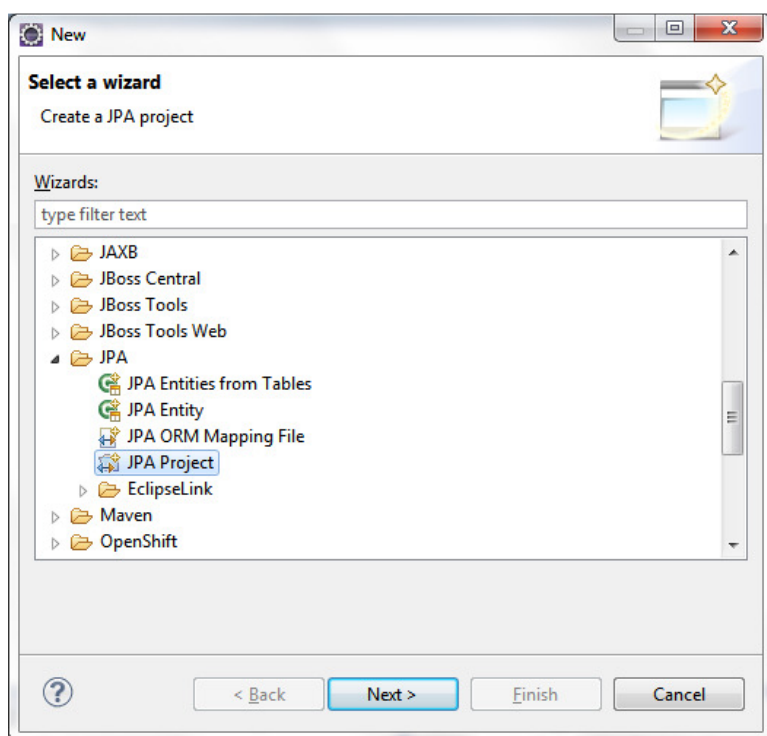


Roteiro para desenvolvimento da aula sobre JPA - Conceitos

Neste roteiro desenvolveremos uma aplicação baseada em anotações JPA. Os passos são apresentados a seguir:

1. Obter a API do **Hibernate**, no link:
<http://sourceforge.net/projects/hibernate/files/hibernate4/>
2. Descompacte o arquivo .zip em uma pasta da sua escolha.
3. Usaremos os jars das pastas **required** e **jpa** do diretório **lib**.
4. Criar um projeto JPA Project chamado **ExemploJPA**.



New JPA Project

JPA Project
 Configure JPA project settings.

Project name:

Project location
☒ Use default location
 Location:

