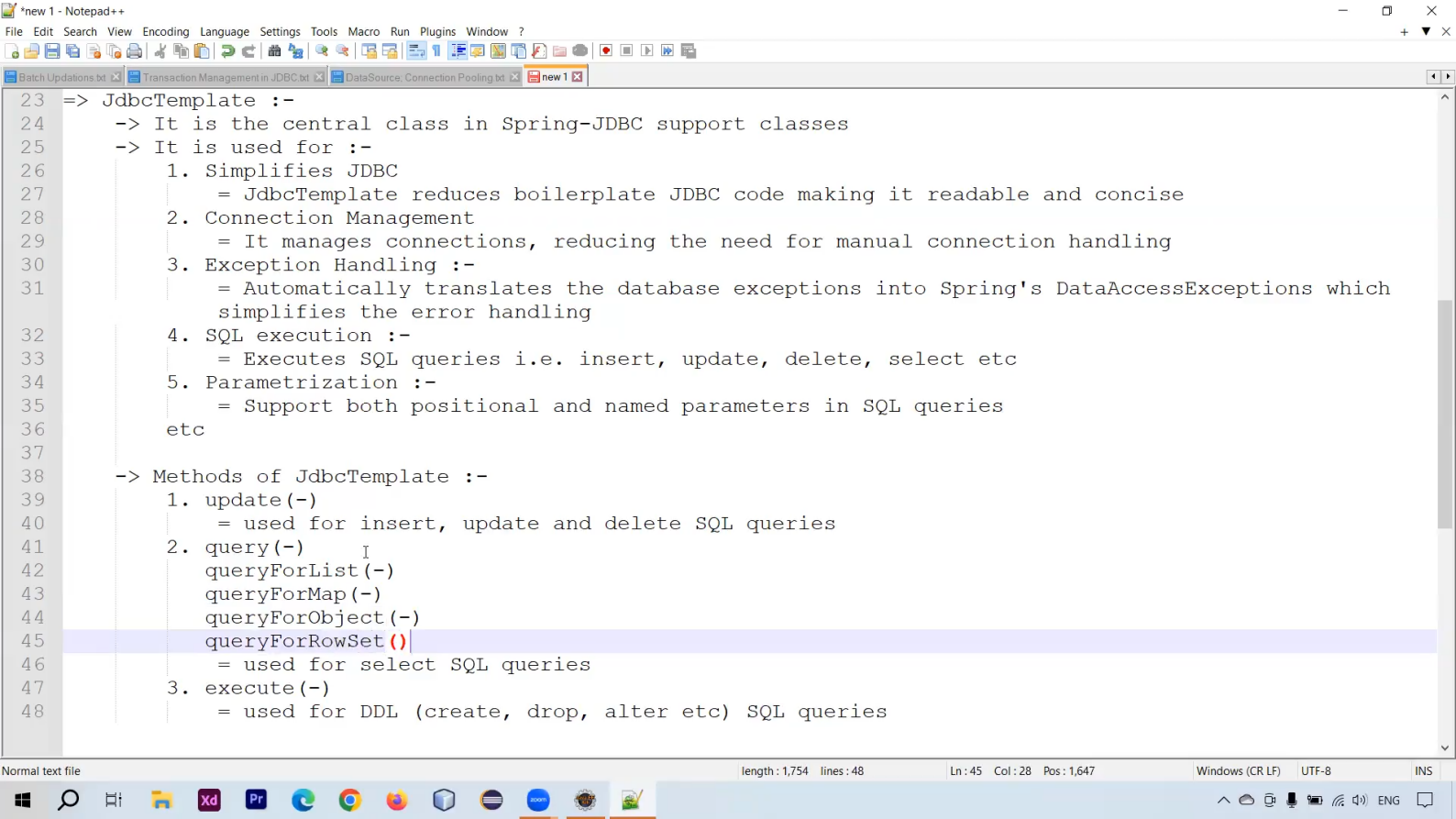
=> Spring JDBC Module :-
    -> Spring JDBC provides mechanism to connect the spring application with database and execute SQL queries
    -> NOTE : It internally uses JDBC API (but solves the problem of Plain-JDBC)

    -> Spring provides some classes which are as follows :-
        1. DriverManagerDataSource
        2. JdbcTemplate
        3. NamedParameterJdbcTemplate
           etc

=> DriverManagerDataSource :-
    -> It is an implemented class of DataSource interface which is present in "org.springframework.jdbc.datasource" package
    -> It is used for :-
        1. Database configurations
        2. Driver loading
        3. Connection creation
           etc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Batch Updations.txt
Transaction Management in JDBC.txt
DataSource: Connection Pooling.txt
new 1
=> JdbcTemplate :-
-> It is the central class in Spring-JDBC support classes
-> It is used for :-
1. Simplifies JDBC
= JdbcTemplate reduces boilerplate JDBC code making it readable and concise
2. Connection Management
= It manages connections, reducing the need for manual connection handling
3. Exception Handling :-
= Automatically translates the database exceptions into Spring's DataAccessExceptions which simplifies the error handling
4. SQL execution :-
= Executes SQL queries i.e. insert, update, delete, select etc
5. Parametrization :-
= Support both positional and named parameters in SQL queries
etc
-> Methods of JdbcTemplate :-
1. update(-)
= used for insert, update and delete SQL queries
2. query(-)
queryForList(-)
queryForMap(-)
queryForObject(-)
queryForRowSet()
= used for select SQL queries
3. execute(-)
= used for DDL (create, drop, alter etc) SQL queries
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length : 1,754 lines : 48
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Windows (CR LF)
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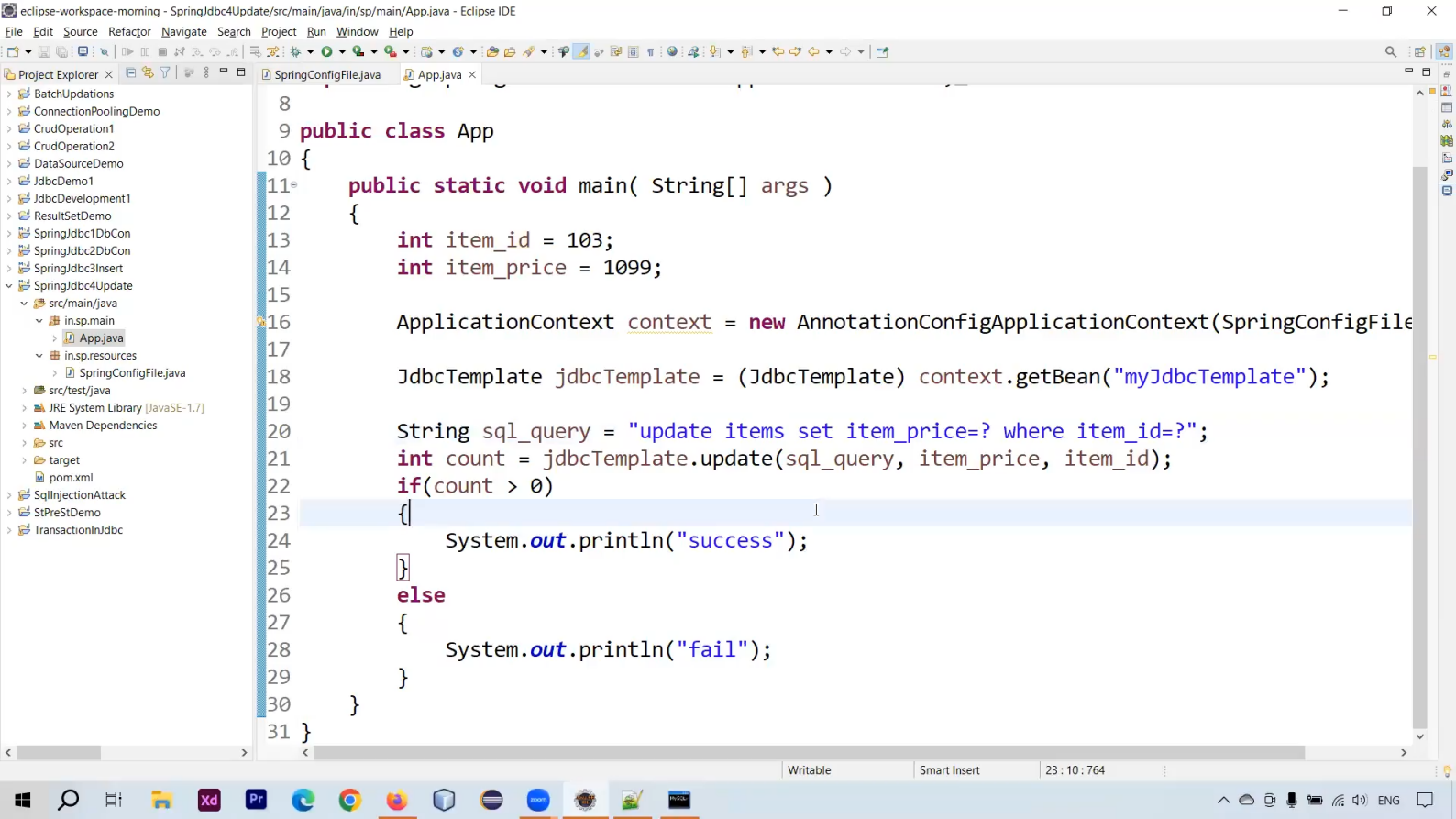
INS
ENG

