# Introduction to SQL SELECT

# SELECT

Retrieves rows from tables

```
SELECT column_name1, column_name2, FROM table_name;
```

# SELECT

## Syntax

```
SELECT column_name1, column_name2, FROM table_name;
```

| id [PK] integer | title text | author text | genre text | year integer |
|---|---|---|---|---|
| 1 | Frankenstein | Mary Shelley | Novel | 1818 |
| 2 | The Great Gatsby | F. Scott Fitzgerald | Novel | 1925 |
| 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
| 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

SQL with Python

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## Example

```sql
SELECT title, author FROM books;
```

| | title<br>text 🔒 | author<br>text 🔒 |
|---|---|---|
| 1 | Frankenstein | Mary Shelley |
| 2 | The Great Gatsby | F. Scott Fitzgerald |
| 3 | Big Fish | Daniel Wallace |
| 4 | Don Quixote | Miguel de Cervantes |

**SQL with Python**

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## Columns are ordered

| id [PK] integer | | title text | author text | genre text | year integer |
|---|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
| 2 | 2 | The Great Gatsby | F. Scott Fitzgerald | Novel | 1925 |
| 3 | 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
| 4 | 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

## Result Set

## Example

`SELECT author, title FROM books;`

| | author text | title text |
|---|---|---|
| 1 | Mary Shelley | Frankenstein |
| 2 | F. Scott Fitzgerald | The Great Gatsby |
| 3 | Daniel Wallace | Big Fish |
| 4 | Miguel de Cervantes | Don Quixote |

# SELECT

**SQL with Python**

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## Columns are ordered

| id<br>[PK] integer | title<br>text | author<br>text | genre<br>text | year<br>integer |
|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
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| 3 | 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
| 4 | 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

## Result Set

## Example

`SELECT author, title FROM books;`

| author<br>text | title<br>text |
|---|---|
| 1 | Mary Shelley | Frankenstein |
| 2 | F. Scott Fitzgerald | The Great Gatsby |
| 3 | Daniel Wallace | Big Fish |
| 4 | Miguel de Cervantes | Don Quixote |

# SELECT as

Result set columns can be aliased to a different name using the **as** keyword

If no alias is provided, result set uses original table column names

| id [PK] integer | title text | author text | genre text | year integer |
|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
| 2 | 2 | The Great Gatsby | F. Scott Fitzgerald | Novel | 1925 |
| 3 | 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
| 4 | 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

Example

```
SELECT author as book_author  title as book_title FROM books;
```

| | book_author text | book_title text |
|---|---|---|
| 1 | Mary Shelley | Frankenstein |
| 2 | F. Scott Fitzgerald | The Great Gatsby |
| 3 | Daniel Wallace | Big Fish |
| 4 | Miguel de Cervantes | Don Quixote |

# Aliasing table names

Query can alias table names (without using the **as** keyword)

Improves readability in complex queries

Best practice

| id [PK] integer | title text | author text | genre text | year integer |
|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
| 2 | 2 | The Great Gatsby | F. Scott Fitzgerald | Novel | 1925 |
| 3 | 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
| 4 | 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

## Example

```
SELECT b.author as book_author, b.title as book_title FROM books b;
```

## Result Set

| | book_author text | book_title text |
|---|---|---|
| 1 | Mary Shelley | Frankenstein |
| 2 | F. Scott Fitzgerald | The Great Gatsby |
| 3 | Daniel Wallace | Big Fish |
| 4 | Miguel de Cervantes | Don Quixote |

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|---|---|---|---|---|---|
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| 4 | 4 | Don Quixote | Miguel de Cervantes | Novel | 1605 |

## Result Set

| | book_author text | book_title text |
|---|---|---|
| 1 | Mary Shelley | Frankenstein |
| 2 | F. Scott Fitzgerald | The Great Gatsby |
| 3 | Daniel Wallace | Big Fish |
| 4 | Miguel de Cervantes | Don Quixote |

## Example

```
SELECT b.author as book_author, b.title as book_title FROM books b;
```

# SELECT *

Wildcard asterisk (*)
selects all columns from table

Bad practice because:
1. Explicit is better than implicit
2. Bloats result set
3. Poor performance

Example

```
SELECT * from books;
```

| id [PK] integer | title text | author text | genre text | year integer |
|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
| 2 | 2 | The Great Gatsby | F. Scott Fitzgerald | Novel | 1925 |
| 3 | 3 | Big Fish | Daniel Wallace | Magical Realism | 1998 |
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Result Set

| id [PK] integer | title text | author text | genre text | year integer |
|---|---|---|---|---|
| 1 | 1 | Frankenstein | Mary Shelley | Novel | 1818 |
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