



CS122B: Projects in Databases and Web Applications

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Notes 10: Stored Procedures
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MySQL Stored Routines Overview

- Stored on server
- Belong to database
- Based on standard SQL specification

MySQL Stored Routines Language

- PROCEDURE
- FUNCTION
- TRIGGER

MySQL Stored Routines Language - Procedure

- PARAMETERS
 - IN
 - OUT
 - INOUT
- May return one or more data sets
- Can use dynamic SQL

MySQL Stored Routines Language - Function

- Only input PARAMETERS
- MUST return one value of a given type
- Can't use dynamic SQL
- Can't return data sets

MySQL Stored Routines Language - Trigger

- associated to table events (INSERT, UPDATE, DELETE)
- its parameters depend on the event
- does not return anything
- can't use dynamic SQL
- can't return data sets

MySQL Stored Routines Language

- CREATE PROCEDURE
- CREATE FUNCTION
- BEGIN .. END blocks
- IF ... THEN ... ELSE ... END IF
- CASE ... THEN ... THEN ... ELSE ... END CASE
- WHILE ... END WHILE
- LOOP ... END LOOP
- DECLARE

MySQL Stored routines language

- HANDLERS
- CURSORS

MySQL Stored routines language - procedure

```
-- Change DELIMITER to $$  
DELIMITER $$
```

```
CREATE PROCEDURE how_is_it (IN x INT)  
BEGIN  
    IF (x > 5) THEN  
        SELECT CONCAT(x, " is higher") as answer;  
    ELSE  
        SELECT CONCAT(x, " is lower") as answer;  
    END IF;  
END  
$$
```

```
-- Change back DELIMITER to ;  
DELIMITER ;
```

MySQL Stored routines language - procedure

```
CALL how_is_it(6);
```

```
+-----+
```

```
| answer      |
```

```
+-----+
```

```
| 6 is higher |
```

```
+-----+
```

```
CALL how_is_it(2);
```

```
+-----+
```

```
| answer      |
```

```
+-----+
```

```
| 2 is lower  |
```

```
+-----+
```

MySQL Stored routines language - function

```
DELIMITER $$
```

```
CREATE FUNCTION    is_bigger (x INT)
```

```
RETURNS CHAR(3)
```

```
BEGIN
```

```
    IF (x > 5) THEN
```

```
        RETURN 'YES';
```

```
    ELSE
```

```
        RETURN 'NO';
```

```
    END IF;
```

```
END
```

```
$$
```

```
DELIMITER ;
```

MySQL Stored routines language - function

```
SELECT is_bigger(6);
```

+-----+	
is_bigger(6)	
+-----+	
YES	
+-----+	

```
SELECT is_bigger(2);
```

+-----+	
is_bigger(2)	
+-----+	
NO	
+-----+	