SpringConfigFile.java App.java

```
9  public class App
10 {
11     public static void main( String[] args )
12     {
13         int item_id = 101;
14         String item_name = "jeans";
15         int item_price = 899;
16
17         ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile.class);
18
19         JdbcTemplate jdbcTemplate = (JdbcTemplate) context.getBean("myJdbcTemplate");
20
21         String sql_query = "insert into items values('"+item_id+"', '"+item_name+"', '"+item_price+"')";
22         int count = jdbcTemplate.update(sql_query);
23         if(count > 0)
24         {
25             System.out.println("success");
26         }
27         else
28         {
29             System.out.println("fail");
30         }
31     }
32 }
```

```
//------------------ way 2----------------------------
String sql_query = "insert into items values(?,?,?)";
int count = jdbcTemplate.update(sql_query, item_id, item_name, item_price);
if(count > 0)
{
    System.out.println("success");
}
else
{
    System.out.println("fail");
}
}
```

```
//------------------ way 3----------------------------
String sql_query = "insert into items values(?,?,?)";
int count = jdbcTemplate.update(sql_query, new Object[] {item_id, item_name, item_price});
if(count > 0)
{
    System.out.println("success");
}
else
{
    System.out.println("fail");
}
```


eclipse-workspace-morning - SpringJdbc4Update/src/main/java/in/sp/main/App.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
BatchUpdations
ConnectionPoolingDemo
CrudOperation1
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DataSourceDemo
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SpringJdbc1DbCon
SpringJdbc2DbCon
SpringJdbc3Insert
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src/main/java
in.sp.main
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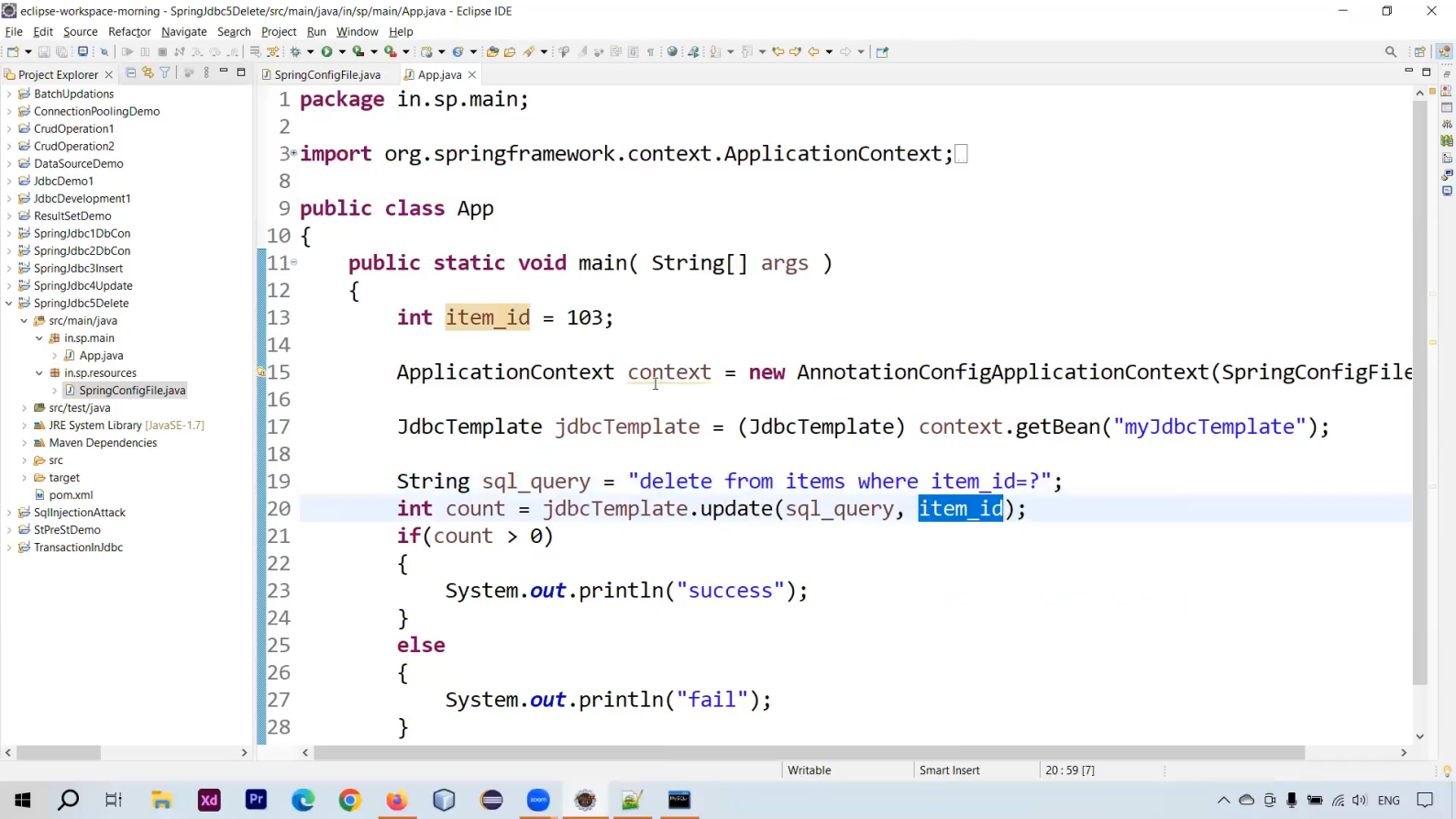
src/test/java
JRE System Library [JavaSE-1.7]
Maven Dependencies
src
target
pom.xml
SqlInjectionAttack
StPreStDemo
TransactionInJdbc
SpringConfigFile.java
App.java
8
9 public class App
10 {
11 public static void main(String[] args)
12 {
13 int item_id = 103;
14 int item_price = 1099;
15
16 ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile
17
18 JdbcTemplate jdbcTemplate = (JdbcTemplate) context.getBean("myJdbcTemplate");
19
20 String sql_query = "update items set item_price=? where item_id=?";
21 int count = jdbcTemplate.update(sql_query, item_price, item_id);
22 if(count > 0)
23 {
24 System.out.println("success");
25 }
26 else
27 {
28 System.out.println("fail");
29 }
30 }
31 }
Writable
Smart Insert
23 : 10 : 764
ENG


eclipse-workspace-morning - SpringJdbc5Delete/src/main/java/in/sp/main/App.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
BatchUpdations
ConnectionPoolingDemo
CrudOperation1
CrudOperation2
DataSourceDemo
JdbcDemo1
JdbcDevelopment1
ResultSetDemo
SpringJdbc1DbCon
SpringJdbc2DbCon
SpringJdbc3Insert
SpringJdbc4Update
SpringJdbc5Delete
src/main/java
in.sp.main
App.java
in.sp.resources
SpringConfigFile.java
src/test/java
JRE System Library [JavaSE-1.7]
Maven Dependencies
src
target
pom.xml
SqlInjectionAttack
StPreStDemo
TransactionInJdbc
SpringConfigFile.java
App.java
1 package in.sp.main;
2
3 import org.springframework.context.ApplicationContext;
8
9 public class App
10 {
11 public static void main(String[] args)
12 {
13 int item_id = 103;
14
15 ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile
16
17 JdbcTemplate jdbcTemplate = (JdbcTemplate) context.getBean("myJdbcTemplate");
18
19 String sql_query = "delete from items where item_id=?";
20 int count = jdbcTemplate.update(sql_query, item_id);
21 if(count > 0)
22 {
23 System.out.println("success");
24 }
25 else
26 {
27 System.out.println("fail");
28 }
Writable
Smart Insert
20 : 59 [7]
ENG

