Test task "K-PAC in K-PAC sets"

Subject description:

In the process of developing a control system you've received a task to display the main entities of the system and their relationship.

Entities description:

K-PAC (Knowledge Package) - an entity that stores the contents of any knowledge. It contains the next fields:

- ● ID - unique numeric field, the occurrence of K-PAC.
- ● Title - character string (up to 250 characters)
- ● Description - character string (up to 2000 characters), information about the contents of K-PAC.
- ● Creation date - a string in the format DD-MM-YYYY, the date when K-PAC was created.

K-PAC Set is an entity that can contain multiple K-PAC entities. It contains the next fields:

- ● ID - unique numeric field, the occurrence of the K-PAC Set.
- ● Title - a character string (up to 250 characters).

Entities relations: Every K-PAC set can contain multiple K-PACs, every K-PAC can be included in several K-PAC sets.

Task:

Create a WEB application that allows you to perform operations (Create), read (Read) and retrieve (Delete) with these entities.

Functional requirements:

Need to develop 3 pages to work with K-PAC and K-PAC Set entities:

1) URL */kpacs* - page where list of all K-PACs is displayed using DHTMLX7 grid structure. Grid columns:

- ○ *ID*
- ○ *Title*
- ○ *Description*
- ○ *Creation Date*
- ○ *Delete*

Need to provide abilities:

- ● to add K-PAC using html form.
- ● to delete K-PAC using Delete icon in the grid
- ● to do filtering and sorting depending on the data types in the grid *Note:* all grid fields should be non-editable.

2. **2)** URL */sets* - page where list of all K-PAC Sets is displayed using DHTMLX7 grid structure.

   Grid columns: ○ *ID*

   ○ *Title*
   ○ *Delete*

   Need to provide abilities:

   - ○ ● to add K-PAC Set and provide an ability to select K-PACs using html form.
   - ○ ● to delete K-PAC Set using Delete icon in the grid
   - ○ ● to do filtering and sorting depending on the data types in the grid
   - ○ ● on row double click open a new window with attached K-PACs to the

     selected K-PAC set (URL */set/{id}*) *Note:* all grid fields should be non-editable.

3. **3)** URL */set/{id}* - page where list of K-PACs attached to Set is displayed using DHTMLX7 grid structure. K-PAC Set Id should be provided through path variable. Grid columns: K-PAC Id, title, description.

Non functional requirements:

Using Java Code Conventions (https://www.oracle.com/technetwork/java/codeconventions-150003.pdf) is required.

Technologies:

- ● Java 17+
- ● Spring (JDBC, MVC). Don't use Spring Boot, Spring JPA
- ● Maven (https://maven.apache.org/)
- ● Database - MySQL 8+ (https://www.mysql.com/)
- ● Server - Apache Tomcat (http://tomcat.apache.org/)
- ● IDE - Eclipse / IntelliJ IDEA
- ● JSP
- ● DHTMLX 8, component - DHTMLX grid

  (https://dhtmlx.com/docs/products/dhtmlxGrid/download.shtml)

  As a result you should get the next files:

- ● schema.sql - SQL script to create DB schema.
- ● data.sql - SQL script to fill DB with test data.
- ● app.zip - application source code or link to GitHub.
- ● app.war - WAR-file to start application on the server.

Files need to be uploaded on Google Drive. Link to Google Drive should be sent to: vitaliy.gonchar@aurosks.com.