

B.Sc. In Software Development. Year 4.
Semester I. Enterprise Development.
Connection Pooling.



**LIMERICK INSTITUTE
OF TECHNOLOGY**
**SCHOOL OF SCIENCE,
ENGINEERING & I.T.**

Department of Information Technology

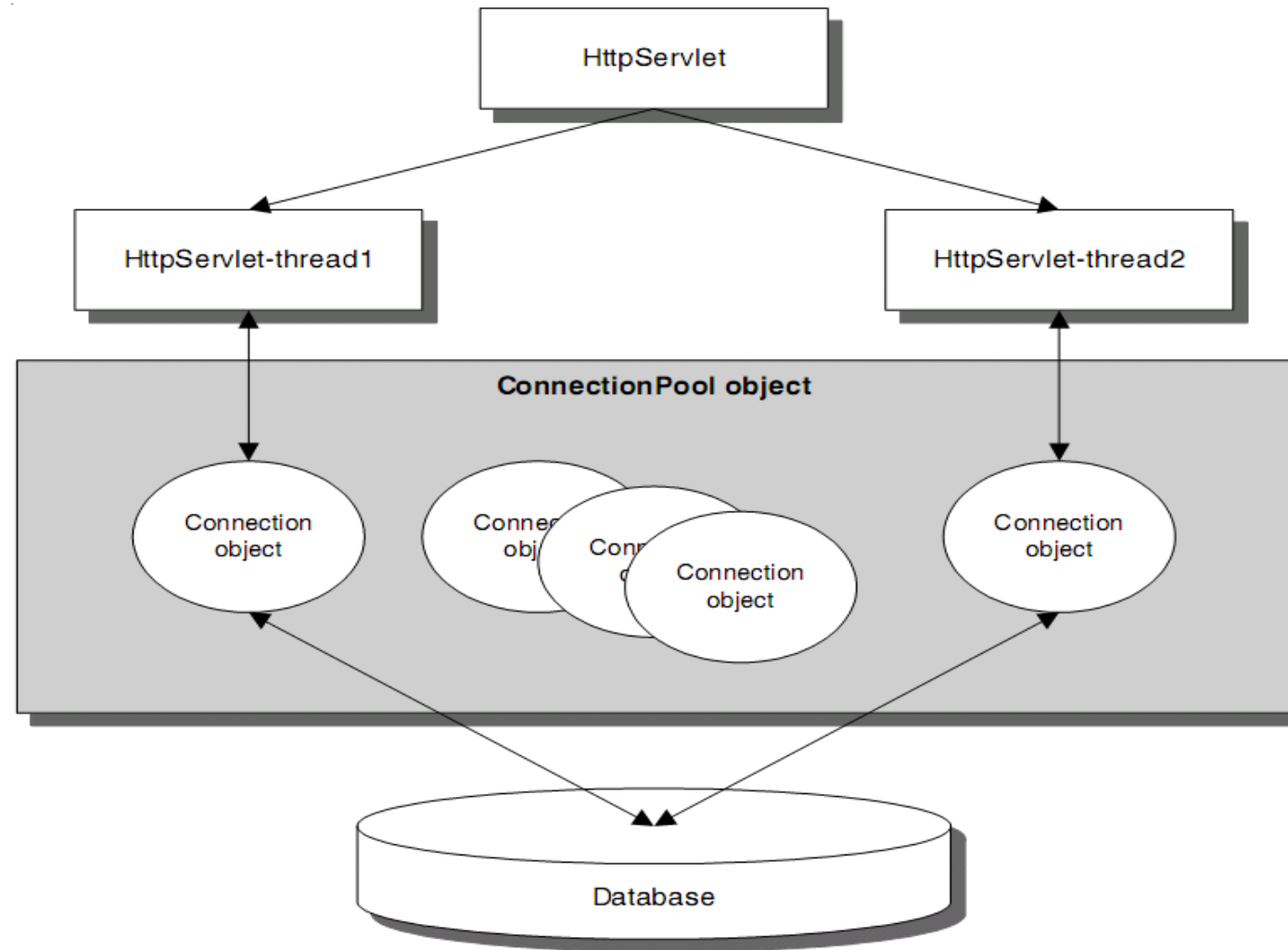
Introduction

- Opening a database connection is a costly and time-consuming process that can degrade an applications performance.
- Common practice to create a collection of Connection objects and store them in another object called a database connection pool (DBCP).
- The Connection objects in the pool are then shared by all users of a web application.
- This can limit the number of times that connections are opened as well as the total number of Connection objects.

Introduction

- Typically you will create a single connection pool for a web application.
- Then all of the Servlets in the application use the pool.
- When pooling is used a limited number of connections are opened for a database.
- When a Servlet needs a connection it gets it from the pool.
- When its finished with it, it returns it to the pool.

How Pooling Works



EclipseLink and Database Pooling

- [EclipseLink](#) uses database pooling by default.
- Default pool has a max of 32 connections and 1 starting (initial) connection.
- To configure pooling just edit the persistence.xml for the project:

```
<persistence version="2.1" xmlns="http://xmlns.jcp.org/xml/ns/persistence" xmlns:xsi="http://1
  <persistence-unit name="books_PU" transaction-type="RESOURCE_LOCAL">
    <provider>org.eclipse.persistence.jpa.PersistenceProvider</provider>
    <class>src.entities.Authors</class>
    <exclude-unlisted-classes>>false</exclude-unlisted-classes>
    <properties>
      <property name="javax.persistence.jdbc.url" value="jdbc:mysql://localhost:3306/books?ze:
      <property name="javax.persistence.jdbc.user" value="root"/>
      <property name="javax.persistence.jdbc.driver" value="com.mysql.jdbc.Driver"/>
      <property name="javax.persistence.jdbc.password" value=""/>
      <property name="javax.persistence.schema-generation.database.action" value="create"/>
      <property name="eclipselink.connection-pool.default.initial" value="1"/>
      <property name="eclipselink.connection-pool.default.min" value="2"/>
      <property name="eclipselink.connection-pool.default.max" value="8"/>
      <property name="eclipselink.connection-pool.default.wait" value="1000"/>
    </properties>
  </persistence-unit>
</persistence>
```

References

Murach, J., (2014) *Murachs Java Servlets JSP*, 3rd edn. Mike Murach and Associates, Inc.

<http://docs.oracle.com/javaee/6/tutorial/doc/>

<http://tomcat.apache.org/tomcat-8.0-doc/>

http://www.eclipse.org/eclipselink/documentation/2.4/jpa/extensions/p_connection_pool.htm