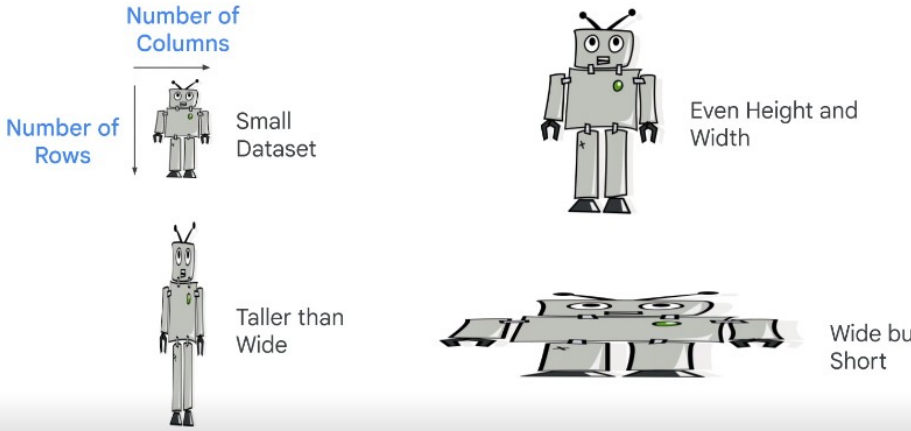


# Multi Param JDBC Template

Understanding dataset shape



Number of Columns

Number of Rows

Small Dataset

Taller than Wide

Even Height and Width

Wide but Short

Exploring and Preparing your Data with BigQuery

By Google Cloud

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CC 1.4x

# Multi Param JDBC Template

Typical Hibernate Annotation:

```
@Query("select new example.DataCollector(  
    s.server, a.app,i.instance)  
from AXS x join Server s on x.server = s.server  
join Application a on x.app = a.app  
join Instance i on x.instance = i.instance  
where s.server LIKE ?1%" )  
public List<DataCollector> findAllData();
```

# Multi Param JDBC Template

SQL Template:

```
select * from data where id in (?, ?, ?, ?, ?) and key in  
(?, ?, ?)
```

# Multi Param JDBC Template

Request Param:

```
curl -X POST  
-d "key=example+1,example+2&id=1,2,3,4,5,6"  
127.0.0.1:8080/test/query
```

```
curl -X POST  
-d  
"key=example+1&key=example+2&id=1&id=2&id=3&id=4&id=5&  
id=6" 127.0.0.1:8080/test/query
```

# Multi Param JDBC Template

Java Code:

```
public List<Data> query(List<Integer> ids, List<String> keys){
    int idSize = ids.size();
    List<Object> args = new ArrayList<>();
    String questionmarks[] = new String[idSize];
    Arrays.fill(questionmarks, "?");
    args.addAll(ids);
    // flatten args into array
    String SQL = "SELECT * FROM DATA WHERE id IN (" +
        join(",", questionmarks) + ")" + ...
    args.addAll(idSize, keys);
    ...
    return jdbcTemplate.query(SQL, args.toArray(),
        new DataMapper());
}
```

# Multi Param JDBC Template

Java Code:

```
Class.forName("org.postgresql.Driver");
pstmt = DriverManager.getConnection(URL, USER, PASSWORD)
    .prepareStatement(
        "select id from data where id in (%s)",
        join(",", questionmarks);

int cnt = 1; for (int id : ids)
    pstmt.setInt(cnt++, id);
rs = pstmt.executeQuery();
while (rs.next())
    results.add(rs.getInt("id"));
```

# Multi Param JDBC Template

Runtime Error:

`org.springframework.jdbc.BadSqlGrammarException:`

`org.postgresql.util.PSQLException`

ERROR: operator does not exist: integer = character varying

Hint: No operator matches the given name and argument types.