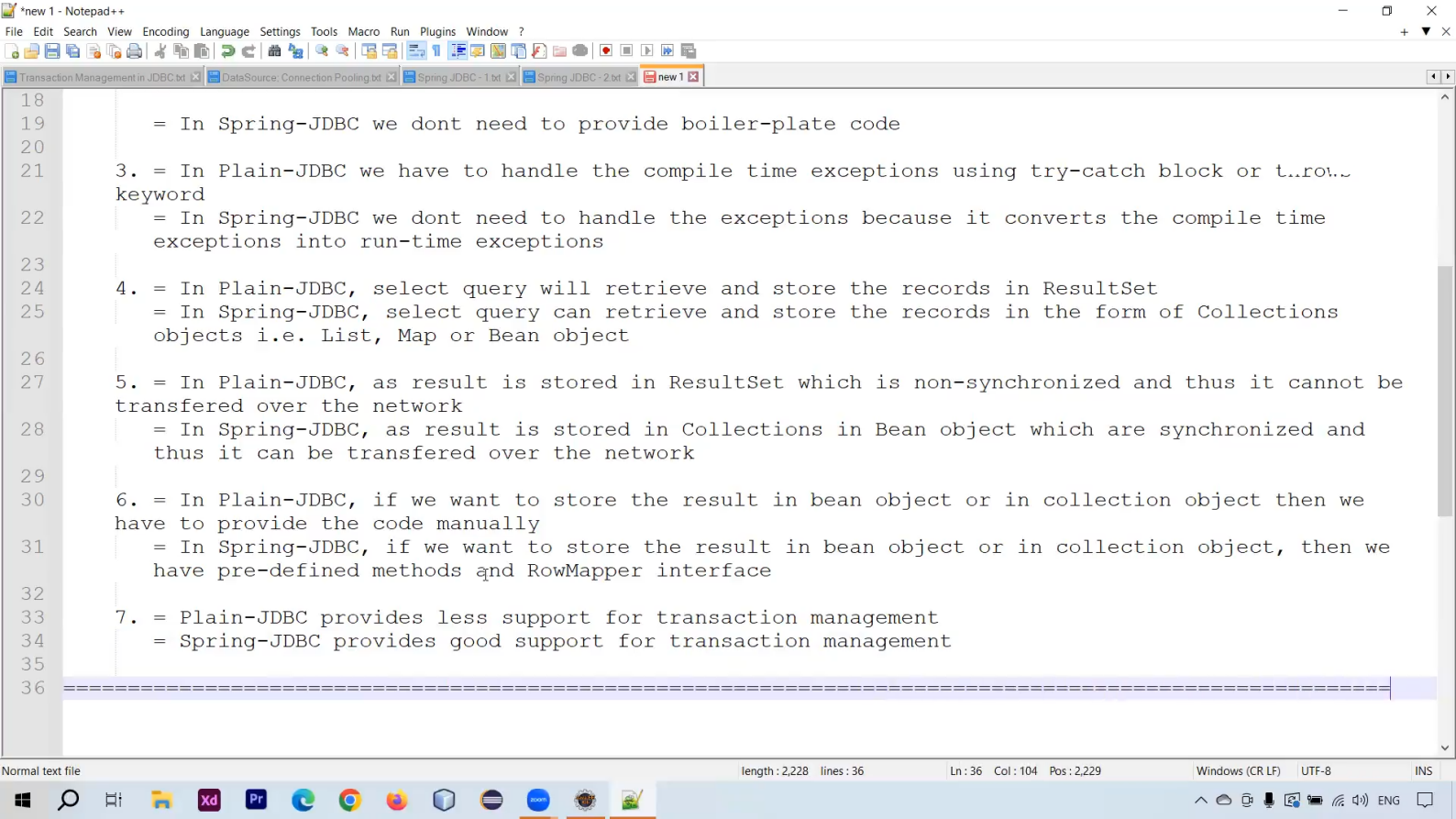
=> Difference between Plain-JDBC and Spring-JDBC :-

1. = In Plain-JDBC we have to get the connection object manually
   = In Spring-JDBC, connection object is automatically provided by JdbcTemplate class

2. = In Plain-JDBC we have following steps :-

   i. Load and register driver
      Class.forName("----");
   ii. Create connection object
      Connection con = DriverManager.getConnection("url", "username", "password");
   iii. Create Statement, PreparedStatement or CallableStatement object
      Statement st = con.createStatement();
   iv. Write and execute SQL query
      st.executeQuery("----sql query----");
   v. Close the resources
      st.close();
      con.close();
   -> NOTE : above 1,2,3 and 5th steps are always same but 4th step is variable. These common steps (1,2,3,5) are known as boiler-plate code which we have to write again and again

