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import javax.persistence.AttributeConverter;
import javax.persistence.Converter;
import java.sql.Date;
import java.time.LocalDate;

@Converter(autoApply = true)
public class LocalDateConverter implements AttributeConverter<LocalDate, Date> {

    @Override
    public Date convertToDatabaseColumn(LocalDate entityDate) {
        return entityDate == null ? null : Date.valueOf(entityDate);
    }

    @Override
    public LocalDate convertToEntityAttribute(Date databaseDate) {
        return databaseDate == null ? null : databaseDate.toLocalDate();
    }
}

@Stateless
public class AlbumFacade {

    @PersistenceContext
    private EntityManager em;

    public void create(Album entity) {
        em.persist(entity);
    }

    public void deleteById(Long id) {
        Album entity = em.find(Album.class, id);
        if (entity != null) {
            em.remove(entity);
        }
    }

    public Album update(Album entity) {
        return em.merge(entity);
    }

    public List<Album> findAll() {
        TypedQuery<Album> query = em.createNamedQuery("Album.findAll", Album.class);
        return query.getResultList();
    }

    public Album findById(Long id) {
        return em.find(Album.class, id);
    }

    public List<Album> listAll(Integer startPosition, Integer maxResult) {
        TypedQuery<Album> findAllQuery = em.createQuery(
            "SELECT DISTINCT a FROM Album a ORDER BY a.id", Album.class);
        if (startPosition != null) {

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        findAllQuery.setFirstResult(startPosition);
    }
    if (maxResult != null) {
        findAllQuery.setMaxResults(maxResult);
    }
    return findAllQuery.getResultList();
}

public void readJsonContent(String json) {

    JsonStructure structure;

    try (StringReader stringReader = new StringReader(json)) {
        structure = Json.createReader(stringReader).read();
    } catch (Exception e) {
        System.err.println("Json FileFormat not correct: " + e.getMessage());
        throw new JSONException("Json FileFormat not correct");
        //return false;
    }

    switch (structure.getValueType()) {
        case ARRAY:
            JsonArray jsonArray = (JsonArray) structure;

            for (JsonValue jsonValue : jsonArray) {
                saveJsonObject((JsonObject) jsonValue);
            }
            break;
        case OBJECT:
            saveJsonObject((JsonObject) structure);
            break;
        default:
            throw new JSONException("Unexpected Error while parsing Json");
            //return false;
    }
    //return true;
}

private void saveJsonObject(JsonObject jsonAlbum) {
    Album album = new Album();

    LocalDate released;
    album.setTitle(jsonAlbum.getString("Title"));

    try {
        released = LocalDate.parse(jsonAlbum.getString("Released"),
            DateTimeFormatter.ofPattern("dd MMMM yyyy"));
    } catch (Exception e) {
        released = LocalDate.parse(jsonAlbum.getString("Released"),
            DateTimeFormatter.ofPattern("d MMMM yyyy"));
    }
    album.setReleased(released);
}

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album.setLabel(jsonAlbum.getString("Label"));

try {
    Integer ukChartPos = Integer.valueOf(jsonAlbum.getString("UK Chart Position"));
    System.out.println("uk " + ukChartPos);
    album.setUkChartPosition(ukChartPos);
} catch (Exception e) {
    System.err.println(""" + jsonAlbum.getString("UK Chart Position") + "" --> " + e.getMessage());
}

try {
    Integer usChartPos = Integer.valueOf(jsonAlbum.getString("US Chart Position"));
    System.out.println("us " + usChartPos);
    album.setUsChartPosition(usChartPos);
} catch (Exception e) {
    System.err.println(""" + jsonAlbum.getString("US Chart Position") + "" --> " + e.getMessage());
}

album.setBpiCertification(jsonAlbum.getString("BPI Certification"));
album.setRiaaCertification(jsonAlbum.getString("RIAA Certification"));

create(album);
System.out.println(album);
}

public int countRiaaCertifications(String certification) {

    int countCert = 0;

    List<String> certifications = em
        .createQuery("select a.riaaCertification from Album a where a.riaaCertification like
:CERT",String.class)
        .setParameter("CERT", "%" + certification)
        .getResultList();

    for (String cert : certifications) {
        String[] elements = cert.split("x");
        if (elements.length == 1) {
            countCert++;
        } else {
            countCert += Integer.parseInt(elements[0]);
        }
    }

    return countCert;
}
}

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@Named
@SessionScoped
public class IndexController implements Serializable {

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@Inject
private AlbumFacade albumFacade;

private String uploadedText;

List<Album> albums;

public IndexController() {
}

@PostConstruct
private void init() {
    loadAlbums();
}

public void fileUploadHandler(FileUploadEvent event) {
    uploadedText = new String(event.getFile().getContents());
    try {
        albumFacade.readJsonContent(uploadedText);
        FacesMessage message = new FacesMessage(FacesMessage.SEVERITY_INFO, "Successful",
event.getFile().getFileName() + " is uploaded.");
        FacesContext.getCurrentInstance().addMessage(null, message);
    } catch (Exception e) {
        System.err.println("*** parsing to json fail");
        FacesMessage message = new FacesMessage(FacesMessage.SEVERITY_ERROR, "Import
failed", event.getFile().getFileName() + " is not uploaded.");
        FacesContext.getCurrentInstance().addMessage(null, message);
    }
    loadAlbums();

    // Update der dataTable
    RequestContext.getCurrentInstance().update("albumTable");
    RequestContext.getCurrentInstance().update("certificationPanel");
}

public int getSilverCertifications() {
    return albumFacade.countRiaaCertifications("Silver");
}

public int getGoldCertifications() {
    return albumFacade.countRiaaCertifications("Gold");
}

public int getPlatinumCertifications() {
    return albumFacade.countRiaaCertifications("Platinum");
}

public List<Album> getAlbums() {
    return albums;
}

public void setAlbums(List<Album> albums) {
    this.albums = albums;
}

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}

public String getUploadedText() {
    return uploadedText;
}

public void setUploadedText(String uploadedText) {
    this.uploadedText = uploadedText;
}

private void loadAlbums() {
    albums = albumFacade.findAll();
}
}
```