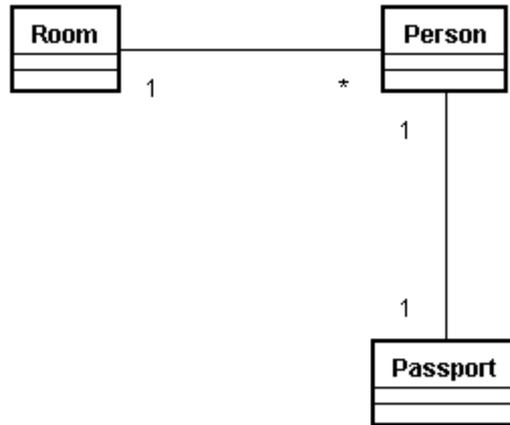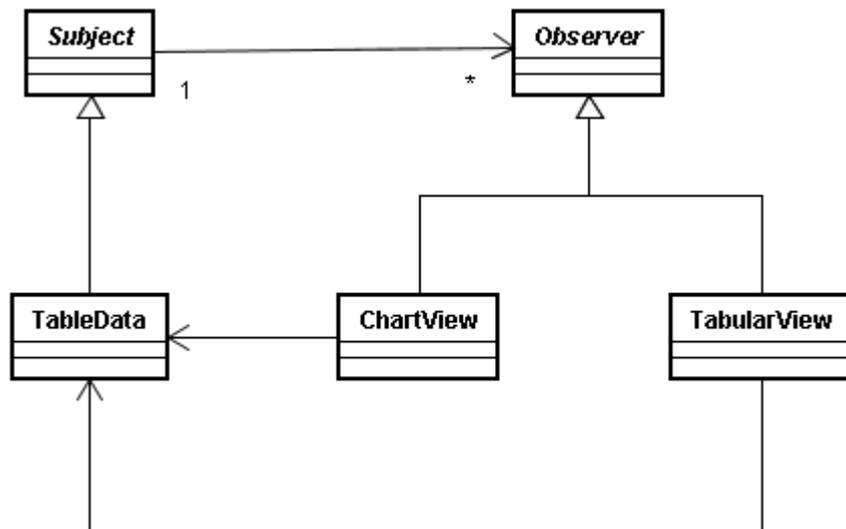## 1. Class to Object Diagrams

a. Draw an Object Diagram for this Class Diagram that instantiates every Class exactly twice:

b. Draw an Object Diagram for this Class Diagram that instantiates every concrete Class exactly once:

2. Scenario to Class Diagram (Abbott)

Consider you have to build a video management software which shows thumbnails and detailed information about each video file in a list.

USE CASE: Directory Import
FLOW OF EVENTS:
1. The user clicks the import button.
2. The system shows a file dialog.
3. The user selects a directory to import.
4. The system adds a new thumbnail for each imported file to the thumbnail panel.

Apply Abbott's textual analysis to extract a class diagram from the use case.

Explain the steps you have applied.

3. Scenarios to Use Cases

You are in the middle of transforming a set of scenarios for an Automatic Telling Machine into a Use Case Model.

Integrate the following scenario into the Use Case Diagram below.

