Space Exploration Management System (Xero)

Overview:

The Space Exploration Management System (Xero) is a comprehensive Java Swing application designed to manage various aspects of space exploration. It provides an intuitive interface for managing data related to space stations, astronauts, missions, experiments, discoveries, resource sets, and locations.

Features Database Management:

Seamlessly manage and interact with data from a MySQL database.

Tabbed Interface:

Organized data management with multiple tabs for different entities. CRUD Operations: Perform Create, Read, Update, and Delete operations on all entities.

Dynamic Button Panel: Context-sensitive buttons that update based on the selected tab.

Query Menu:

Predefined queries to fetch and display specific subsets of data. Resource Histogram: Visualize resource quantities with a histogram graph generated using JFreeChart.

Technologies Used Java:

Core programming language. Swing: GUI toolkit for creating the user interface. JFreeChart: Library used for generating histogram charts.

JDBC:

Java Database Connectivity for interacting with the MySQL database.

MySQL:

Relational database management system.

Installation and Setup

1. Clone the Repository:

git clone https://github.com/S-M-Rehan/Database-Project.git

cd space-exploration-management

2. Setup Database:

- Ensure you have MySQL installed.

- Import the provided database schema and data into your MySQL server.

3. Configure Database Connection:

- Update the `initializeConnection` method in `MainInterface.java` with your MySQL connection details.

4. Add Dependencies:

- If using Maven, ensure your `pom.xml` includes the dependency for **JFreeChart.**

```
<dependency>
    <groupId>org.jfree</groupId>
    <artifactId>jfreechart</artifactId>
    <version>1.5.3</version>
</dependency>
```

5. Run the Application:

- Compile and run the `MainInterface` class.

Usage

- Navigate through different tabs to manage data related to space exploration.

- Use the button panel at the bottom to perform CRUD operations.

- Access the "Queries" menu to run predefined queries and view results.

- Select "Show Resource Histogram" from the "Queries" menu to visualize resource quantities.

Contributing

Contributions are welcome! Please fork the repository and create a pull request with your changes.

License

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Contact

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