

**Assignment 4 Part 2 and Assignment 5: Oracle SQL Database**  
**CPS510-Section 8**  
**Fall 2023**

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**Library Database System**

**VIEWS and JOIN Queries:**

**View Query 1:**

```
SELECT * FROM book_details;
```

**Output:**

BOOK_ID	TITLE	AUTHOR_NAME	PUBLICATION_YEAR	ISBN	GENRE_NAME	AVAILABLE_COPIE
1	104 The Catcher in the Rye	Rick Riordan	1951	9780316769488	Fiction	27
2	101 The Great Gatsby	F.Scott Fitzgerald	1925	9780743273565	Fiction	97
3	100 1984	George Orwell	1949	9780451524935	Science-Fiction	100
4	103 Moby-Dick	Herman Melville	1851	9781509826643	Adventure	87
5	102 To Kill A Mockingbird	Harper Lee	1960	9780446310789	Thriller	125

**View Query 2:**

```
SELECT * FROM checked_out_books_details;
```

**Output:**

CHECKEDOUT_ID	BOOK_TITLE	MEMBER_FIRST_NAME	MEMBER_LAST_NAME	DATE_CHECKED_OUT	DUE_DATE
1	2000 1984	Jeffery	David	23-09-13	23-09-27
2	2001 The Great Gatsby	Amanda	Song	22-08-01	22-08-15
3	2002 To Kill A Mockingbird	Lee	Soi	22-12-27	23-01-13

### View Query 3:

```
SELECT * FROM member_checked_books;
```

### Output:

	MEMBER_ID	FIRST_NAME	LAST_NAME	BOOK_TITLE	DATE_CHECKED_OUT	DUE_DATE
1	1	Jeffery	David	1984	23-09-13	23-09-27
2	2	Amanda	Song	The Great Gatsby	22-08-01	22-08-15
3	3	Lee	Soi	To Kill A Mockingbird	22-12-27	23-01-13

### JOIN Queries:

#### JOIN query 1:

```
SELECT b.title, a.first_name || ' ' || a.last_name AS author_name, b.publication_year, g.genre_name
FROM book b
JOIN authors a ON b.author_id = a.author_id
JOIN genres g ON b.genre_id = g.genre_id;
```

### Output:

	TITLE	AUTHOR_NAME	PUBLICATION_YEAR	GENRE_NAME
1	The Catcher in the Rye	Rick Riordan	1951	Fiction
2	The Great Gatsby	F.Scott Fitzgerald	1925	Fiction
3	1984	George Orwell	1949	Science-Fiction
4	Moby-Dick	Herman Melville	1851	Adventure
5	To Kill A Mockingbird	Harper Lee	1960	Thriller

#### JOIN Query 2:

```
SELECT b.title AS book_title, m.first_name AS member_first_name, m.last_name AS member_last_name, cb.date_checked_out, cb.due_date
FROM checked_out_books cb
JOIN book b ON cb.book_id = b.book_id
JOIN members m ON cb.member_id = m.member_id;
```

### Output:

	BOOK_TITLE	MEMBER_FIRST_NAME	MEMBER_LAST_NAME	DATE_CHECKED_OUT	DUE_DATE
1	1984	Jeffery	David	23-09-13	23-09-27
2	The Great Gatsby	Amanda	Song	22-08-01	22-08-15
3	To Kill A Mockingbird	Lee	Soi	22-12-27	23-01-13

### JOIN Query 3:

```
SELECT m.first_name, m.last_name, b.title AS book_title, cb.date_checked_out, cb.due_date
FROM members m
JOIN checked_out_books cb ON m.member_id = cb.member_id
JOIN book b ON cb.book_id = b.book_id;
```

### Output:

	FIRST_NAME	LAST_NAME	BOOK_TITLE	DATE_CHECKED_OUT	DUE_DATE
1	Jeffery	David	1984	23-09-13	23-09-27
2	Amanda	Song	The Great Gatsby	22-08-01	22-08-15
3	Lee	Soi	To Kill A Mockingbird	22-12-27	23-01-13

### Advanced Queries:

#### Advanced Query 1:

```
SELECT b.title
FROM book b
WHERE EXISTS (
    SELECT 1
    FROM checked_out_books cb
    WHERE b.book_id = cb.book_id
);
```

#### Output

	TITLE
1	1984
2	The Great Gatsby
3	To Kill A Mockingbird
4	Moby-Dick

#### Advanced Query 2:

```
SELECT title AS result FROM book
UNION
SELECT first_name || ' ' || last_name AS result FROM authors;
```

### Output:

RESULT
1 1984
2 F.Scott Fitzgerald
3 George Orwell
4 Harper Lee
5 Herman Melville
6 Moby-Dick
7 Rick Riordan
8 The Catcher in the Rye
9 The Great Gatsby
10 To Kill A Mockingbird

### Advanced Query 3:

```
SELECT COUNT(*) AS total_books
FROM book;
```

### Output:

	TOTAL_BOOKS
1	5

### Advanced Query 4:

```
SELECT b.title
FROM book b
MINUS
SELECT b.title
FROM book b
JOIN checked_out_books cb ON b.book_id = cb.book_id;
```

### Output:

	TITLE
1	The Catcher in the Rye

### Advanced Query 5:

```
SELECT m.member_id, m.first_name, m.last_name, AVG(m.books_signed_out) AS avg_books_signed_out
FROM members m
GROUP BY m.member_id, m.first_name, m.last_name
HAVING AVG(m.books_signed_out) > 0;
```

### Output:

	MEMBER_ID	FIRST_NAME	LAST_NAME	AVG_BOOKS_SIGNED_OUT
1	3	Lee	Soi	1
2	1	Jeffery	David	1
3	2	Amanda	Song	1