FLOW OF EVENTS:
  1) USER inserts card
  2) SYSTEM asks for PIN
  3) USER enters his PIN via keypad
  6) SYSTEM displays available actions
  7) USER selects to charge his card with e-money
  8) SYSTEM asks for the desired amount
  9) USER enters the amount via keypad
 10) SYSTEM ejects card
 11) USER walks away without taking his card back
 12) SYSTEM beeps after 5 seconds
 13) USER comes back
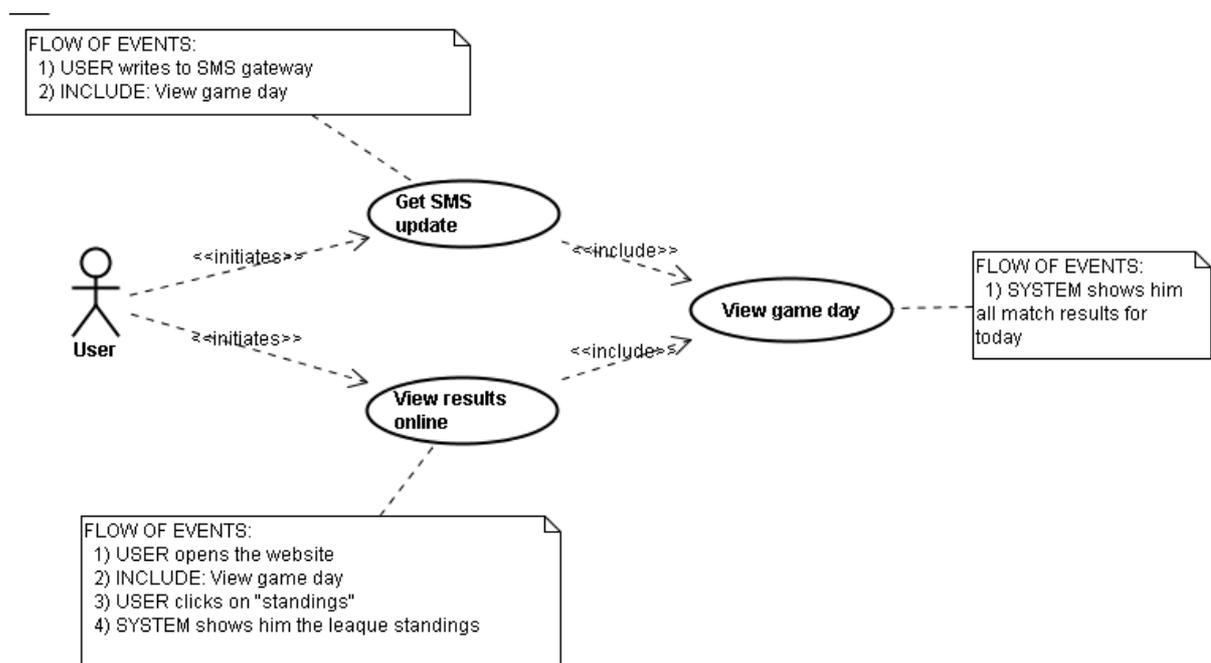 14) USER takes card from the slot
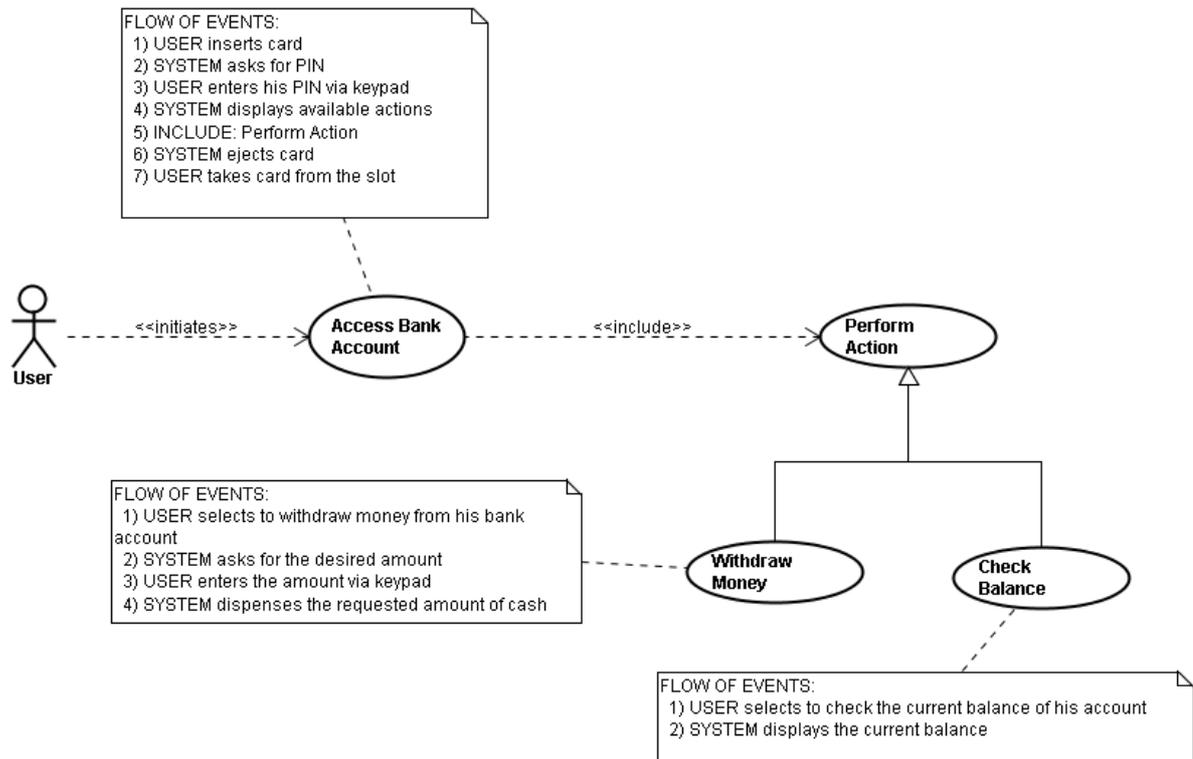
You have to draw a new diagram incorporating the changes, including all the flows of events that changed. (You can leave out comment boxes that are still exactly the same).
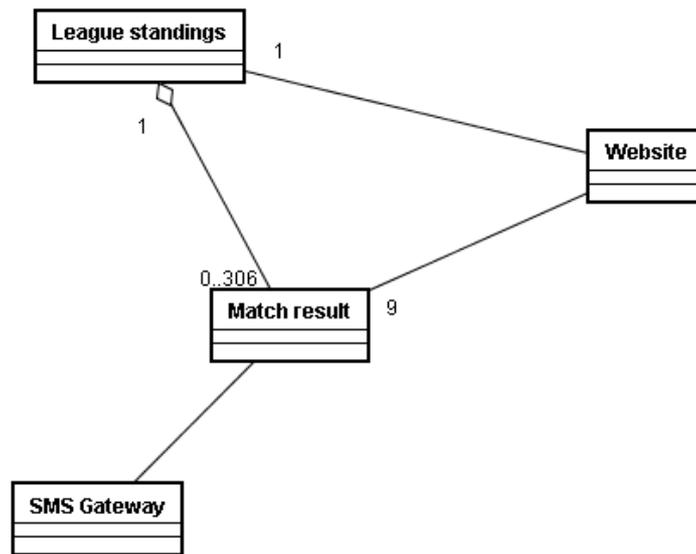
4. Combine Domain Object Model and Use Cases to Analysis Object Model

