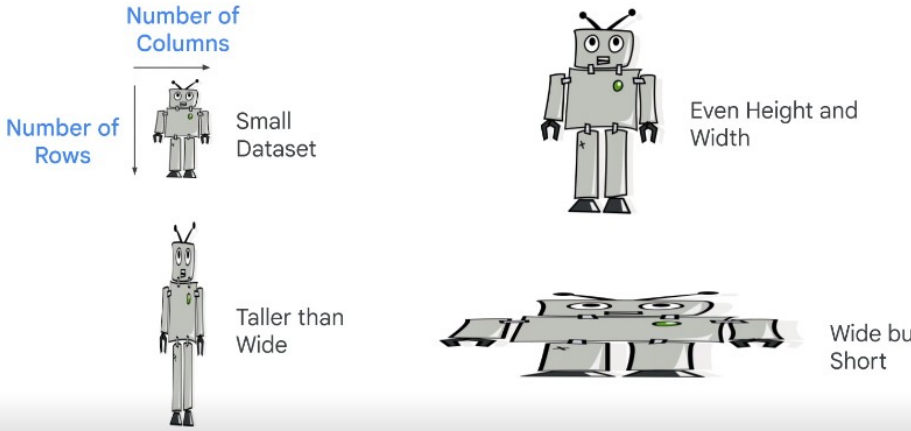


Multi Param JDBC Template

Understanding dataset shape

Proprietary + Confidential



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.