

Main1.java

```
import java.sql.*;

public class Main1 {

    public static void main(String[] args)
        throws ClassNotFoundException, SQLException
    {
        Class.forName("org.postgresql.Driver");

        Connection c = DriverManager.getConnection(
            "jdbc:postgresql://slon.felk.cvut.cz:5432/database",
            "user",
            "password"
        );

        Statement s1 = c.createStatement();
        s1.execute(
            "CREATE TABLE book (id INT PRIMARY KEY, title VARCHAR)"
        );

        Statement s2 = c.createStatement();
        s2.execute(
            "INSERT INTO book VALUES (1, 'Proces'), (2, 'Zámek')"
        );

        Statement s3 = c.createStatement();
        ResultSet rs = s3.executeQuery(
            "SELECT * FROM book"
        );
        while (rs.next()) {
            System.out.println(
                "Id: " + rs.getInt("id") + " | title: " + rs.getString(2)
            );
        }

        PreparedStatement ps = c.prepareStatement(
            "SELECT * FROM book WHERE (title = ?)"
        );
        ps.setString(1, "Zámek");
        ps.executeQuery();

        c.close();
    }
}
```

persistence.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<persistence
  version="2.1"
  xmlns="http://xmlns.jcp.org/xml/ns/persistence"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/persistence
    http://xmlns.jcp.org/xml/ns/persistence/persistence_2_1.xsd"
>
  <persistence-unit name="ApplicationPU" transaction-type="RESOURCE_LOCAL">
    <provider>org.eclipse.persistence.jpa.PersistenceProvider</provider>
    <class>Book</class>
    <properties>
      <property
        name="javax.persistence.jdbc.url"
        value="jdbc:postgresql://slon.felk.cvut.cz:5432/database"/>
      <property
        name="javax.persistence.jdbc.user"
        value="user"/>
      <property
        name="javax.persistence.jdbc.driver"
        value="org.postgresql.Driver"/>
      <property
        name="javax.persistence.jdbc.password"
        value="password"/>
      <property
        name="javax.persistence.schema-generation.database.action"
        value="create"/>
    </properties>
  </persistence-unit>
</persistence>
```

Main2.java

```
import java.util.List;
import javax.persistence.*;

public class Main2 {

    public static void main(String[] args) {

        EntityManagerFactory emf =
            Persistence.createEntityManagerFactory("ApplicationPU");
        EntityManager em = emf.createEntityManager();

        Book b1 = em.find(Book.class, 2);
        System.out.println(
            (b1 == null) ? "NULL" : "Id: " + b1.id + " | title: " + b1.title
        );

        TypedQuery<Book> q2 = em.createQuery(
            "SELECT b FROM Book AS b",
            Book.class
        );
        List<Book> l = q2.getResultList();
        for (Book b : l) {
            System.out.println("Id: " + b.id + " | title: " + b.title);
        }

        TypedQuery<Book> q3 = em.createQuery(
            "SELECT b FROM Book AS b WHERE (b.id = :BookId)",
            Book.class
        );
        q3.setParameter("BookId", 2);
        Book b3 = q3.getSingleResult();

        EntityTransaction et = em.getTransaction();

        et.begin();
        Book b4 = new Book();
        b4.title = "Amerika";
        em.persist(b4);
        et.commit();

        et.begin();
        b4.title = "Nezvěstný";
        et.commit();

        et.begin();
        em.remove(b4);
        et.commit();

        em.close();
        emf.close();
    }
}
```

Book.java

```
import javax.persistence.*;

@Entity
@Table(name="book2")
public class Book {

    @Id
    @GeneratedValue
    public Integer id;

    @Column(name="booktitle", nullable=false)
    public String title;

    @Transient
    public String comment;

    public Book() {
        this.id = null;
        this.title = null;
        this.comment = null;
    }
}
```