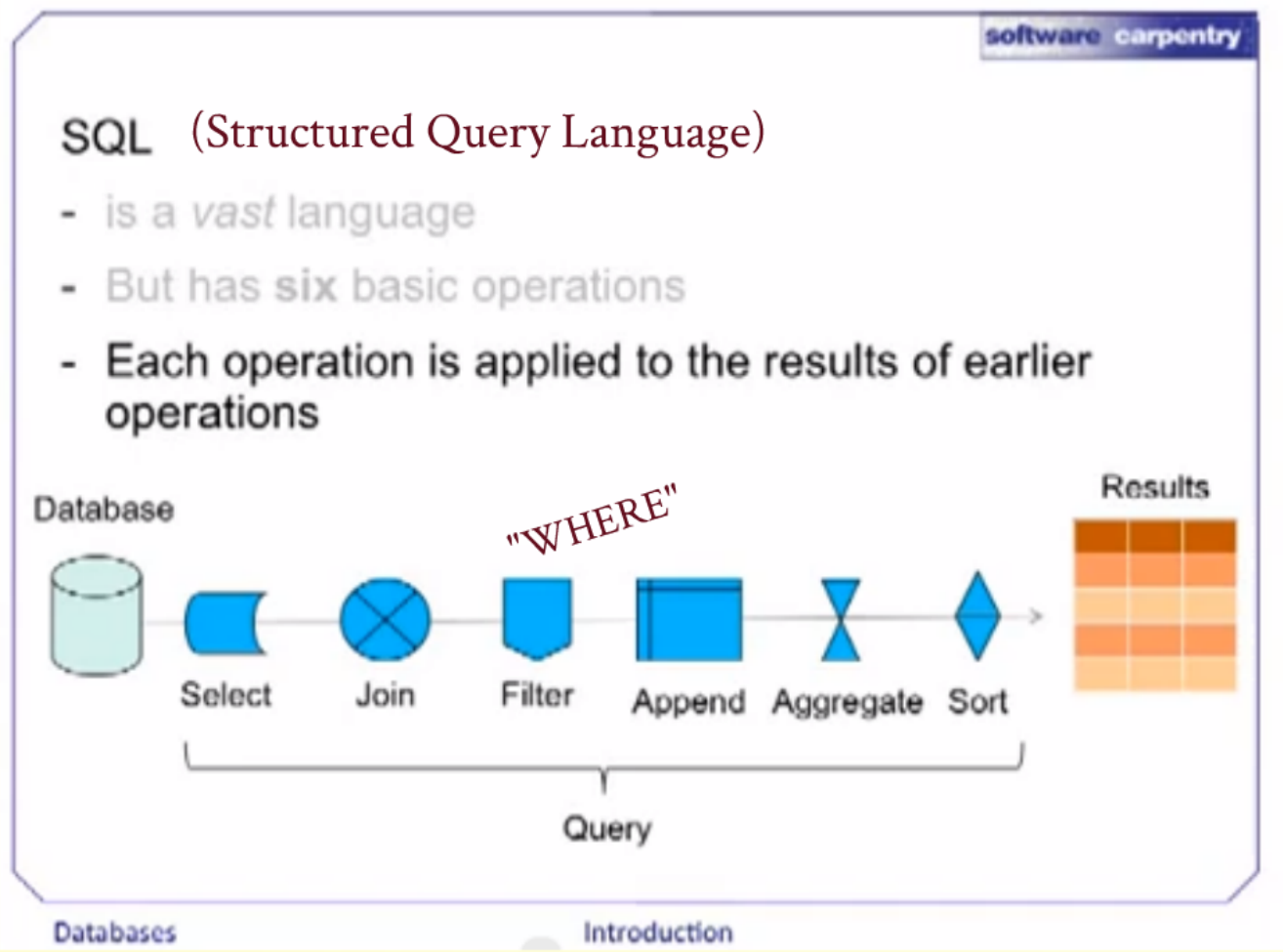
Experiment Table

LoginID	Project	Experiment	Hours	ExperimentDate
best	Insulin	1	3.2	1922-03-23
ivan	Time Travel	2	-1.5	1910-07-05
dian	Great Apes	1	15	1967-04-12
fban	Insulin	1	5.5	1922-03-23
mlom	Antigravity	1	1.5	1889-11-10
fban	Insulin	2	1.2	1922-03-24
taube	Redox Reaction	2	2	1942-12-04
ivan	Teleportation	3	7	1891-02-17
skol	Teleportation	2	14	1891-01-23
dmitri	Teleportation	1	7	1891-01-22
jane	Great Apes	1	7	1967-04-13
skol	Time Travel	1	-17.5	1900-07-05
herschel	Infrared	1	7	1798-08-12
taube	Redox Reaction	1	5	1942-11-17



