March 13th, 2024

SEDS 519 – SOFTWARE DESIGN PATTERNS

Homework 1

due March 27th, 2024

Write a Java program that simulates a nutrition fact detector. The Nutrition Fact System contains Nutrition and has the following features:

- Nutrition Id
- Title
- Description

Create a singleton connection class DbConnection, using a proper design pattern. Use your MySQL userName and password for the usr and pwd variables. Set your own variable for the database name (localhost).

Nutrition can be generated from a Video, BlogArticle or MedicalInfo type. Video includes transcript, topic and source properties. BlogArticle contains title and comments. MedicalInfo consists of title, text and type (either PubMed or PMC).

Your Java application should do following tasks:

1. **(10 pts) Create the NutritionModel class:** It should contain all the attributes defined above as variables.
2. **(10 pts) Generate a Database Access Object (DAO) interface: as INutritionDao the UML class diagram:** generate INutritionDao interface and then another class NutritionDaoImp that implements the given interface.
3. **(10 pts) Add a new nutrition fact:** for this option, you should generate a nutrition object and a NutritionDaoImp object.
4. **(10 pts) Read a nutritional fact:** this option requires you to use the Dao object to access a specific nutritional fact.
5. **(10 pts) List all nutrition facts:** for this option, you should also use the Dao object to get the entire nutrition facts.
6. **(10 pts) Update a given nutrition facts:** with this option, your program updates the given nutrition fact by leveraging its id.
7. **(10 pts) Delete a specific nutrition fact:** for this option, your program will delete a specific nutrition fact by its id.

NOTES:

- **(10 pts)** You should check the validity of user input.
- **(10 pts)** You should create a menu on the console so that it should have a choice per task explained above and you should use file input-output operations.
- **(10 pts)** You should draw **Unified Modeling Language** (**UML**) class diagrams for each class, taking into account class interactions.
- You should create your Java project in Eclipse as SEDS519_Gx_HW1 and export as SEDS519_Gx_HW1.zip.
- x is your group ID.
- Please mail your zip file to emrahinan@iyte.edu.tr
- The deadline for submission is 27.03.2024 at 16:30