# Query Explanations

1. Give the First and Last name of the authors of books that are part of a series

```
select distinct a.first_name, a.last_name
from author a, book b, book_author ba
where b.series_id > 1 and b.isbn = ba.isbn and ba.author_id = a.author_id;
```

Answer is 3 rows:

| First_name | Last_name |
|---|---|
| Joanne | Rowling |
| Suzanne | Collins |
| William | Shakespeare |

Explanation:
First, we compare all books with a series id greater than 1 to find all books attached with a series since the series_id of 1 indicates no series. Then we match the book isbn to the book_author isbn and from the book_author id to the author id since there is a many-to-many relationship between books and authors. Finally we select the first and last name distinctly since multiple books from an author may be a part of a series.

2. List the ISBN and Title of books that are not part of a series

```
select b.title, b.isbn
from book b
where b.series_id = 1;
```

Answer is 3 rows:

| ISBN | Title |
|---|---|
| 9780451526342 | Animal Farm |
| 9780135957059 | The Pragmatic Programmer: Your Journey To Mastery |
| 9780553214208 | From the Earth to the Moon |

Explanation:
We take the ISBN and Titles from the book table and compare them for the ones that are not part of a series.

3. List the title and publishing date of books sorted by publishing dates from earliest to latest

```
select b.title, b.publish_date
from book b
order by b.publish_date asc;
```

Answer is 7 rows:

| Title | Publishing date |
|---|---|
| From the Earth to the Moon | 1993 |
| Harry Potter and the Philosopher's Stone | 1997 |
| Harry Potter and the Goblet of Fire | 2000 |
| Animal Farm | 2004 |
| Romeo and Juliet | 2004 |
| The Hunger Games | 2008 |
| The Pragmatic Programmer: Your Journey To Mastery | 2019 |

Explanation:
First we take the Title and publishing date from the book table and then order them by the publishing date by earliest to latest by ascending order.

4. List the Title of Books published after 1990 in the Technology genre

```
select b.title
from book b, book_genre bg
where b.publish_date > '1990-01-01' and bg.isbn = b.isbn and bg.genre_id = 2;
```

Answer is 1 row:

| Title |
|---|
| The Pragmatic Programmer: Your Journey To Mastery |

Explanation:
First, we find all titles from Book table and genres from the book_genre table and then, we matched the isbn of the book_genre table and the book table. Next, we checked to find a book title that was published

after 1990 and matched the books with the Technology genre.

5.  List the Name of Publishers of Books which are in the Technology genre

```
select distinct p.name
from publisher p, book b, book_genre bg, genre g
where p.publisher_id = b.publisher_id and b.isbn = bg.isbn and bg.genre_id =
g.genre_id and g.name = 'Technology';
```

Answer is 1 row:

| Name |
| --- |
| Addison-Wesley Professional |

Explanation:
First we find all books where the publisher ID matches the book publisher ID. Then we match
the book ISBN with the ISBN of a book in the Book_Genre table to match our book with the
specific genre. Then we match the genre id with the genre table, where the find the ID that
matches the Technology genre.

6.  List the First Name and Last Name of Authors of Political Satire Books

```
select distinct a.first_name, a.last_name
from author a, book_author ba, book_genre bg, genre g
where a.author_id = ba.author_id and ba.isbn = bg.isbn and bg.genre_id =
g.genre_id and g.name = 'Political Satire';
```

Answer is 1 row:

| First Name | Last Name |
| --- | --- |
| George | Orwell |

Explanation:
Similarly to the first query, we match author id with the book isbn through the book_author table
which represents a many-to-many relationship. Next, we match the book_genre isbn with the
book isbn since book_genre represents a many-to-many relationship between books and genres.
Finally, we filter based on the desired genre, Political Satire.

7. List the Title of Books with more than 200 Pages that are in the Fantasy genre

```
select distinct b.title
from book b, book_genre bg, genre g
where b.isbn = bg.isbn and bg.genre_id = g.genre_id and b.num_of_pages > 200
and g.name = 'Fantasy';
```

Answer is 2 rows:

| Title |
| --- |
| Harry Potter and the Philosopher's Stone |
| Harry Potter and the Goblet of Fire |

Explanation:
First we search for books that match the ISBN in the Book_Genre table. Then we find books which have the total number of pages exceeding 200, then match with books that are in the Fantasy genre.

8. List the Genres from the number of books from most to least

```
select g.name
from genre g
inner join book_genre bg on g.genre_id = bg.genre_id
group by g.genre_id
order by count(name) DESC;
```

Answer is 5 rows:

| Name |
| --- |
| Science Fiction |
| Fantasy |
| Political Satire |
| Technology |
| Romance |

Explanation:
First, we inner join genre with book_genre to map the book with the genre. Then, we group by genre_id which gives the count of books per genre. Finally, the count is ordered in descending order.

9. List the Title of all Books From New York-based Publishers

```
select b.title
from book b
inner join publisher p on p.publisher_id = b.publisher_id
where location = 'New York';
```

Answer is 4 rows:

| Title |
|---|
| From the Earth to the Moon |
| The Hunger Games |
| Animal Farm |
| Romeo and Juliet |

Explanation:
First we match the book's publisher ID with the publisher's in the publisher table. Then, we match for publisher's who are located in New York.

10. List the ISBN and title of books with more than 1 author

```
select distinct b.isbn, b.title
from book b
inner join book_author ba on b.isbn = ba.isbn
where author_id >= 5 and author_id <=6;
```

Answer is 1 row:

| ISBN | Title |
|---|---|
| 9780135957059 | The Pragmatic Programmer: Your Journey To Mastery |

Explanation:
First we matched the book_author isbn with the book table's. Then, we checked where author_id is greater or equal to 5 and less than or equal to 6.