Working with Stored Procedures

Understanding CallableStatements

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Overview

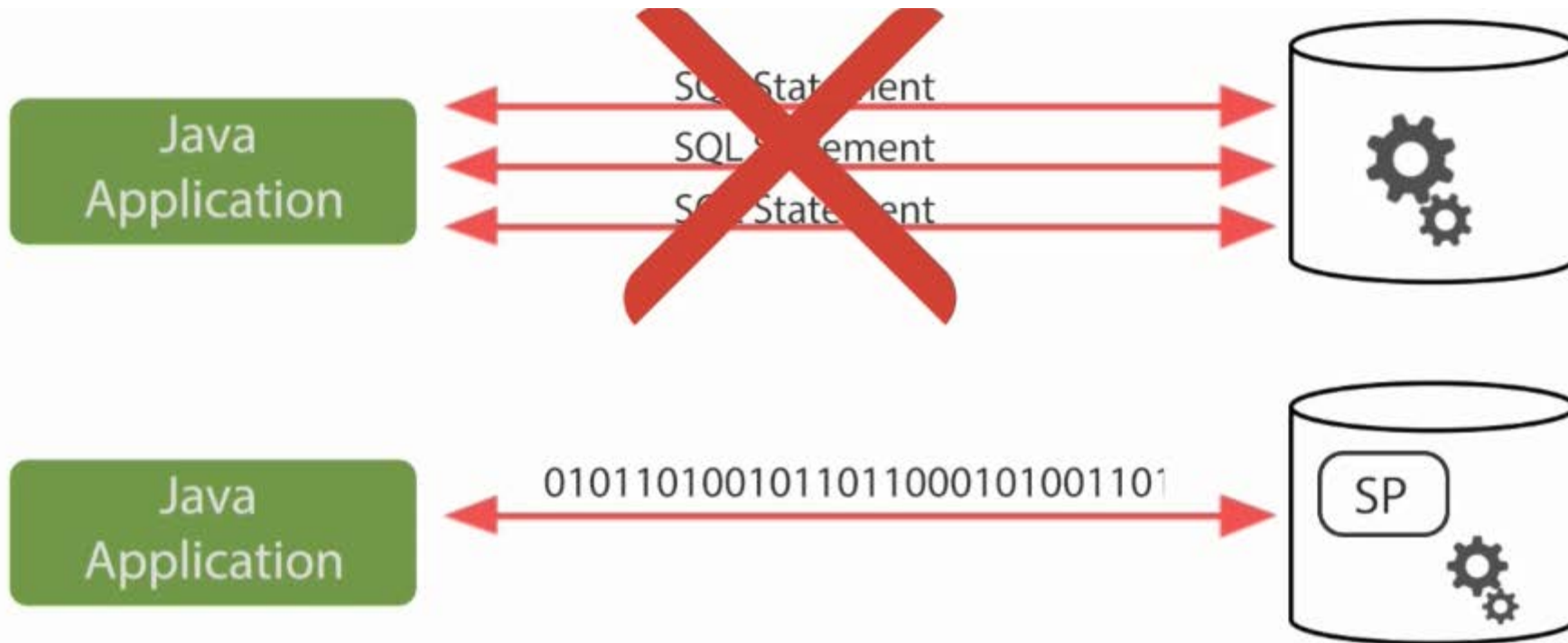- Understanding CallableStatements

- Using CallbleStatements

    -Input

    -Output

    -Input Output

    -Return a ResultSet

Understanding CallableStatements

A Stored Procedure is a group of SQL Statements that perform a particular task

Understanding CallableStatements

- Stored Procedures created by DBA

- Every Database has its own language for creating Stored Procedures

Stored Procedure Language

PL/SQL
PL/SQL stands for
Procedural language extensions to
the Structured Query Language (SQL)

Transact SQL or TSQL

Understanding CallableStatements

CallableStatements are used top make a call to the Stored Procedures

```
CallableStatement cstmt = conn.prepareCall(
"{call StoredProcedureName  (        [Parameter Definition ]        )  }"
)
```

Types of Parameters
- Input(Default)
- Output
- Input Output

To Set Parameter Value
setXxx(Position,Value)

