

Proc SQL: An Overview

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Goals

Demonstrate the practical use of Proc SQL.

- Add Data
- Validate Data
- Perform Queries
- Create Views

Database Schema

In a relational database, the schema defines the tables, the fields in each table, and the relationships between fields and tables.

- Department Table
- Employee Table
- Composite Manager Table

Create Duplicate Table

Listing 1: Like Command

```
PROC SQL;  
    CREATE TABLE TEMP_EMPLOYEES  
        LIKE EMP_TABLE;  
QUIT;
```

Add Some Data

Listing 2: Like Command

```
PROC SQL;  
  INSERT INTO EMP_TABLE  
    (EMP_ID , LAST_NAME, FIRST_NAME, DEPT_ID)  
  SELECT EMP_ID , LAST_NAME, FIRST_NAME, DEPT_ID  
    FROM TEMP_EMPLOYEES  
       WHERE DEPT_ID IN (104);  
QUIT;
```

View Employees and Their Departments

Listing 3: Where Command

```
PROC SQL;  
    SELECT DEPT_TABLE.DEPT_NAME,  
           EMP_TABLE.FIRST_NAME,  
           EMP_TABLE.LAST_NAME  
           FROM DEPT_TABLE, EMP_TABLE  
           WHERE DEPT_TABLE.DEPT_ID = EMP_TABLE.DEPT_ID;  
QUIT;
```

View Employees By Department

Listing 4: Where Command

```
PROC SQL;  
    SELECT DEPT_TABLE.DEPT_NAME,  
           EMP_TABLE.FIRST_NAME,  
           EMP_TABLE.LAST_NAME  
           FROM DEPT_TABLE, EMP_TABLE  
           WHERE DEPT_TABLE.DEPT_ID = EMP_TABLE.DEPT_ID  
           GROUP BY DEPT_TABLE.DEPT_NAME;  
QUIT;
```

See How Many Employees Are in a Department

Listing 5: Where Command

```
PROC SQL;  
    SELECT DEPT_TABLE.DEPT_NAME, COUNT(*)  
        FROM DEPT_TABLE, EMP_TABLE  
        WHERE DEPT_TABLE.DEPT_ID = EMP_TABLE.DEPT_ID  
        GROUP BY DEPT_TABLE.DEPT_NAME;  
QUIT;
```


Show Division (Sloppy)

Listing 6: Case Statement

```
title "Show Division";
title2 "Using CASE";
PROC SQL;
    SELECT DEPT_NAME,
           CASE DEPT_ID
                WHEN 101 THEN 'Manufacturing'
                WHEN 102 THEN 'Manufacturing'
                WHEN 103 THEN 'Global'
                WHEN 104 THEN 'Compliance'
                WHEN 105 THEN 'Compliance'
                ELSE 'Unknown'
           END AS DIVISION
    FROM DEPT_TABLE;
QUIT;
```

Remove an Entry

Listing 7: Delete Command

```
PROC SQL;  
    DELETE FROM EMP_TABLE  
        WHERE EMP_ID = 2012;  
QUIT;
```

Update Entries

Listing 8: Update Command

```
PROC SQL;  
    UPDATE EMP_TABLE  
        SET DEPT_ID = 101  
        WHERE DEPT_ID = 102;  
QUIT;
```

Fuzzy Search

Listing 9: Update Command

```
PROC SQL;  
    SELECT EMP_ID , LAST_NAME, FIRST_NAME  
        FROM EMP_TABLE  
        WHERE LAST_NAME LIKE 'Co%';
```

```
QUIT;
```

```
title "What's that guys name again?";
```

```
title2 "Using LIKE";
```

```
PROC SQL;
```

```
    SELECT EMP_ID, LAST_NAME, FIRST_NAME  
        FROM EMP_TABLE  
        WHERE LAST_NAME LIKE '%za';
```

```
QUIT;
```

Citations

- Cody, Ron. 2007. *Learning SAS[®] by Example: A Programmer's Guide*. Cary, NC: SAS Institute Inc.
- Lafler, Kirk Paul. 2004. *Proc SQL: Beyond the Basics Using SAS[®]*. Cary, NC: SAS Institute Inc.