Target runtime

JPA version

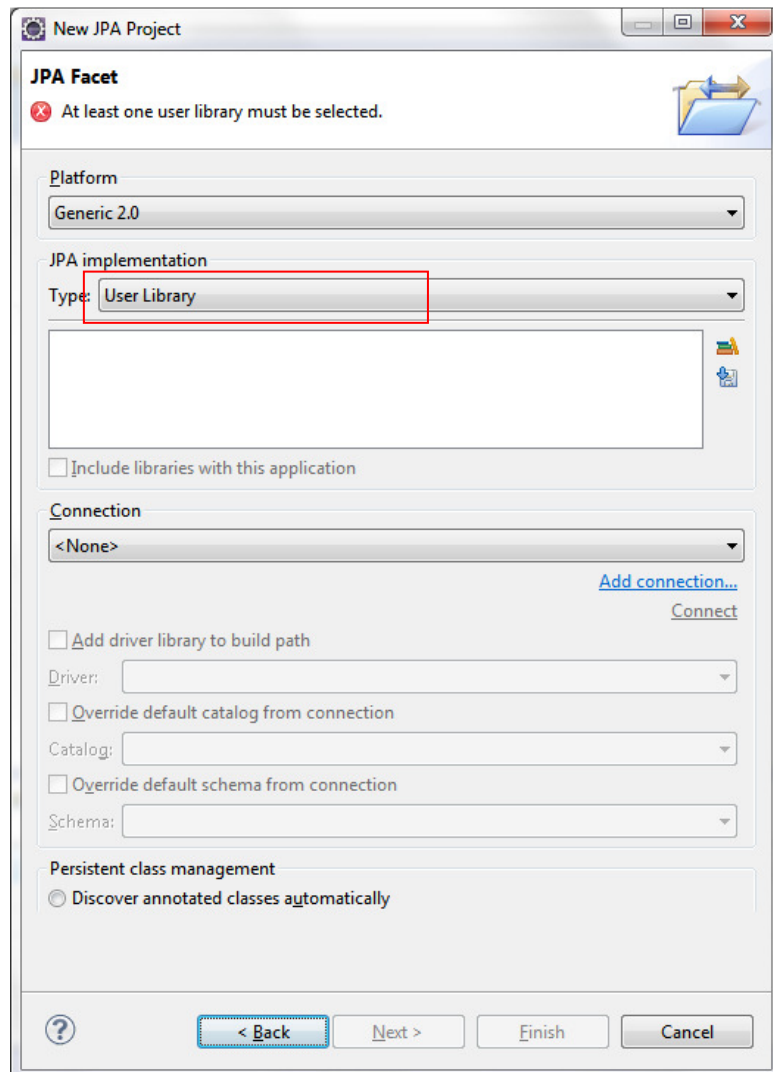
Configuration

 The default configuration provides a good starting point. Additional facets can later be installed to add new functionality to the project.

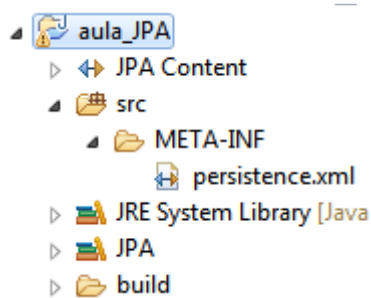
EAR membership
☐ Add project to an EAR
 EAR project name:

Working sets
☐ Add project to working sets
 Working sets:

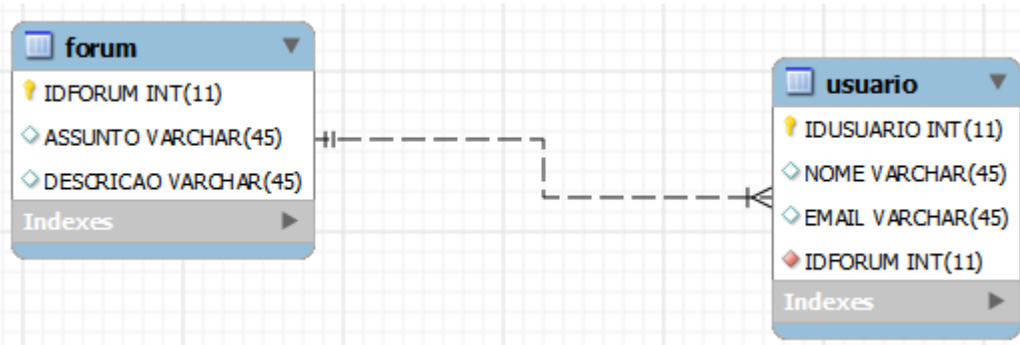
5. Avance até o último passo:



6. No menu, selecione a opção "User Library".
7. Definir uma nova library chamada JPA e incluir as libs que você obteve no item 3.
8. Finalizar o projeto. Observe que foi criado um arquivo chamado persistence.xml na pasta src/META-INF.



9. Importar o banco de dados **forum** disponível no portal:



10. Com base neste modelo, criar as entidades **Forum** e **Usuario**:

```

package br.com.fiap.entity;

import java.io.Serializable;
import java.util.HashSet;
import java.util.Set;
import javax.persistence.CascadeType;
import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.FetchType;
import javax.persistence.Id;
import javax.persistence.OneToMany;
import javax.persistence.Table;

@Entity
@Table(name="FORUM")
public class Forum implements Serializable {
    private static final long serialVersionUID = 1L;

    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    @Column(name = "IDFORUM")
    private int id;

    @Column(name = "ASSUNTO", length = 45)
    private String assunto;

    @Column(name = "DESCRICAO", length = 45)
    private String descricao;

    @OneToMany(cascade = CascadeType.ALL, fetch = FetchType.LAZY, mappedBy = "forum")
    private Set<Usuario> usuarios = new HashSet<Usuario>();

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getAssunto() {
        return assunto;
    }

    public void setAssunto(String assunto) {
        this.assunto = assunto;
    }

    public String getDescricao() {
        return descricao;
    }
}
    
```

```

    public void setDescricao(String descricao) {
        this.descricao = descricao;
    }
    public Set<Usuario> getUsuarios() {
        return usuarios;
    }
    public void setUsuarios(Set<Usuario> usuarios) {
        this.usuarios = usuarios;
    }
}