Demo

Calling Stored Procedures-IN parameter

Calling Stored Procedures- Batch Processing

- Problem with executing a single SQL statement

- Advantage of Batch processing

- Implement Batch processing in JDBC

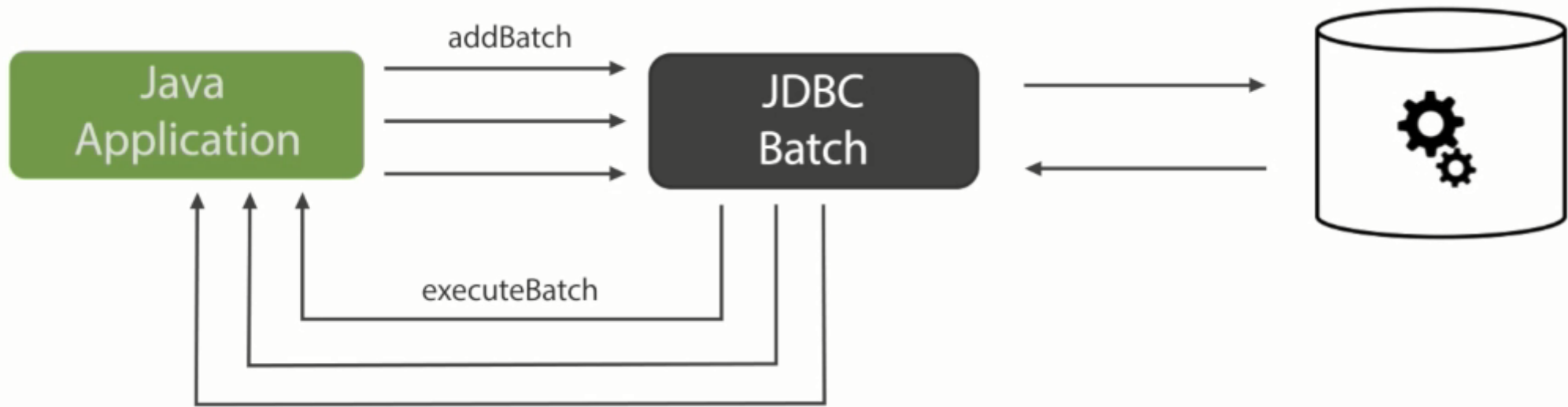# Calling Stored Procedures- Batch Processing

Calling Stored Procedures- Batch Processing

Limitations:
- Huge Network Traffic
- Increases Communication Overheads
- Performance Issues

Calling Stored Procedures- Batch Processing

- •Supported by Statement,PreparedStatement and CallableStatement

Methods:
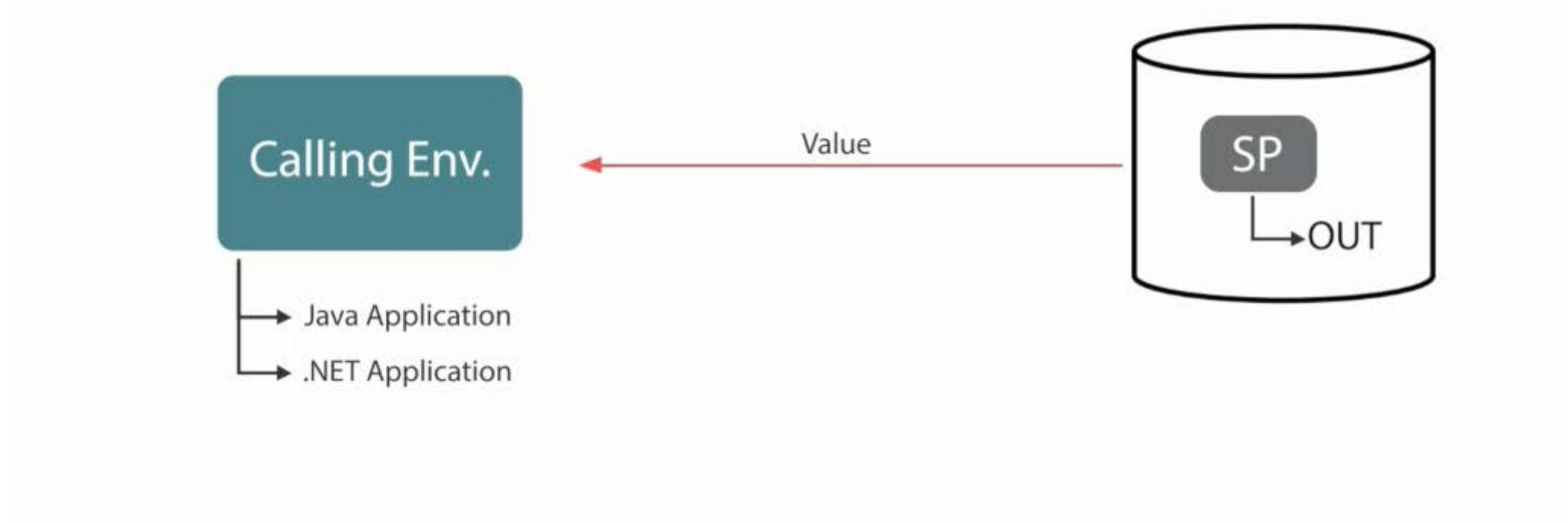   addBatch()-Returns void
    executeBatch()-Returns an array of integer

