DA _ SQL TASK PRACTICE – 2

```
use stud1;
-- 1. Create employee table
CREATE TABLE employee (
   employee_id INTEGER,
   first_name TEXT,
   last_name TEXT,
   department TEXT,
   salary DECIMAL,
   hire_date DATE
);

-- 2. Insert fifteen records (example data)
INSERT INTO employee VALUES (1, 'John', 'Doe', 'HR', 55000, '2020-01-15');
INSERT INTO employee VALUES (2, 'Jane', 'Smith', 'Engineering', 75000, '2019-03-22');
INSERT INTO employee VALUES (3, 'Alice', 'Brown', 'Sales', 48000, '2021-06-01');
INSERT INTO employee VALUES (4, 'Bob', 'Taylor', 'HR', 60000, '2022-01-10');
INSERT INTO employee VALUES (5, 'Charlie', 'Wilson', 'Engineering', 82000, '2018-12-05');
INSERT INTO employee VALUES (6, 'David', 'Moore', 'Finance', 54000, '2017-07-19');
INSERT INTO employee VALUES (7, 'Eve', 'Clark', 'Engineering', 72000, '2020-09-11');
INSERT INTO employee VALUES (8, 'Frank', 'Lopez', 'Marketing', 51000, '2021-11-30');
INSERT INTO employee VALUES (9, 'Grace', 'Hall', 'HR', 62000, '2019-10-07');
```

```sql
INSERT INTO employee VALUES (10, 'Hank', 'Young', 'Engineering', 79000, '2020-05-17');

INSERT INTO employee VALUES (11, 'Ivy', 'King', 'Sales', 45000, '2021-08-25');

INSERT INTO employee VALUES (12, 'Jack', 'Wright', 'Engineering', 69000, '2018-03-14');

INSERT INTO employee VALUES (13, 'Karen', 'Scott', 'Finance', 58000, '2022-02-02');

INSERT INTO employee VALUES (14, 'Leo', 'Green', 'HR', 53000, '2020-07-21');

INSERT INTO employee VALUES (15, 'Mona', 'Baker', 'Engineering', 81000, '2017-04-12');


-- 3. Aggregate Queries

SELECT SUM(salary) AS total_salary_above_60000 FROM employee WHERE salary > 60000;

SELECT AVG(salary) AS average_salary FROM employee;

SELECT COUNT(*) AS count_below_55000 FROM employee WHERE salary < 55000;

SELECT MAX(salary) AS highest_salary FROM employee;

SELECT MIN(salary) AS lowest_salary FROM employee;

SELECT SUM(salary) AS total_hr_salary FROM employee WHERE department = 'HR';

SELECT AVG(salary) AS avg_engineering_salary FROM employee WHERE department = 'Engineering';

SELECT COUNT(*) AS count_between_50000_70000 FROM employee WHERE salary BETWEEN 50000 AND 70000;

SELECT SUM(salary) AS sum_below_60000 FROM employee WHERE salary < 60000;

SELECT AVG(salary) AS avg_above_60000 FROM employee WHERE salary > 60000;
```

```sql
-- 4. Books table creation
CREATE TABLE Books1 (
   book_id INTEGER,
   title TEXT,
   author TEXT,
   genre TEXT,
   published_year INTEGER,
   available_copies INTEGER
);

-- Example data insertions for Books
INSERT INTO Books1 VALUES (1, 'The Hobbit', 'J.R.R. Tolkien', 'Fantasy', 1937, 5);
INSERT INTO Books1 VALUES (2, 'The War of the Worlds', 'H.G. Wells', 'Science Fiction', 1898, 3);
INSERT INTO Books1 VALUES (3, 'War and Peace', 'Leo Tolstoy', 'Historical Fiction', 1869, 7);
INSERT INTO Books1 VALUES (4, 'The Great Gatsby', 'F. Scott Fitzgerald', 'Fiction', 1925, 6);
INSERT INTO Books1 VALUES (5, 'Anna Karenina', 'Leo Tolstoy', 'Fiction', 1878, 2);
INSERT INTO Books1 VALUES (6, '1984', 'George Orwell', 'Dystopian', 1949, 10);
INSERT INTO Books1 VALUES (7, 'Brave New World', 'Aldous Huxley', 'Dystopian', 1932, 4);
INSERT INTO Books1 VALUES (8, 'The Silmarillion', 'J.R.R. Tolkien', 'Fantasy', 1977, 8);
INSERT INTO Books1 VALUES (9, 'The Art of War', 'Sun Tzu', 'Philosophy', 500, 6);
INSERT INTO Books1 VALUES (10, 'Fahrenheit 451', 'Ray Bradbury', 'Dystopian', 1953, 5);
```

```sql
-- Queries for BETWEEN, ALIAS, LIKE, LIMIT
SELECT * FROM Books1 WHERE published_year BETWEEN 1900 AND 1950;
SELECT * FROM Books1 WHERE available_copies BETWEEN 4 AND 7;
SELECT * FROM Books1 WHERE published_year BETWEEN 1800 AND 1900;
SELECT * FROM Books1 WHERE book_id BETWEEN 5 AND 10;
SELECT * FROM Books1 WHERE published_year BETWEEN 1850 AND 1950 AND
available_copies >= 5;
SELECT * FROM Books1 WHERE title LIKE 'The%';
SELECT * FROM Books1 WHERE author LIKE '%Tolkien%';
SELECT * FROM Books1 WHERE genre LIKE '%Fiction%';
SELECT * FROM Books1 WHERE title LIKE '%War%';
SELECT * FROM Books1 WHERE author LIKE '%Tolstoy';
SELECT title AS Book_Title, available_copies AS Copies FROM Books1;
SELECT * FROM Books1 AS B WHERE B.available_copies > 5;
SELECT title, author, published_year AS Year_Published FROM Books1;
SELECT title AS Book_Title, author AS Book_Author, available_copies AS Copies
FROM Books1;
SELECT title, author, available_copies AS Stock FROM Books1 WHERE
available_copies > 4;
SELECT * FROM Books1 LIMIT 5;
SELECT * FROM Books1 ORDER BY published_year DESC LIMIT 3;
SELECT * FROM Books1 WHERE available_copies > 3 LIMIT 7;
SELECT * FROM Books1 ORDER BY author LIMIT 10;
SELECT * FROM Books1 WHERE genre = 'Fantasy' LIMIT 4;
```

