

ROP Class Outline: Databases and Data Analysis

- ▶ Data models
- ▶ The concept of relational tables
- ▶ Relational tables as a preferred data store
- ▶ A language to query relational data (SQL)
- ▶ SQL Basics:
 - ▶ the **SELECT** command
 - ▶ the **WHERE** command

- ▶ Further restrictions with WHERE
- ▶ Using BETWEEN
- ▶ Using DISTINCT
- ▶ Working with dates using EXTRACT
- ▶ An introduction to aggregate functions
 - ▶ COUNT(*)
 - ▶ COUNT DISTINCT
 - ▶ SUM
 - ▶ AVG
- ▶ An introduction to GROUP BY

- ▶ How to use the GROUP BY operator
- ▶ SUM and COUNT(*) with GROUP BY for some person or location.
- ▶ An introduction to joins
 - ▶ INNER JOIN
 - ▶ LEFT OUTER JOIN
 - ▶ FULL OUTER JOIN

- ▶ Putting it all together: Select, aggregate functions, restrictions and joins.
- ▶ Wrap up: questions on further functionality of SQL
- ▶ A high-level look at statistics and R