   = In Spring-JDBC we dont need to provide boiler-plate code


*new 1 - Notepad++
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Transaction Management in JDBC.txt
DataSource: Connection Pooling.txt
Spring JDBC - 1.txt
Spring JDBC - 2.txt
new 1
= In Spring-JDBC we dont need to provide boiler-plate code
3. = In Plain-JDBC we have to handle the compile time exceptions using try-catch block or t...ro...
keyword
= In Spring-JDBC we dont need to handle the exceptions because it converts the compile time
exceptions into run-time exceptions
4. = In Plain-JDBC, select query will retrieve and store the records in ResultSet
= In Spring-JDBC, select query can retrieve and store the records in the form of Collections
objects i.e. List, Map or Bean object
5. = In Plain-JDBC, as result is stored in ResultSet which is non-synchronized and thus it cannot be
transfered over the network
= In Spring-JDBC, as result is stored in Collections in Bean object which are synchronized and
thus it can be transfered over the network
6. = In Plain-JDBC, if we want to store the result in bean object or in collection object then we
have to provide the code manually
= In Spring-JDBC, if we want to store the result in bean object or in collection object, then we
have pre-defined methods and RowMapper interface
7. = Plain-JDBC provides less support for transaction management
= Spring-JDBC provides good support for transaction management
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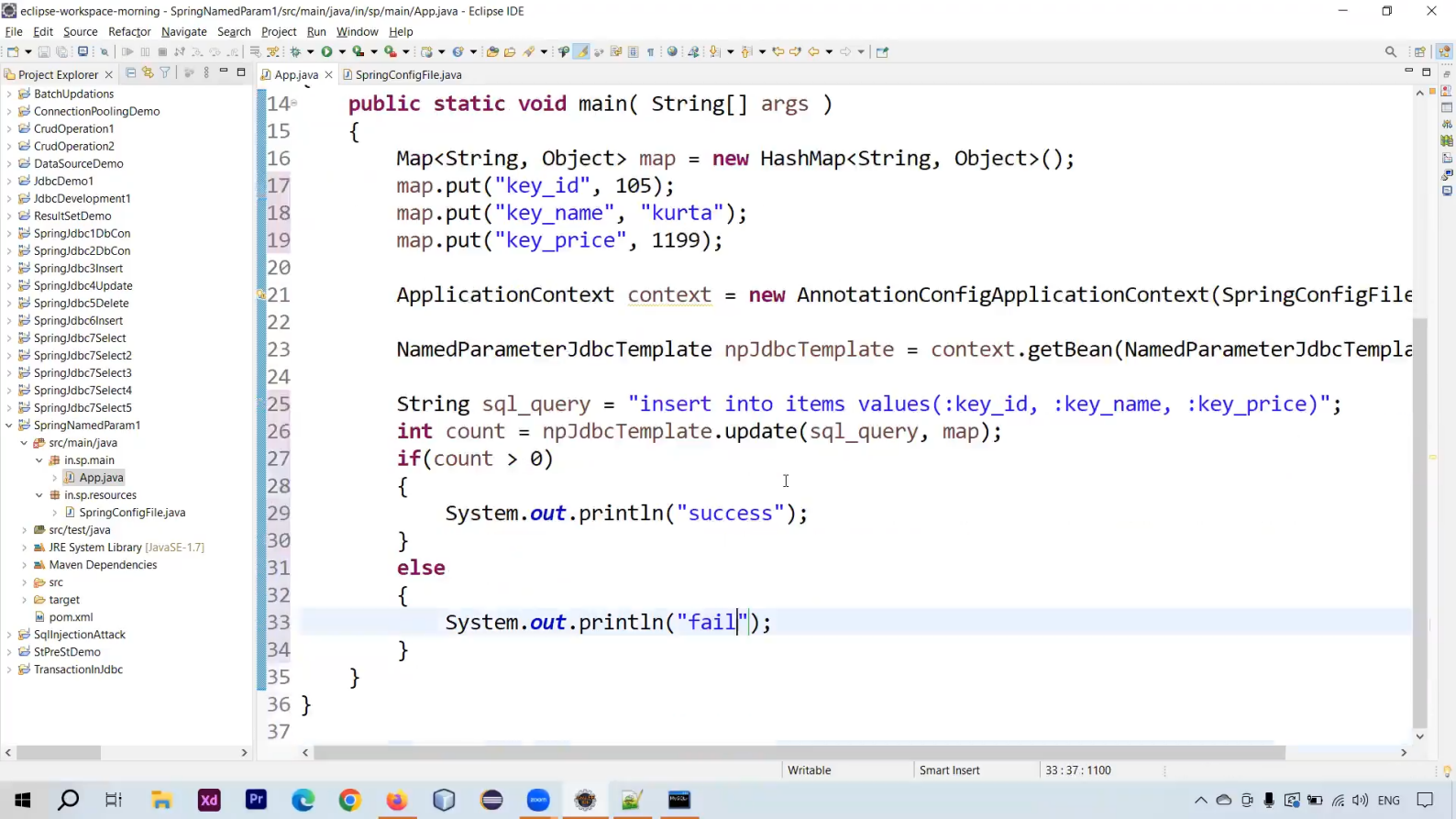
=> NamedParameterJdbcTemplate :-
-> It is the class which is provided by Spring framework as the part of Spring-JDBC module
-> It provides "higher-level abstraction" and more convenient way to work with SQL queries
= A "higher-level abstraction" means that it provides user-friendly way to interact wit.. th..
system as compared to lower-level abstraction

-> Why we need NamedParameterJdbcTemplate :-
= In JdbcTemplate, we provide "Positional Parameters" which is not user-friendly because if there are a lot of positional parameters then it will create confusion. To remove this confusion we use NamedParameterJdbcTemplate in which we use "Named Parameters"

-> We can provide "Named Parameters" by 2 ways :-
1. By using Map <interface>
= We can use any implemented class of Map interface for eg. HashMap etc
2. By using SqlParameterSource <interface>
= We can use below implemented classes :-
a. MapSqlParameterSource
b. BeanPropertySqlParameterSource


eclipse-workspace-morning - SpringNamedParam1/src/main/java/in/sp/main/App.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
BatchUpdations
ConnectionPoolingDemo
CrudOperation1
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ResultSetDemo
SpringJdbc1DbCon
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SpringJdbc3Insert
SpringJdbc4Update
SpringJdbc5Delete
SpringJdbc6Insert
SpringJdbc7Select
SpringJdbc7Select2
SpringJdbc7Select3
SpringJdbc7Select4
SpringJdbc7Select5
SpringNamedParam1
src/main/java
in.sp.main
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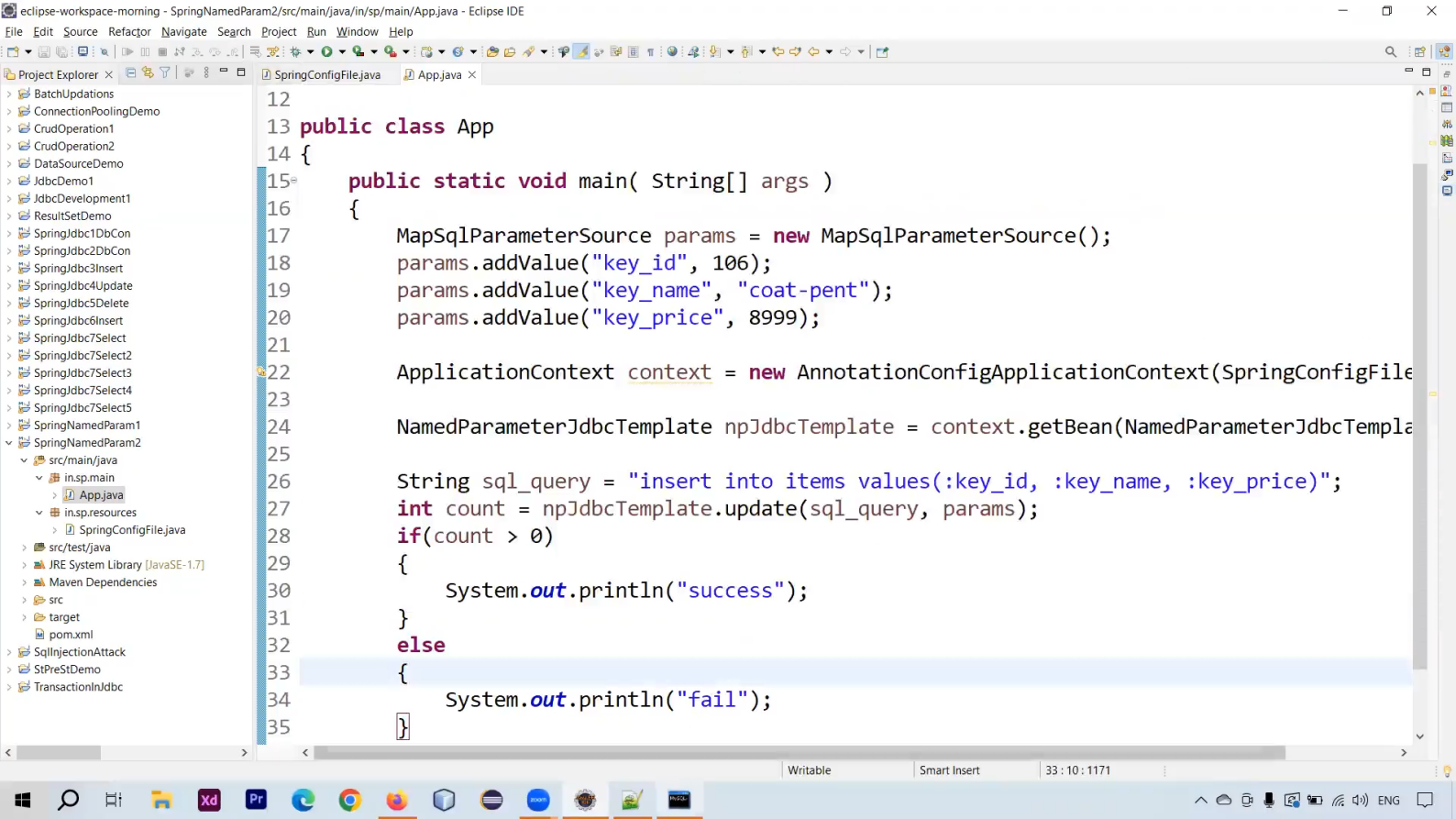
in.sp.resources
SpringConfigFile.java
src/test/java
JRE System Library [JavaSE-1.7]
Maven Dependencies
src
target
pom.xml
SqlInjectionAttack
StPreStDemo
TransactionInJdbc
App.java
SpringConfigFile.java
14 public static void main(String[] args)
15 {
16 Map<String, Object> map = new HashMap<String, Object>();
17 map.put("key_id", 105);
18 map.put("key_name", "kurta");
19 map.put("key_price", 1199);
20
21 ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile
22
23 NamedParameterJdbcTemplate npJdbcTemplate = context.getBean(NamedParameterJdbcTempla
24
25 String sql_query = "insert into items values(:key_id, :key_name, :key_price)";
26 int count = npJdbcTemplate.update(sql_query, map);
27 if(count > 0)
28 {
29 System.out.println("success");
30 }
31 else
32 {
33 System.out.println("fail");
34 }
35 }
36 }
37
Writable
Smart Insert
33 : 37 : 1100
ENG