Output:

#	Time	Action	Message	Duration / Fetch
3 1	13:03:28	use stud1	0 row(s) affected	0.000 sec
3 2	13:03:32	CREATE TABLE employee (employee_id INTEGER, first_name TEXT, last_name TEXT, department TEXT, salary DECIMAL, hire_date DATE)	0 row(s) affected	0.016 sec
3 3	13:03:42	INSERT INTO employee VALUES (1, 'John', 'Doe', 'HR', 55000, '2020-01-15')	1 row(s) affected	0.000 sec
3 4	13:03:42	INSERT INTO employee VALUES (2, 'Jane', 'Smith', 'Engineering', 75000, '2019-03-22')	1 row(s) affected	0.000 sec
3 5	13:03:42	INSERT INTO employee VALUES (3, 'Alice', 'Brown', 'Sales', 48000, '2021-06-01')	1 row(s) affected	0.000 sec
3 6	13:03:42	INSERT INTO employee VALUES (4, 'Bob', 'Taylor', 'HR', 60000, '2022-01-10')	1 row(s) affected	0.000 sec
3 7	13:03:42	INSERT INTO employee VALUES (5, 'Charlie', 'Wilson', 'Engineering', 82000, '2018-12-05')	1 row(s) affected	0.000 sec
3 8	13:03:42	INSERT INTO employee VALUES (6, 'David', 'Moore', 'Finance', 54000, '2017-07-19')	1 row(s) affected	0.000 sec
3 9	13:03:42	INSERT INTO employee VALUES (7, 'Eve', 'Clark', 'Engineering', 72000, '2020-09-11')	1 row(s) affected	0.000 sec

#	Time	Action	Message	Duration / Fetch
3 10	13:03:42	INSERT INTO employee VALUES (8, 'Frank', 'Lopez', 'Marketing', 51000, '2021-11-30')	1 row(s) affected	0.000 sec
3 11	13:03:42	INSERT INTO employee VALUES (9, 'Grace', 'Hall', 'HR', 62000, '2019-10-07')	1 row(s) affected	0.000 sec
3 12	13:03:42	INSERT INTO employee VALUES (10, 'Hank', 'Young', 'Engineering', 79000, '2020-05-17')	1 row(s) affected	0.000 sec
3 13	13:03:42	INSERT INTO employee VALUES (11, 'Ivy', 'King', 'Sales', 45000, '2021-08-25')	1 row(s) affected	0.000 sec
3 14	13:03:43	INSERT INTO employee VALUES (12, 'Jack', 'Wright', 'Engineering', 69000, '2018-03-14')	1 row(s) affected	0.000 sec
3 15	13:03:43	INSERT INTO employee VALUES (13, 'Karen', 'Scott', 'Finance', 58000, '2022-02-02')	1 row(s) affected	0.000 sec
3 16	13:03:43	INSERT INTO employee VALUES (14, 'Leo', 'Green', 'HR', 53000, '2020-07-21')	1 row(s) affected	0.000 sec
3 17	13:03:43	INSERT INTO employee VALUES (15, 'Mona', 'Baker', 'Engineering', 81000, '2017-04-12')	1 row(s) affected	0.000 sec
3 18	13:03:49	SELECT SUM(salary) AS total_salary_above_60000 FROM employee WHERE salary > 60000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 19	13:03:49	SELECT AVG(salary) AS	1 row(s) returned	0.000