Demo

Calling Stored Procedures- Batch Processing

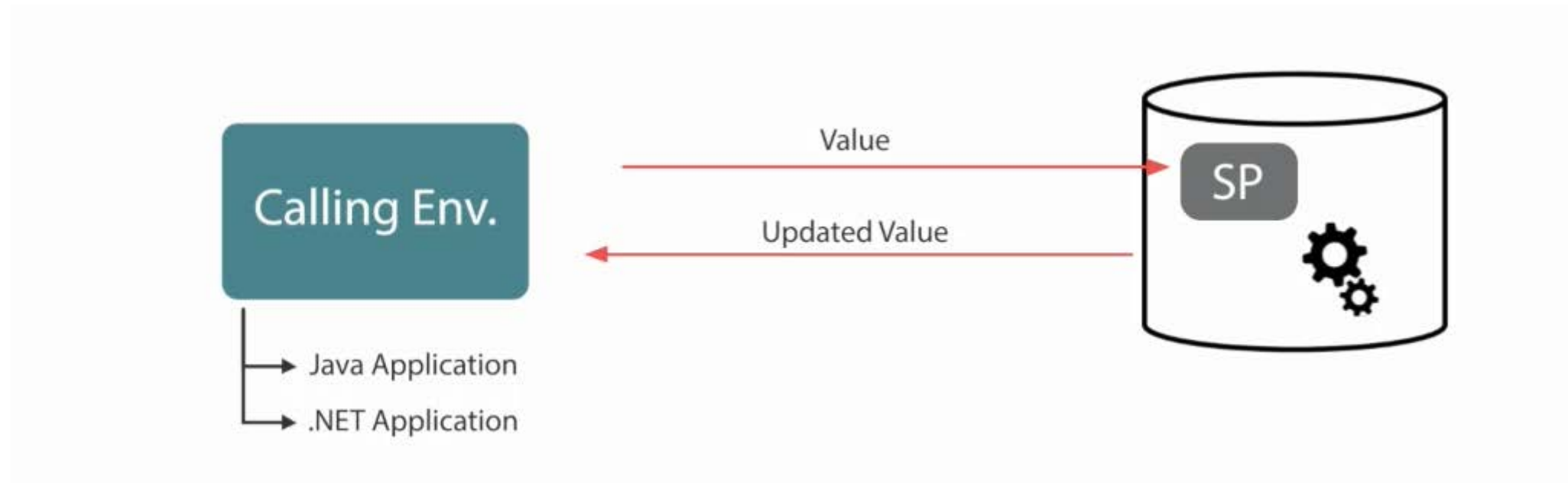# Calling Stored Procedures-OUT parameter

- Value OUT Parameter should be assigned

Demo

Calling Stored Procedures-OUT parameter

Calling Stored Procedures-IN OUT Parameter

- Both appropriate setter and RegisterOutParameter should be used

- Supplied setter value type 4 JDBC type supplied to the method RegisterOutMethod should be same

Calling Stored Procedures-IN OUT Parameter


```
SQL> Select * From Courses;

 COURSEID COURSETITLE                                          FEES
---------- -------------------------                   ----------
      101 CORE JAVA                                            1500
      102 ADV JAVA                                             2000
      103 J2EE                                                 4500
```

Courses

CourseId

CourseTitle

Fees

Students

RollNumber

StudentName

CourseId

Fees

Percentage

Calling Stored Procedures-IN OUT Parameter

```
Create or Replace Procedure GetCourseFeesById
(
cid in Courses.CourseId%Type,
cfees out Courses.Fees%Type
)
is
begin
select fees into cfees from Courses
where CourseId = cid;
end;
```

```
Create or Replace Procedure EnrollStudent(
rno in Students.RollNumber%Type,
sname in Students.StudentName%Type,
cid in Students.CourseId%Type,
cfees in out Students.Fees%Type,
spercent in Students.Percentage%Type)
as
discount number;
begin
discount := spercent * 5;
cfees := cfees - discount;
insert into Students values (rno,sname,cid,cfees,spercent);
commit;
end;
```

Demo

Calling Stored Procedures-IN OUT Parameter

Calling Stored Procedures-ResultSets

- ✔ Calling Stored Procedures – IN Parameter

- ✔ Calling Stored Procedures – OUT Parameter

- ✔ Calling Stored Procedures – IN OUT Parameter

- ✔ Calling Stored Procedures - ResultSets

Demo

Calling Stored Procedures-ResultSets

Summary

- Understanding Callable Statements

- Calling Stored Procedures-IN Parameter

- Calling Stored Procedures- Batch Processing

- Calling Stored Procedures-OUT Parameter

- Calling Stored Procedures-IN OUT Parameter

- Calling Stored Procedures-ResultSets

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