eclipse-workspace-morning - SpringNamedParam2/src/main/java/in/sp/main/App.java - Eclipse IDE
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Project Explorer
BatchUpdations
ConnectionPoolingDemo
CrudOperation1
CrudOperation2
DataSourceDemo
JdbcDemo1
JdbcDevelopment1
ResultSetDemo
SpringJdbc1DbCon
SpringJdbc2DbCon
SpringJdbc3Insert
SpringJdbc4Update
SpringJdbc5Delete
SpringJdbc6Insert
SpringJdbc7Select
SpringJdbc7Select2
SpringJdbc7Select3
SpringJdbc7Select4
SpringJdbc7Select5
SpringNamedParam1
SpringNamedParam2
src/main/java
in.sp.main
App.java
in.sp.resources
SpringConfigFile.java
src/test/java
JRE System Library [JavaSE-1.7]
Maven Dependencies
src
target
pom.xml
SqlInjectionAttack
StPreStDemo
TransactionInJdbc
SpringConfigFile.java
App.java
12
13 public class App
14 {
15 public static void main(String[] args)
16 {
17 MapSqlParameterSource params = new MapSqlParameterSource();
18 params.addValue("key_id", 106);
19 params.addValue("key_name", "coat-pent");
20 params.addValue("key_price", 8999);
21
22 ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile
23
24 NamedParameterJdbcTemplate npJdbcTemplate = context.getBean(NamedParameterJdbcTempla
25
26 String sql_query = "insert into items values(:key_id, :key_name, :key_price)";
27 int count = npJdbcTemplate.update(sql_query, params);
28 if(count > 0)
29 {
30 System.out.println("success");
31 }
32 else
33 {
34 System.out.println("fail");
35 }
Writable
Smart Insert
33 : 10 : 1171
ENG

```
MapSqlParameterSource params = new MapSqlParameterSource();
params.addValue("key_id", 106);
params.addValue("key_name", "coat-pent");
params.addValue("key_price", 8999);

MapSqlParameterSource params = new MapSqlParameterSource();
params.addValue("key_id", 107)
        .addValue("key_name", "top")
        .addValue("key_price", 999);
```

eclipse-workspace-morning - SpringNamedParam3/src/main/java/in/sp/main/App.java - Eclipse IDE

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SpringConfigFile.java | App.java | Items.java

```
15      {
16          Items items = new Items();
17          items.setItemid(108);
18          items.setItemname("lehnga");
19          items.setItemprice(20000);
20
21          BeanPropertySqlParameterSource params = new BeanPropertySqlParameterSource(items);
22
23          ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile.class);
24
25          NamedParameterJdbcTemplate npJdbcTemplate = context.getBean(NamedParameterJdbcTemplate.class);
26
27          String sql_query = "insert into items values(:itemid, :itemname, :itemprice)";
28          int count = npJdbcTemplate.update(sql_query, params);
29          if(count > 0)
30          {
31              System.out.println("success");
32          }
33          else
34          {
35              System.out.println("fail");
36          }
37      }
38  }
```

Writable | Smart Insert | 24 : 9 : 882

ENG

App.java SpringConfigFile.java

```java
import org.springframework.context.annotation.AnnotationConfigApplicationContext;
import org.springframework.jdbc.core.JdbcTemplate;

import in.sp.resources.SpringConfigFile;

public class App
{
    public static void main( String[] args )
    {
        ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile.class);

        JdbcTemplate jdbcTemplate = context.getBean(JdbcTemplate.class);

        String query1 = "insert into items values(101, 'shirt', 500)";
        String query2 = "insert into items values(102, 't-shirt', 600)";
        String query3 = "insert into items values(103, 'jeans', 700)";

        int[] count = jdbcTemplate.batchUpdate(query1, query2, query3);
        for(int i : count)
        {
            System.out.println(i+" : success");
        }
    }
}
```

```
//------------------way 2-----------------------------------------------
String query1 = "insert into items values(101, 'shirt', 500)";
String query2 = "insert into items values(102, 't-shirt', 600)";
String query3 = "insert into items values(103, 'jeans', 700)";

String[] queries = {query1, query2, query3};

int[] count = jdbcTemplate.batchUpdate(queries);
for(int i : count)
{
    System.out.println(i+" : success");
}
```

```
=> Spring Batch Updates :-
    -> It is a batch of updates grouped together and sent to the database in one batch rather then
    sending them one by one
    -> Advantages :-
        = Application performance will be improved
        = Network traffic will be reduced
    -> Disadvantages :-
        = It can only be used for "insert, update and delete" SQL query, not for select SQL query
        = If any single SQL query gets an error then it will disturb the flow of program

    -> In Spring-JDBC, for batch update we have one method :-
        = batchUpdate(-)
```

```
public class App
{
    public static void main( String[] args )
    {
```

```
Items item1 = new Items();
item1.setItemid(101);
item1.setItemname("shirt");
item1.setItemprice(500);

Items item2 = new Items();
item2.setItemid(102);
item2.setItemname("t-shirt");
item2.setItemprice(700);

Items item3 = new Items();
item3.setItemid(103);
item3.setItemname("jeans");
item3.setItemprice(900);


final List<Items> items_list = new ArrayList<Items>();
items_list.add(item1);
items_list.add(item2);
items_list.add(item3);
```

item1: 101 shirt 500

item2: 102 t-shirt 700

item3:

items_list: [101 shirt 500] [102 t-shirt 700] [ ]

```
    }
}
```

```
ApplicationContext context = new ----------
JdbcTemplate jdbcTemplate = context.getBean(JdbcTemplate.class);

String sql_query = "insert into items values(?,?,?)";
jdbcTemplate.batchUpdate(sql_query, new BatchPreparedStatementSetter() {

    @Override
    public void setValues(PreparedStatement ps, int index) throws SQLException
    {
        Items item = items_list.get(index);

        ps.setInt(1, item.getItemid());
        ps.setString(2, item.getItemname());
        ps.setInt(3, item.getItemprice());
    }

    @Override
    public int getBatchSize()
    {
        return items_list.size();
    }
});
```

3

```java
@Bean
public DataSource createDataSourceObj()
{
    HikariConfig config = new HikariConfig();
    config.setJdbcUrl("jdbc:mysql://localhost:3306/shopping_app");
    config.setUsername("root");
    config.setPassword("root");
    config.setMaximumPoolSize(5);

    HikariDataSource hikariDataSource = new HikariDataSource(config);
    return hikariDataSource;
}
```

eclipse-workspace-morning - SpringConnectionPooling1/src/main/java/in/sp/main/App.java - Eclipse IDE

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App.java SpringConfigFile.java

```
12 public class App
13 {
14     public static void main( String[] args ) throws Exception
15     {
16         ApplicationContext context = new AnnotationConfigApplicationContext(SpringConfigFile.class);
17
18         DataSource dataSource = context.getBean(DataSource.class);
19
20         Connection con1 = dataSource.getConnection();
21         Connection con2 = dataSource.getConnection();
22         Connection con3 = dataSource.getConnection();
23         Connection con4 = dataSource.getConnection();
24         Connection con5 = dataSource.getConnection();
25
26         con1.close();
27         con2.close();
28
29         Connection con6 = dataSource.getConnection();
30         Connection con7 = dataSource.getConnection();
31
32         System.out.println("success");
33     }
34 }
35
```