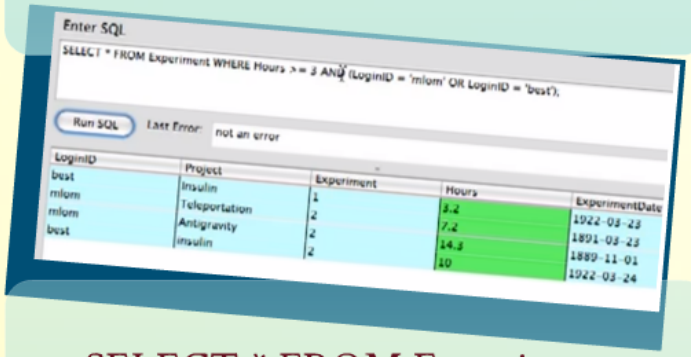
Prezi

SQL as a Pipeline



Prezi

```
SELECT * FROM Experiment
WHERE Hours >= 3
AND (LoginID = 'mlom' OR
LoginID = 'best');
```




```
SELECT * FROM Experiment
WHERE Hours >= 3
AND LoginID IN
('mlom','best');
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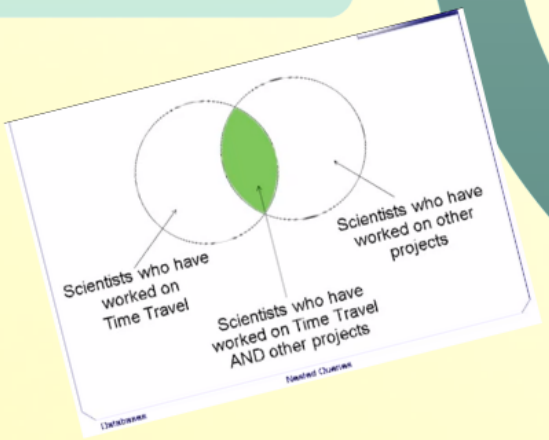

Nested Query Example

- want all Scientists (LoginID) NOT working on Time Travel

```
SELECT DISTINCT LoginID
FROM Experiment
WHERE
  Project != 'Time Travel';
```

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dmitri	Teleportation	1	7	1891-01-22	0.70000000
jane	Great Apes	1	7	1967-04-13	0.70000000

All Scientists NOT working on Time Travel

```
SELECT DISTINCT LoginID FROM Experiment
WHERE LoginID NOT IN
 (SELECT DISTINCT LoginID FROM Experiment
 WHERE Project = 'Time Travel');
```

working on time travel

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Appending

- Suppose that 10% of the Experiment Hours is preparation time, which must be accounted for separately.
- Append a new column which shows the 10%

Enter SQL

```
SELECT *, Hours * .1 FROM Experiment;
```

Run SQL Last Error: not an error

LoginID	Project	Experiment	Hours	ExperimentDate	Hours * .1
best	Insulin	1	3.2	1922-03-23	0.32000000
ivan	Time Travel	2	-1.5	1910-07-05	-0.1500000
dian	Great Apes	1	15	1967-04-12	1.5
fban	Insulin	1	5.5	1922-03-23	0.55
mlom	Antigravity	1	1.5	1889-11-10	0.15000000
fban	Insulin	2	1.2	1922-03-24	0.12
taube	Redox Reaction	2	2	1942-12-04	0.2
ivan	Teleportation	3	7	1891-02-17	0.70000000
skol	Teleportation	2	14	1891-01-23	1.40000000
dmitri	Teleportation	1	7	1891-01-22	0.70000000
jane	Great Apes	1	7	1967-04-13	0.70000000

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