

SQL

SELECT Statement

- ✕ Used for queries on single or multiple tables

- ✕ Clauses of the SELECT statement:

- + SELECT**

- ✕ List the columns (and expressions) to be returned from the query

- + FROM**

- ✕ Indicate the table(s) or view(s) from which data will be obtained

- + WHERE**

- ✕ Indicate the conditions under which a row will be included in the result

- + GROUP BY**

- ✕ Indicate categorization of results

- + HAVING**

- ✕ Indicate the conditions under which a category (group) will be included

- + ORDER BY**

- ✕ Sorts the result according to specified criteria

SQL Query

Basic form: (plus many many more bells and whistles)

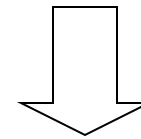
```
SELECT <attributes>  
FROM   <one or more relations>  
WHERE  <conditions>
```

Simple SQL Query

Product

PName	Price	Category	Manufacturer
Gizmo	\$19.99	Gadgets	GizmoWorks
Powergizmo	\$29.99	Gadgets	GizmoWorks
SingleTouch	\$149.99	Photography	Canon
MultiTouch	\$203.99	Household	Hitachi

```
SELECT *  
FROM Product  
WHERE category='Gadgets'
```



“selection”

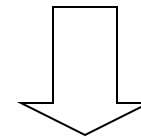
PName	Price	Category	Manufacturer
Gizmo	\$19.99	Gadgets	GizmoWorks
Powergizmo	\$29.99	Gadgets	GizmoWorks

Simple SQL Query

Product

PName	Price	Category	Manufacturer
Gizmo	\$19.99	Gadgets	GizmoWorks
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SingleTouch	\$149.99	Photography	Canon
MultiTouch	\$203.99	Household	Hitachi

```
SELECT PName, Price, Manufacturer
FROM   Product
WHERE  Price > 100
```



“selection” and
“projection”

PName	Price	Manufacturer
SingleTouch	\$149.99	Canon
MultiTouch	\$203.99	Hitachi

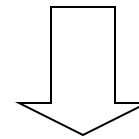
Notation



Input Schema

Product(PName, Price, Category, Manufacturer)

```
SELECT PName, Price, Manufacturer
FROM   Product
WHERE  Price > 100
```



Answer(PName, Price, Manufacturer)



Output Schema

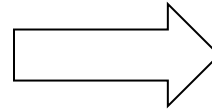
The **LIKE** operator

```
SELECT *  
FROM Products  
WHERE PName LIKE '%gizmo%'
```

- s **LIKE** p: pattern matching on strings
- p may contain two special symbols:
 - % = any sequence of characters
 - _ = any single character

Eliminating Duplicates

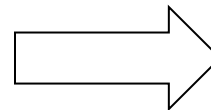
```
SELECT DISTINCT category  
FROM Product
```



Category
Gadgets
Photography
Household

Compare to:

```
SELECT category  
FROM Product
```



Category
Gadgets
Gadgets
Photography
Household