The Bundesliga Live service offers up to date match results both through Website and SMS Gateway.

A use case model was created:

FLOW OF EVENTS:
1) USER writes to SMS gateway
2) INCLUDE: View game day

FLOW OF EVENTS:
1) SYSTEM shows him all match results for today

FLOW OF EVENTS:
1) USER opens the website
2) INCLUDE: View game day
3) USER clicks on "standings"
4) SYSTEM shows him the league standings

Get SMS update

View game day

View results online

User

<<initiates>>

<<initiates>>

<<include>>

<<include>>

Also, domain objects are already identified:

League standings

Website

Match result

SMS Gateway

1

1

0..306

9

Identify Boundaries, Controls and Entities in the Domain Object and Use Case Model and draw an Analysis Object Diagram with them.

5. Sequence diagram for a scenario

The following Analysis Object Diagram models a part of a simple forum software:
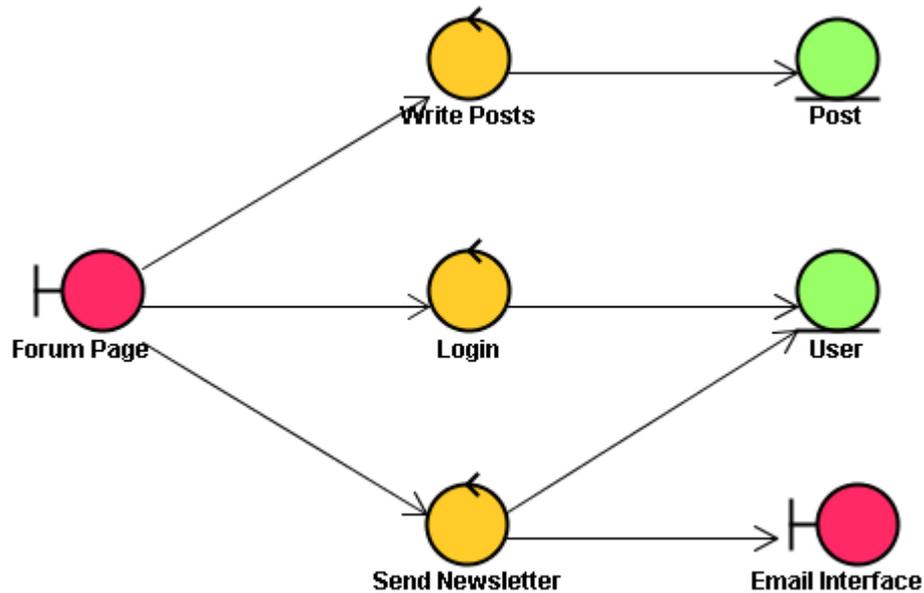
Consider the following scenario:

The admin of the forum wants to organize a user meeting. For this, he wants to write an invitation to every user and create a new post for the details.

FLOW OF EVENTS:
1) ADMIN opens the forum page.
2) ADMIN enters his username and password.
3) SYSTEM validates the password.
4) SYSTEM shows he is now logged in.
5) ADMIN writes a newsletter.
6) SYSTEM gets all users' email addresses.
7) SYSTEM sends the newsletter to all users via the email interface.
8) ADMIN writes a new post.
9) SYSTEM saves the post.
10) SYSTEM confirms the successful save.

Complete the following Sequence Diagram to show the interactions involved in this flow of events. Remember to think about synchronous vs. asynchronous calls.

: Admin

: Forum Page

: Login

: Send Newsletter

: User

: Email Interface

: Write Posts

: Post