Writable Smart Insert 23 : 19 : 736

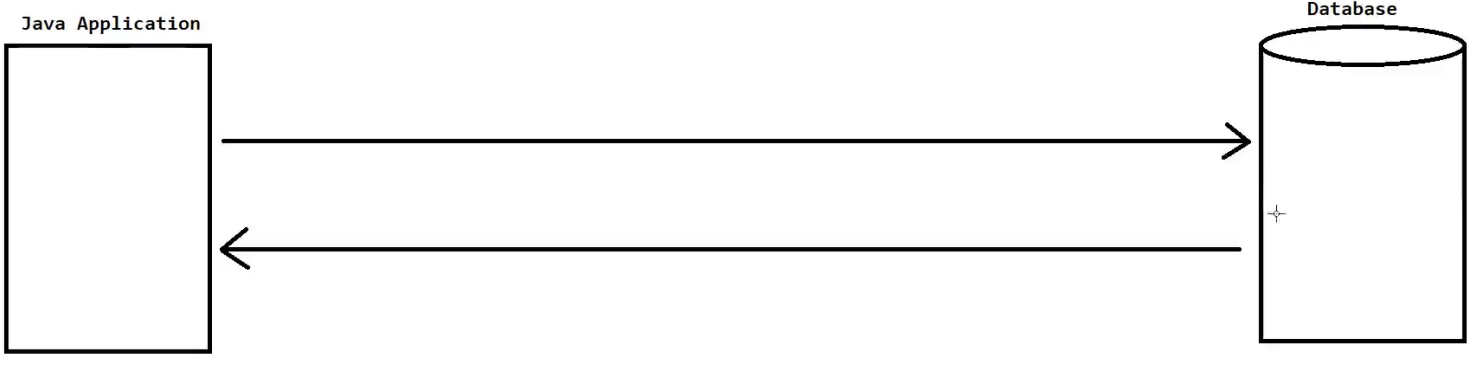
ENG

=> Design Patterns :-
    -> Design patterns are established best practices and reusable templates for solving common software design problem
        = "established best practices" means that these practices have been tried, tested and widely recognized as effective solutions
    -> They offer structured approaches to create relationssips and interactions between classes and objects, promoting efficient, maintanable and scalable code
    -> For eg.
        = Singleton Design Pattern
        = Factory Design Pattern
        = Abstract Factory Design Pattern
        = Prototype Design Pattern
        = DAO Design Pattern
        = MVC Design Pattern
        = Dependency Injection Design Pattern
          etc

    -> NOTE : There is one book for design patterns i.e. "Design Patterns : Elements of Reusable Object-Oriented Software"

