

BIM492 Design Patterns

Term Project

Project Overview:

The goal of this project is to develop an event management system using Java. The system will be a console-based application enabling users to create, modify, search, and register to various events. The system will implement at least three different design patterns to achieve flexible and maintainable architecture.

When the program is executed, the main menu presents 4 options to the user as: create event, search event, register to event, and modify event.

A. Event Creation Module:

- Accept event details including event name, location, date, time, and organizer information.
- Allow users to assign up to three categories to each event (e.g., Concert, Seminar, Workshop).
- Allow users to assign up to three descriptive tags to each event (e.g., Free Entry, Online, Family-Friendly).
- Users can save the entered event details by selecting "Save Event."

B. Event Modification Module:

- A user can modify any event.
- A user can update event details such as location, date, time, and description.
- A user can modify categories and tags associated with an event.
- The system supports undo functionality to revert the most recent modification.

C. Event Search Module:

- Users can search for events by name, tags, categories, or date.
- Users can sort the search results in either ascending or descending order by event name.

D. Event Registration Module:

- Members can register to attend events.
- The system maintains a registration count for each event.
- Members can cancel their registration.

Example usage of the program:

- User selects "Create Event" from the main menu.
- User enters details, selects up to three categories and tags.
- User selects "Save Event" to save the event to the system.
- User selects "Search Event" option from the main menu and enters keyword.
- User selects an event from the search results to view details.
- User selects "Register to Event" to attend.

To-Submit: Construct a zip file including the followings and submit it until **13 May 2025, 23:59**.

- A pdf file including UML class diagram for your design must be created. (25 points)
- A pdf file containing which patterns are used must be created. Additionally, you should explain how you applied those patterns in detail. (45 points)
- Implementation codes (without target folder and IDE-specific files) must be submitted. Implement your proposed solution based on the UML Class Diagram using the base Maven Project that you are supplied. The Maven Project produces an executable .jar file typing following command: `mvn clean package`. To learn more about Maven Project, you can read maven in 5 minutes. (<https://maven.apache.org/guides/getting-started/maven-in-five-minutes.html>) You are allowed to change pom.xml to add or remove any dependency or plugin. Your code should be compiled by the following command: `java -jar target\project.jar` (30 points)

Please Note: If it is proven that a group member does not provide any contribution to the project, that member will receive 0 points from the project.