Answers 3.3

- **Step 1**

	category_id [PK] integer	name character varying (25)	last_update timestamp without time zone
1	1	Action	2006-02-15 09:46:27
2	2	Animation	2006-02-15 09:46:27
3	3	Children	2006-02-15 09:46:27
4	4	Classics	2006-02-15 09:46:27
5	5	Comedy	2006-02-15 09:46:27
6	6	Documentary	2006-02-15 09:46:27
7	7	Drama	2006-02-15 09:46:27
8	8	Family	2006-02-15 09:46:27
9	9	Foreign	2006-02-15 09:46:27
10	10	Games	2006-02-15 09:46:27
11	11	Horror	2006-02-15 09:46:27
12	12	Music	2006-02-15 09:46:27
13	13	New	2006-02-15 09:46:27
14	14	Sci-Fi	2006-02-15 09:46:27
15	15	Sports	2006-02-15 09:46:27
16	16	Travel	2006-02-15 09:46:27

❖ Step 2

Query | Query History

```
1 INSERT INTO category(name)
2 VALUES ('Thriller'),
3 ('Crime'),
4 ('Mystery'),
5 ('Romance'),
6 ('War')
```

```
INSERT 0 5

Query returned successfully in 27 msec.
```

	category_id [PK] integer	name character varying (25)	last_update timestamp without ti
1	1	Action	2006-02-15 09:46:27
2	2	Animation	2006-02-15 09:46:27
3	3	Children	2006-02-15 09:46:27
4	4	Classics	2006-02-15 09:46:27
5	5	Comedy	2006-02-15 09:46:27
6	6	Documentary	2006-02-15 09:46:27
7	7	Drama	2006-02-15 09:46:27
8	8	Family	2006-02-15 09:46:27
9	9	Foreign	2006-02-15 09:46:27
10	10	Games	2006-02-15 09:46:27
11	11	Horror	2006-02-15 09:46:27
12	12	Music	2006-02-15 09:46:27
13	13	New	2006-02-15 09:46:27
14	14	Sci-Fi	2006-02-15 09:46:27
15	15	Sports	2006-02-15 09:46:27
16	16	Travel	2006-02-15 09:46:27
17	17	Thriller	2025-01-02 17:06:29.
18	18	Crime	2025-01-02 17:06:29.
19	19	Mystery	2025-01-02 17:06:29.
20	20	Romance	2025-01-02 17:06:29.
21	21	War	2025-01-02 17:06:29.

1. category_id integer NOT NULL DEFAULT nextval('category_category_id_seq'::regclass)

- **NOT NULL**: The `category_id` column cannot have `NULL` values, ensuring that every record must have a value in this column.
- **DEFAULT nextval(...)**: Automatically assigns unique values to `category_id` using the `category_category_id_seq` sequence. This eliminates the need to manually assign unique identifiers.

2. name text COLLATE pg_catalog."default" NOT NULL

- **NOT NULL**: The `name` column must be filled and cannot be empty.
- **COLLATE pg_catalog."default"**: Specifies the collation for sorting and comparing text, which is especially useful in multilingual databases.

3. last_update timestamp with time zone NOT NULL DEFAULT now()

- **NOT NULL**: The `last_update` column cannot be left empty.
- **DEFAULT now()**: Automatically sets the current timestamp when a new record is added. This helps track the time of the most recent update.

4. CONSTRAINT category_pkey PRIMARY KEY (category_id)

- Defines the primary key for the table, applied to the `category_id` column.
- **PRIMARY KEY**: Ensures the uniqueness of values in the `category_id` column and creates an index for faster lookups.

➢ Why are these constraints important?

- **Data consistency**: Constraints like `NOT NULL` and `PRIMARY KEY` prevent the insertion of records with missing or duplicate key information.
- **Automation**: Default values like `nextval(...)` and `now()` simplify data management and reduce the need for manual input of essential values.
- **Referential integrity**: The primary key allows this table to establish relationships with other tables in the database.
- **Efficient querying**: The primary key index improves the performance of data lookups.

❖ Step 3

Query | Query History

```
1  /*Update data*/
2
3  UPDATE film_category
4  SET category_id = 17
5  WHERE film_id = 5
6
```

	film_id smallint	title character varying (255)	category_id smallint	genre character varying (25)
1	5	African Egg	17	Thriller

❖ Step 4

```
13
14  DELETE FROM category
15  WHERE category_id = 19;
```

	category_id [PK] integer	name character varying (25)	last_update timestamp without time zone
1	1	Action	2006-02-15 09:46:27
2	2	Animation	2006-02-15 09:46:27
3	3	Children	2006-02-15 09:46:27
4	4	Classics	2006-02-15 09:46:27
5	5	Comedy	2006-02-15 09:46:27
6	6	Documentary	2006-02-15 09:46:27
7	7	Drama	2006-02-15 09:46:27
8	8	Family	2006-02-15 09:46:27
9	9	Foreign	2006-02-15 09:46:27
10	10	Games	2006-02-15 09:46:27
11	11	Horror	2006-02-15 09:46:27
12	12	Music	2006-02-15 09:46:27
13	13	New	2006-02-15 09:46:27
14	14	Sci-Fi	2006-02-15 09:46:27
15	15	Sports	2006-02-15 09:46:27
16	16	Travel	2006-02-15 09:46:27
17	17	Thriller	2025-01-02 17:06:29.298019
18	18	Crime	2025-01-02 17:06:29.298019
19	20	Romance	2025-01-02 17:06:29.298019
20	21	War	2025-01-02 17:06:29.298019

❖ Step 5

Using Excel for steps 1 to 4 is easier for beginners due to its visual, user-friendly interface. However, SQL is far better for handling large datasets, offering scalability, precision, and tools like constraints and keys to ensure data integrity. Excel requires more manual effort for complex tasks, increasing the risk of errors, making SQL the preferred choice for large-scale data management.

❖ Bonus Task

```sql
CREATE TABLE employees
(
    employee_id INT NOT NULL,
    name VARCHAR(50),
    contact_number VARCHAR(30),
    designation_id INT,
    last_update TIMESTAMP NOT NULL DEFAULT now(),
    CONSTRAINT employee_pkey PRIMARY KEY (employee_id)
)
```

Query Query History

```sql
1 select *
2 from employees
```

Data Output | Messages | Notifications

SQL

	employee_id [PK] integer	name character varying (50)	contact_number character varying (30)	designation_id integer	last_update timestamp without time zone