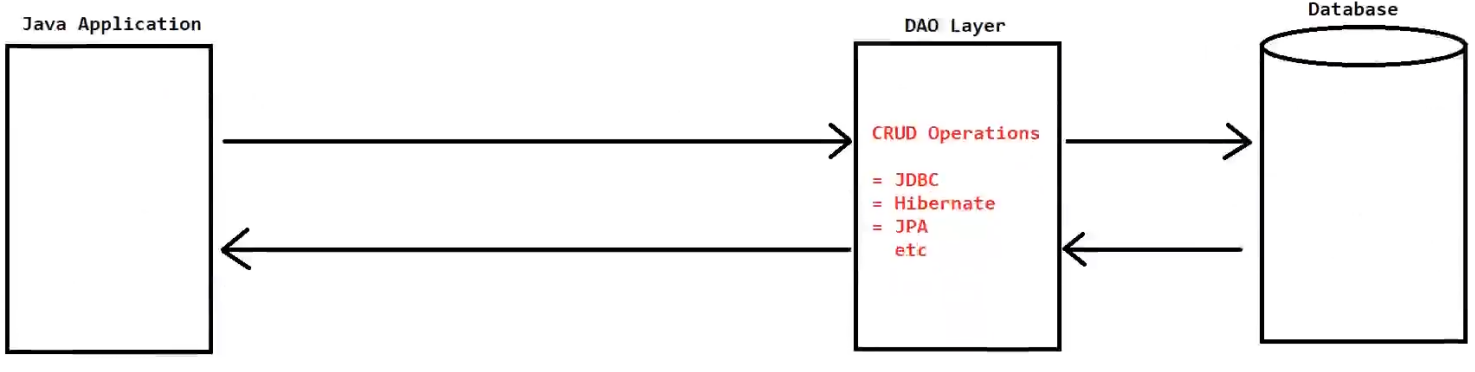
==========

This is Old Approach

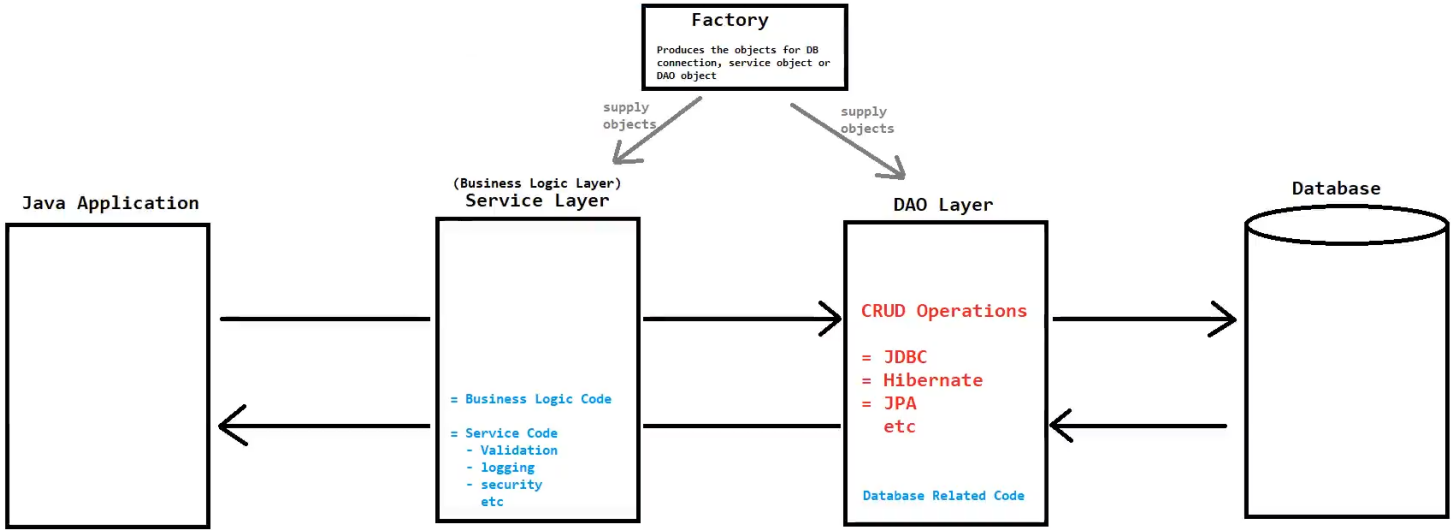


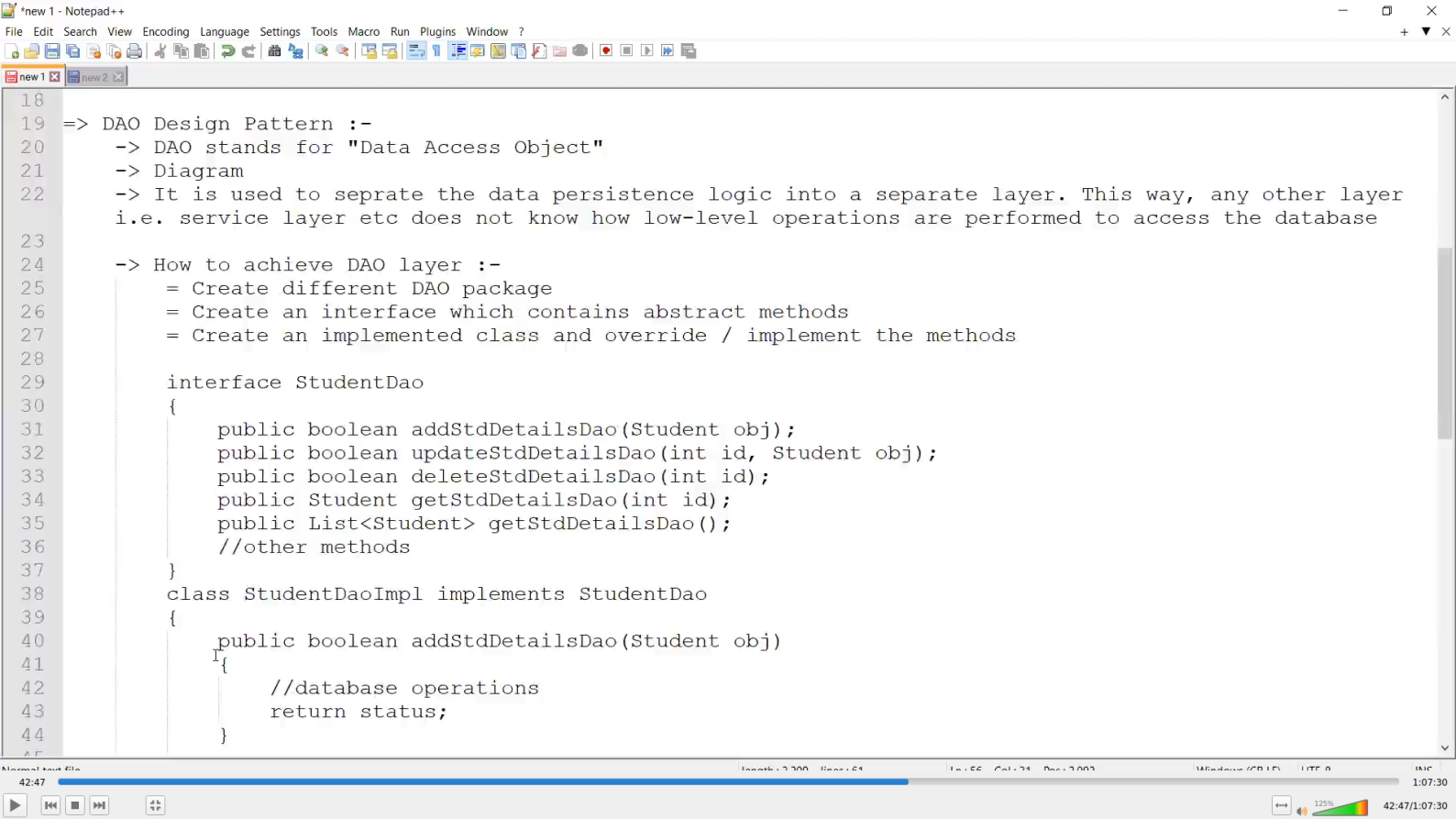
Simple DAO Design Pattern

This is New Approach



This is Modular Design Pattern

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File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
new 1
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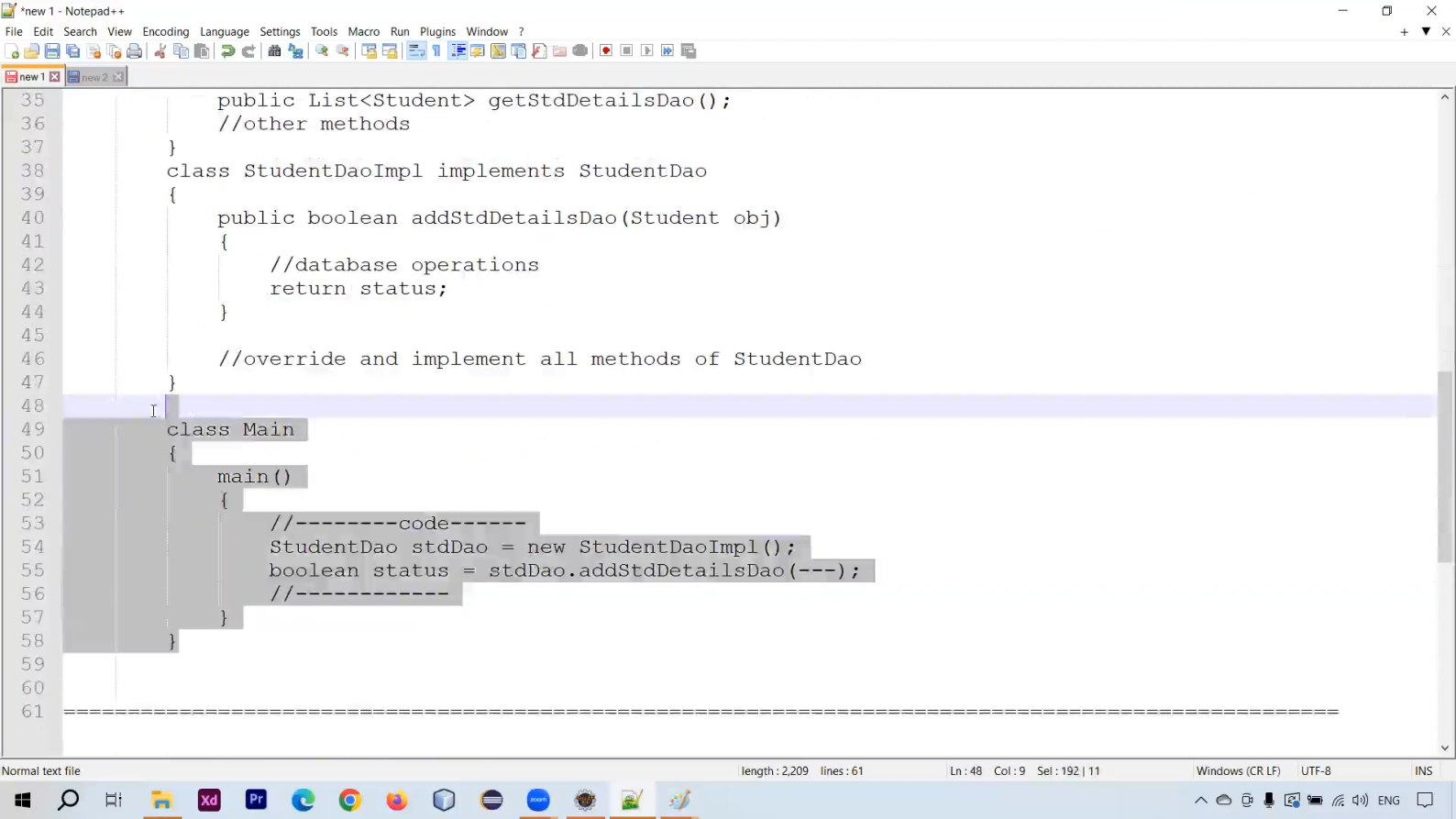
=> DAO Design Pattern :-
-> DAO stands for "Data Access Object"
-> Diagram
-> It is used to seprate the data persistence logic into a separate layer. This way, any other layer i.e. service layer etc does not know how low-level operations are performed to access the database
-> How to achieve DAO layer :-
= Create different DAO package
= Create an interface which contains abstract methods
= Create an implemented class and override / implement the methods
interface StudentDao
{
public boolean addStdDetailsDao(Student obj);
public boolean updateStdDetailsDao(int id, Student obj);
public boolean deleteStdDetailsDao(int id);
public Student getStdDetailsDao(int id);
public List<Student> getStdDetailsDao();
//other methods
}
class StudentDaoImpl implements StudentDao
{
public boolean addStdDetailsDao(Student obj)
{
//database operations
return status;
}
42:47
1:07:30
42:47/1:07:30


*new 1 - Notepad++
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new 1
new 2
public List<Student> getStdDetailsDao();
//other methods
}
class StudentDaoImpl implements StudentDao
{
public boolean addStdDetailsDao(Student obj)
{
//database operations
return status;
}
//override and implement all methods of StudentDao
}
class Main
{
main()
{
//--------code------
StudentDao stdDao = new StudentDaoImpl();
boolean status = stdDao.addStdDetailsDao(---);
//------------
}
}
Normal text file
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ENG

