Spreadsheet

	A	B	C	D	E
1	ProjectId	ExperimentId	NumInvolved	ExperimentDate	Hours
2	1214	1	1		1.5
3	1214	2	1	1889-11-01	14.3
4	1709	1	3	1891-01-22	7
5	1709	2	1	1891-02-23	7.2
6	1737	1	1	1900-07-05	-1
7	1737	2	2	1900-07-05	-1.5
8					
9					27.5

Spreadsheet

	A	B	C	D	E
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SQL

SELECT SUM(hours) FROM experiment

27.5

Microsoft's Excel Might Be The Most Dangerous Software On The Planet

~ Forbes

SQL: Structured Query Language

SQL: Structured Query Language

- Fast

- Lots of data

- Complex relationships

- Readability & Computability

SQL: Structured Query Language

SELECT login FROM people

	A	B	C
1	login	LastName	FirstName
2	skol	Kovalevskaya	Sofia
3	mlom	Lomonosov	Mikhail
4	dmitri	Mendeleev	Dmitri
5	ivan	Pavlov	Ivan

SQL: Structured Query Language

SELECT login FROM people

SELECT data FROM someTable(s)

	A	B	C
1	login	LastName	FirstName
2	skol	Kovalevskaya	Sofia
3	mlom	Lomonosov	Mikhail
4	dmitri	Mendeleev	Dmitri
5	ivan	Pavlov	Ivan

SQL: Structured Query Language

SELECT login FROM people

SELECT data FROM someTable(s) WHERE a condition is met

	A	B	C
1	login	LastName	FirstName
2	skol	Kovalevskaya	Sofia
3	mlom	Lomonosov	Mikhail
4	dmitri	Mendeleev	Dmitri
5	ivan	Pavlov	Ivan

Pipelined Data

- Select

- Filter: hours > 5

- Sort: Order By projectId

- Aggregate: avg(hours)

- Appending: hours * 0.1

Query Anatomy

SELECT field1, field2...

FROM table1, table2...

WHERE condition1, condition2,...

Try Yourself

JOIN: Combining Tables

Experiment

	A	B	C	D	E
1	ProjectId	ExperimentId	NumInvolved	ExperimentDate	Hours
2	1214	1	1		1.5
3	1214	2	1	1889-11-01	14.3
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Project

	A	B
1	ProjectId	ProjectName
2	1214	Antigravity
3	1709	Teleportation
4	1737	Time Travel

	A	B	C	D	E	F
1	ProjectId	ExperimentId	NumInvolved	ExperimentDate	Hours	ProjectName
2	1214	1	1		1.5	Antigravity
3	1214	2	1	1889-11-01	14.3	Antigravity
4	1709	1	3	1891-01-22	7	Teleportation
5	1709	2	1	1891-02-23	7.2	Teleportation
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JOIN: Combining Tables

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Project

	A	B
1	ProjectId	ProjectName
2	1214	Antigravity
3	1709	Teleportation
4	1737	Time Travel

SELECT * FROM Experiment
JOIN Project
ON Experiment.ProjectId = Project.ProjectId

	A	B	C	D	E	F
1	ProjectId	ExperimentId	NumInvolved	ExperimentDate	Hours	ProjectName
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