#	Time	Action	Message	Duration / Fetch
		average_salary FROM employee LIMIT 0, 500		sec / 0.000 sec
3 20	13:03:49	SELECT COUNT(*) AS count_below_55000 FROM employee WHERE salary < 55000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 21	13:03:49	SELECT MAX(salary) AS highest_salary FROM employee LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 22	13:03:49	SELECT MIN(salary) AS lowest_salary FROM employee LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 23	13:03:49	SELECT SUM(salary) AS total_hr_salary FROM employee WHERE department = 'HR' LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 24	13:03:49	SELECT AVG(salary) AS avg_engineering_salary FROM employee WHERE department = 'Engineering' LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 25	13:03:49	SELECT COUNT(*) AS count_between_50000_70000 FROM employee WHERE salary BETWEEN 50000 AND 70000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 26	13:03:49	SELECT SUM(salary) AS sum_below_60000 FROM	1 row(s) returned	0.000 sec /

	#	Time	Action	Message	Duration / Fetch
			employee WHERE salary < 60000 LIMIT 0, 500		0.000 sec
3	27	13:03:49	SELECT AVG(salary) AS avg_above_60000 FROM employee WHERE salary > 60000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	28	13:03:56	SELECT SUM(salary) AS total_salary_above_60000 FROM employee WHERE salary > 60000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	29	13:03:59	SELECT AVG(salary) AS average_salary FROM employee LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	30	13:04:04	SELECT COUNT(*) AS count_below_55000 FROM employee WHERE salary < 55000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	31	13:04:08	SELECT MAX(salary) AS highest_salary FROM employee LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	32	13:04:11	SELECT MIN(salary) AS lowest_salary FROM employee LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3	33	13:04:15	SELECT SUM(salary) AS total_hr_salary FROM employee WHERE department = 'HR' LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec

#	Time	Action	Message	Duration / Fetch
3 34	13:04:34	SELECT AVG(salary) AS avg_engineering_salary FROM employee WHERE department = 'Engineering' LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 35	13:04:48	SELECT COUNT(*) AS count_between_50000_70000 FROM employee WHERE salary BETWEEN 50000 AND 70000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 36	13:04:51	SELECT SUM(salary) AS sum_below_60000 FROM employee WHERE salary < 60000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
3 37	13:04:54	SELECT AVG(salary) AS avg_above_60000 FROM employee WHERE salary > 60000 LIMIT 0, 500	1 row(s) returned	0.000 sec / 0.000 sec
0 38	13:05:02	CREATE TABLE Books (book_id INTEGER, title TEXT, author TEXT, genre TEXT, published_year INTEGER, available_copies INTEGER)	Error Code: 1050. Table 'books' already exists	0.000 sec
0 39	13:05:08	INSERT INTO Books VALUES (1, 'The Hobbit', 'J.R.R. Tolkien', 'Fantasy', 1937, 5)	Error Code: 1136. Column count doesn't match value count at row 1	0.000 sec
0 40	13:05:19	CREATE TABLE Books (book_id INTEGER, title TEXT, author TEXT, genre TEXT, published_year INTEGER,	Error Code: 1050. Table 'books' already exists	0.000 sec

#	Time	Action	Message	Duration / Fetch
		available_copies INTEGER)		
3 41	13:05:50	CREATE TABLE Books1 (book_id INTEGER, title TEXT, author TEXT, genre TEXT, published_year INTEGER, available_copies INTEGER)	0 row(s) affected	0.000 sec
3 42	13:05:57	INSERT INTO Books1 VALUES (1, 'The Hobbit', 'J.R.R. Tolkien', 'Fantasy', 1937, 5)	1 row(s) affected	0.016 sec
3 43	13:05:57	INSERT INTO Books1 VALUES (2, 'The War of the Worlds', 'H.G. Wells', 'Science Fiction', 1898, 3)	1 row(s) affected	0.000 sec
3 44	13:05:57	INSERT INTO Books1 VALUES (3, 'War and Peace', 'Leo Tolstoy', 'Historical Fiction', 1869, 7)	1 row(s) affected	0.000 sec
3 45	13:05:57	INSERT INTO Books1 VALUES (4, 'The Great Gatsby', 'F. Scott Fitzgerald', 'Fiction', 1925, 6)	1 row(s) affected	0.000 sec
3 46	13:05:57	INSERT INTO Books1 VALUES (5, 'Anna Karenina', 'Leo Tolstoy', 'Fiction', 1878, 2)	1 row(s) affected	0.000 sec
3 47	13:05:57	INSERT INTO Books1 VALUES (6, '1984', 'George Orwell', 'Dystopian', 1949, 10)	1 row(s) affected	0.000 sec
3 48	13:05:57	INSERT INTO Books1 VALUES (7, 'Brave New World', 'Aldous Huxley', 'Dystopian', 1932, 4)	1 row(s) affected	0.000 sec
3 49	13:05:57	INSERT INTO Books1 VALUES (8, 'The Silmarillion', 'J.R.R. Tolkien',	1 row(s) affected	0.000 sec

