

Relational Database Operations in SQL - Part IV - Stored Procedures

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Outline

- 1 Recap: SQL and Relational Algebra
- 2 Persistent Stored Modules (PSM)
- 3 Summary

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Selected Topics in SQL

Discussed

- ▶ Ordering the Output
- ▶ Eliminating Duplicates
- ▶ Aggregate Processing
- ▶ Grouping
- ▶ Subquery
- ▶ Database Views

Now discuss

- ▶ Procedural SQL (a brief introduction)

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Introduction to Persistent Stored Modules

Motivation: to isolate critical code to access databases and to handle database errors, SQL supports a procedure language.

- ▶ Persistent storage module (PSM). A block of code containing standard SQL statements and procedural extensions that is stored and executed at the DBMS server.

PSM Language Features

- ▶ Creating PSM functions and procedures
- ▶ Invoking PSM functions and procedures
- ▶ Branching statements
- ▶ Queries in PSM
- ▶ Loops in PSM
- ▶ Exceptions in PSM

PSM Example: Defining a Procedure

```
delimiter //
```



```
CREATE PROCEDURE Move(  
    IN oldAddr VARCHAR(255),  
    IN newAddr VARCHAR(255)  
)  
BEGIN  
    UPDATE Students  
    SET address=newAddr  
    WHERE address=oldAddr;  
END //
```



```
delimiter ;
```

PSM Example: Invoking the Procedure

```
Call Move(  
    '1 BC Street, Brooklyn, NY',  
    '2900 Bedford Ave, Brooklyn, NY'  
);
```

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Questions and Summary

- ▶ A brief introduction to PSM