

# Scenario:

Consider the following problem statement:

The Louvre Museum requires a software application to enhance the visitor experience and internal operations. The key requirements for the software application are, but not limited to, the following:

1. **Artwork Management:** The system should maintain a comprehensive catalog of the museum's artworks, artifacts, and exhibitions. Each item in the collection should have detailed information such as title, artist, date of creation, historical significance, and exhibition location. The locations are of the following: permanent galleries, exhibition halls, and outdoor spaces.
2. **Visitor Management:** The system should facilitate the management of visitor information: ticket purchases and visitor demographics. Visitors can purchase tickets online or in-person for various exhibitions, tours, and special events that the museum offers. Exhibitions are held for a duration of time and in a particular location in the museum, which is mentioned on the purchased tickets. Tours are facilitated on a selected date for a group of 15 to 40 visitors with a guide, and the details are mentioned on the ticket. Special events are organized for purposes such as fundraising, musical concerts, or light shows, and the location and duration are mentioned on the tickets.
3. **Ticketing and Pricing:** The system should support flexible pricing options for different visitor categories. Adults between the ages of 18 to 60 pay 63 AED. Additionally, the system applies a 5% value-added tax (VAT) on the final ticket price. However, children below 18, teachers and students of an institute, and seniors (above 60) are given a free ticket upon presenting their national ID cards. Groups receive a 50% discount on the ticket's original price. Special Events have individual ticket prices

The Louvre Museum website Abu Dhabi: <https://www.louvreabudhabi.ae/en/uae>

## Requirements

1. Design a UML class diagram representing the concepts and relationships in the scenario. Ensure using the inheritance or different types of association relationships where necessary. You may make assumptions about attributes (with proper access specified) and concepts not explicitly mentioned in the problem statement. A clear description of the relationships and assumptions

must be included. The minimum number of required classes is six (7), and students are expected to display knowledge of different types of relationships.