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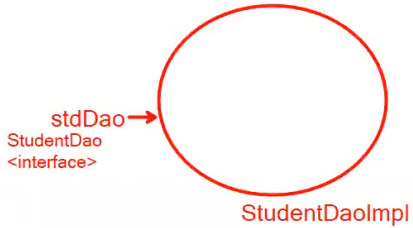
```
interface StudentDao
{
    public boolean addStdDetailsDao(Student obj);
    public boolean updateStdDetailsDao(int id, Student obj);
    public boolean deleteStdDetailsDao(int id);
    public Student getStdDetailsDao(int id);
    public List<Student> getStdDetailsDao();
    //other methods
}
class StudentDaoImpl implements StudentDao
{
    public boolean addStdDetailsDao(Student obj)
    {
        //database operations
        return status;
    }

    //override and implement all methods of StudentDao
}
```

```
class Main
{
    main()
    {
        //--------code------
        StudentDao stdDao = new StudentDaoImpl();
        boolean status = stdDao addStdDetailsDao(---);
        //------------
    }
}
```



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ENG

=> Spring DAO :-
    -> Spring DAO is a concept (design pattern) to work with database technologies i.e. JDBC, Hibernate, JPA etc in an easy way
    -> We can achieve DAO design pattern in spring by 3 ways :-
        1. By straight-forward and traiditional way
        2. By extending DAO support classes
        3. By using Annotations

=> By straight-forward and traiditional way :-
    -> This approach involves the creationof custom classes to perform data access operations in a traiditional way without relying on spring pre-defined classes or annotations

---

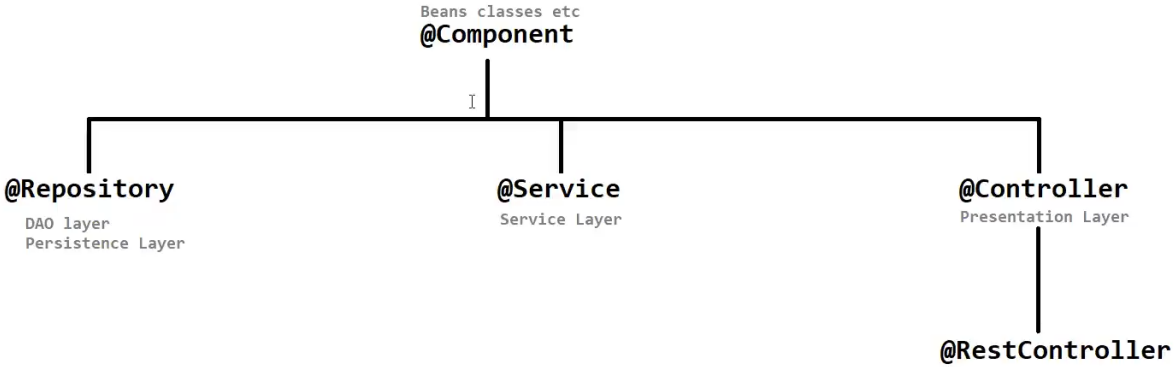
=> By extending DAO support classes :-

-> Spring has provided some DAO support classes (XxxDaoSupport) to simplify certain aspects of DAO development

-> Spring has provided many DAO support classes and 2 main classes are :-

1. JdbcDaoSupport
   = public final void setDataSource(DataSource dataSource){ - }
   = public final void setJdbcTemplate(JdbcTemplate jdbcTemplate) { - }
   = public final JdbcTemplate getJdbcTemplate() { - }
   etc
2. NamedParameterJdbcDaoSupport

-> NOTE : This is not a standalone approach because we still need to extend and customize the classes to create our specific DAO's


Beans classes etc
@Component
@Repository
DAO layer
Persistence Layer
@Service
Service Layer
@Controller
Presentation Layer
@RestController

=> By using Annotations :-
    -> Spring provides some annotations which can simplify the configuration and make our DAO's more concise and declative
    -> Main annotations are :-
        1. @Repository
        2. @Transactional

        3. @Service
        4. @Autowired

=> @Repository :-
    -> It is used with DAO layer
    -> It is a specialization of @Component

=> @Transactional :-
    -> It is used for transaction management

=> @Service :-
    -> It is used with service layer
    -> it is a specialization of @Component

(iv) SpringConfig.java → It will annotated by @Configuration
@ComponentScan (basePackages = "mee")

ye iske andar ka sara class
class bean automatically bana
dega.

It has only two work.

① Create the Bean of DataSource

② Create the Bean of JdbcTemplate

And jitne bhi class hai sara ka Object spring
handle kr lega.

(v) Main-class → same hoga
but Student ka Object bana
kr Set kr deya
usme value

& Baki sara cheez same rahega.

(III) Spring config.

```
@Bean
public DataSource mydatasource() {
    DriverManagerDataSource datasource = .....
    { connection for database
    return datasource;
}
```

for connection

```
@Bean.
public JDBC Template jdbcTemplate() {
    jdbc Temp jbcte = new ...;
    jdbctemplate.set( my Datasource() );
    return jdbc ;
}
```

then jdbc data daal payga Sql mein.

Same @ Student DAO , @ Student , @ Student Servi.

(IV) Service class. → private StudentDAO StdDao;
↳ setter method for StudentDAO;

```
public boolean addStudentService( Student student ) {
    boolean Status = StudentDAO.addStdDetail( Student);
    return Status;
}
```

(V) Main :- App.jav

```
boolean Status = Service.addStudentServi (Student);
if( Status ) {
    S.O.p("Succesn");
}
else
    S.O.p( "Fail");
```

Flow → App.java to Servi.ja to StdDao
Status Status

Annotation pat (Spring) — DAO pattern

Working

(1) → we dont need to create the bean by our self it is done by spring

→ in Annotation we use @Service, @Repository, @Autowired

@componentscan inbuilt rehta hai.

→ (1) bean → as usual

(II) Student DAO Imp → we annotate it with @Repository.

↳ @Autowired

public JdbcTemplate jdbcTemplate;

Then spring will handle the object and inject into it.

public void setJdbcTemplate (JdbcTemplate jdbcTemplate) { ... }

(III) Spring Service Imp → we annotate it with @Service

@Autowired

public private StudentDAO studentDAO;

public void setStudentDAO (StudentDAO studentDAO) { ... }

Simple Spring DAO Pattern

Working of DAO pattern

① → bean → Student → spring will handle.
- ↳ name
- ↳ age
- ↳ Marks

② interface → StudentDao → Method declaration
↳ public boolean addStdDetails (Student student);

It takes student object as param to get Name, age and marks.

implementation class → StudentImp →

```
private JdbcTemplate jdbcTemplate;
```
↳ Setter method of this

```
boolean status = false;
boolean addStdDetails (Student student){
    String sql_query = " . . . . ";
    int count = jdbc template. update ( Sql_Qur , Student.getNam
                                        . . . . );
    if ( count > 0) {
        Status = true;
    }
    else
        status = false;
    }
    return Stata
}
```

DAO Pattern

Using JDBC.

Working of DAO pattern

(I) Bean class.
- name
- age
- marks.

→ object → spring will handle. Variable handle ker liya.

(II) → DAO (Interface) → Method Rahega sirf

boolean addStudDetails (Student student);

taki wo set ker paye value.

DAO (Implementation class) → It will Return the Status.

```
boolean addStudDetails (Student stud) {
    (* object null jayega)
    try {
        Connection con = DbConnection.getConnection();
        Prepared Statement ....
        ps.setString(1, student.getName());   // beans se liya object. / variable null jay
        int count = prepare stat.executeUpdate();
        if (count > 0) {
            status = true
        }
        else
            status = false
        return status;   // last mein status
```

(III) DB Connection class → It builds the connection b/w the database.

↳ It return the connection object.

```
public static Connection con;
public static Connection getConnection() {
    try {
```

Connection to database

}
catch (exception e) {

e.printStackTrace();

}

return con; ye Connection ka object return kr raha hai.

(iv) Main class.

```
Student std2 = new Student();
Std.setName("Payush");
Std.setAge(21);
Std.setMarks(95);

StudentDAO stddao = new StudentImpDAO();
interface                    class.

int Status = stddao.addStudentDetails(Student);

if(Status)<0.
    S.O.P("Success");
else
    S.O.P("Fail");
```

}