```

```

package br.com.fiap.entity;
import java.io.Serializable;
import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.FetchType;
import javax.persistence.Id;
import javax.persistence.JoinColumn;
import javax.persistence.ManyToOne;
import javax.persistence.Table;

@Entity
@Table(name = "USUARIO")
public class Usuario implements Serializable {
    private static final long serialVersionUID = 1L;
    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    @Column(name = "IDUSUARIO")
    private int id;
    @ManyToOne(fetch = FetchType.LAZY)
    @JoinColumn(name = "IDFORUM")
    private Forum forum;

    @Column(name = "NOME")
    private String nome;

    @Column(name = "EMAIL")
    private String email;

    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public Forum getForum() {
        return forum;
    }
    public void setForum(Forum forum) {
        this.forum = forum;
    }
    public String getNome() {
        return nome;
    }
    public void setNome(String nome) {
        this.nome = nome;
    }
    public String getEmail() {
        return email;
    }
}

```

```

    }
    public void setEmail(String email) {
        this.email = email;
    }
}
    
```

11. Manter o arquivo **persistence.xml** com o seguinte conteúdo:

```

<?xml version="1.0" encoding="UTF-8"?>
<persistence version="2.0" xmlns="http://java.sun.com/xml/ns/persistence"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/persistence
http://java.sun.com/xml/ns/persistence/persistence_2_0.xsd">
    <persistence-unit name="jpaPU" transaction-type="RESOURCE_LOCAL">
        <class>br.com.fiap.entity.Forum</class>
        <class>br.com.fiap.entity.Usuario</class>
        <properties>
            <property name="hibernate.hbm2ddl.auto" value="update" />
            <property name="hibernate.format_sql" value="true" />
            <property name="hibernate.dialect" value="org.hibernate.dialect.MySQLDialect" />
            <property name="javax.persistence.jdbc.url" value="jdbc:mysql://localhost:3306/forum"/>
            <property name="javax.persistence.jdbc.user" value="root"/>
            <property name="javax.persistence.jdbc.password" value="fiap"/>
            <property name="javax.persistence.jdbc.driver" value="com.mysql.jdbc.Driver"/>
        </properties>
    </persistence-unit>
</persistence>
    
```

12. Escrever a classe **ForumHelper**, contendo métodos auxiliares para realizar a persistência:

```

package br.com.fiap.helper;

import javax.persistence.EntityManager;
import br.com.fiap.entity.Forum;
import br.com.fiap.entity.Usuario;

public class ForumHelper {
    private EntityManager em;

    public ForumHelper(EntityManager em){
        this.em = em;
    }

    public String salvar(Forum forum){
        try{
            em.getTransaction().begin();
            em.persist(forum);
            em.getTransaction().commit();
            return "Forum salvo";
        }catch(Exception e){
            return e.getMessage();
        }
    }

    public String adicionarUsuario(int idForum, Usuario usuario){
        try {
    
```

```

        Forum f = em.find(Forum.class, idForum);
        usuario.setForum(f);
        f.getUsuarios().add(usuario);

        em.getTransaction().begin();
        em.persist(f);
        em.getTransaction().commit();
        return "Inclusao realizada";
    } catch (Exception e) {
        return e.getMessage();
    }
}

```

13. Para testar a aplicação, criar um forum e três usuários, associando cada usuário ao fórum criado:

```

package br.com.fiap.programa;

import javax.persistence.EntityManager;
import javax.persistence.EntityManagerFactory;
import javax.persistence.Persistence;

import br.com.fiap.entity.Forum;
import br.com.fiap.entity.Usuario;
import br.com.fiap.helper.ForumHelper;

public class TesteForum {
    public static void main(String[] args) {
        EntityManagerFactory emf =
Persistence.createEntityManagerFactory("jpaPU");
        EntityManager em = emf.createEntityManager();
        ForumHelper dao = new ForumHelper(em);

        Forum forum = new Forum();
        forum.setAssunto("JPA");
        forum.setDescricao("Java Persistence API");

        System.out.println(dao.salvar(forum));

        Usuario usuario = new Usuario();
        usuario.setNome("Joaquim");
        usuario.setEmail("joaquim@fiap.com.br");

        System.out.println(dao.adicionarUsuario(forum.getId(), usuario));
    }
}

```

Bom trabalho a todos!

Prof. Emilio