CRC and Class Diagrams for Domain Modelling and Analysis

Background

This tutorial provides practice in extracting class information from a set of use cases, as well as practice in drawing CRC and class diagrams to capture this information.

Exercise

Based on the problem description, use case diagram and use case descriptions that follow, you should
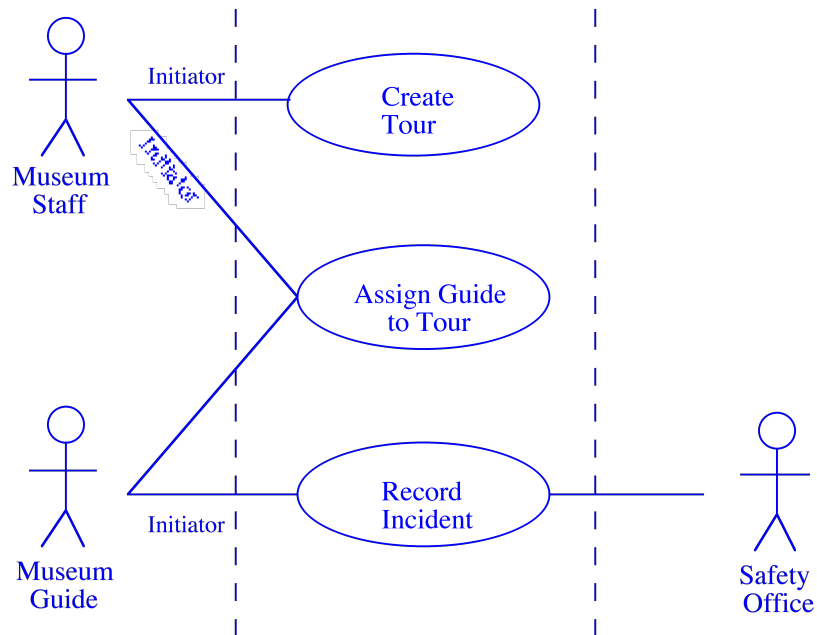
- create a set of **CRC cards** for the key candidate classes needed to realise the use cases.
- produce a **class diagram** showing the class names, attributes, operations and associations. Try creating two versions of the class diagram. The first version should just show the class names and associations between the classes. The second version should add attributes and operations.
- identify the **three most important analysis questions** you would want to answer to improve or validate your domain model.

Disclaimer!

There is no one correct answer to this type of exercise! There are a variety of reasonable answers based on how you interpret the scenario given. The important thing is to give a plausible argument for your solution.

Problem Description

A museum requires a system that will enable museum staff to keep track of guided tours of the museum. When a party of visitors arrives, a staff member must be able to record the date, start time and number of visitors undertaking the tour. Also, a staff member must be able to assign a guide to the tour, from available museum tour guides (i.e., those not currently conducting a tour or performing some other duty); the assigned guide will be notified of the assignment. During a tour, its guide must be able to record special incidents that might occur, such as a visitor becoming ill. Each such incident will be related to the tour on which it occurred and will include a description and a time. Incident reports must be communicated to the Museum's Safety Office.

Use Case Descriptions

Create Tour
Staff member creates a tour record and enters the date, start time and number of visitors.

Assign Guide to Tour
Staff member associates an existing tour with an available tour guide. Selected guide is notified of assignment.

Record Incident
Museum guide conducting a tour creates an incident record with incident time and description and associates this record with the current tour. The incident record is sent to the Safety Office.