	#	Time	Action	Message	Duration / Fetch
			'Fantasy', 1977, 8)		
3	50	13:05:57	INSERT INTO Books1 VALUES (9, 'The Art of War', 'Sun Tzu', 'Philosophy', 500, 6)	1 row(s) affected	0.000 sec
3	51	13:05:57	INSERT INTO Books1 VALUES (10, 'Fahrenheit 451', 'Ray Bradbury', 'Dystopian', 1953, 5)	1 row(s) affected	0.000 sec
0	52	13:06:03	SELECT * FROM Books WHERE published_year BETWEEN 1900 AND 1950 LIMIT 0, 500	Error Code: 1054. Unknown column 'published_year' in 'where clause'	0.000 sec
3	53	13:06:55	SELECT * FROM Books1 WHERE published_year BETWEEN 1900 AND 1950 LIMIT 0, 500	4 row(s) returned	0.000 sec / 0.000 sec
3	54	13:07:05	SELECT * FROM Books1 WHERE available_copies BETWEEN 4 AND 7 LIMIT 0, 500	6 row(s) returned	0.000 sec / 0.000 sec
3	55	13:07:11	SELECT * FROM Books1 WHERE published_year BETWEEN 1800 AND 1900 LIMIT 0, 500	3 row(s) returned	0.000 sec / 0.000 sec
3	56	13:07:14	SELECT * FROM Books1 WHERE book_id BETWEEN 5 AND 10 LIMIT 0, 500	6 row(s) returned	0.000 sec / 0.000 sec
3	57	13:07:20	SELECT * FROM Books1 WHERE title LIKE 'The%' LIMIT 0, 500	5 row(s) returned	0.000 sec / 0.000

	#	Time	Action	Message	Duration / Fetch sec
3	58	13:07:23	SELECT * FROM Books1 WHERE author LIKE '%Tolkien%' LIMIT 0, 500	2 row(s) returned	0.000 sec / 0.000 sec
3	59	13:07:35	SELECT * FROM Books1 WHERE genre LIKE '%Fiction%' LIMIT 0, 500	4 row(s) returned	0.000 sec / 0.000 sec
3	60	13:07:45	SELECT * FROM Books1 WHERE title LIKE '%War%' LIMIT 0, 500	3 row(s) returned	0.000 sec / 0.000 sec
3	61	13:10:32	SELECT title AS Book_Title, available_copies AS Copies FROM Books1 LIMIT 0, 500	10 row(s) returned	0.000 sec / 0.000 sec
3	62	13:10:35	SELECT * FROM Books1 AS B WHERE B.available_copies > 5 LIMIT 0, 500	5 row(s) returned	0.000 sec / 0.000 sec
3	63	13:10:39	SELECT title, author, published_year AS Year_Published FROM Books1 LIMIT 0, 500	10 row(s) returned	0.000 sec / 0.000 sec
3	64	13:10:43	SELECT title AS Book_Title, author AS Book_Author, available_copies AS Copies FROM Books1 LIMIT 0, 500	10 row(s) returned	0.000 sec / 0.000 sec

	#	Time	Action	Message	Duration / Fetch
3	65	13:10:55	SELECT title, author, available_copies AS Stock FROM Books1 WHERE available_copies > 4 LIMIT 0, 500	7 row(s) returned	0.000 sec / 0.000 sec
3	66	13:10:59	SELECT * FROM Books1 LIMIT 5	5 row(s) returned	0.000 sec / 0.000 sec
3	67	13:11:04	SELECT * FROM Books1 ORDER BY published_year DESC LIMIT 3	3 row(s) returned	0.000 sec / 0.000 sec
3	68	13:11:07	SELECT * FROM Books1 WHERE available_copies > 3 LIMIT 7	7 row(s) returned	0.000 sec / 0.000 sec
3	69	13:11:10	SELECT * FROM Books1 ORDER BY author LIMIT 10	10 row(s) returned	0.000 sec / 0.000 sec
3	70	13:11:14	SELECT * FROM Books1 WHERE genre = 'Fantasy' LIMIT 4	2 row(s) returned	0.000 sec / 0.000 sec