Class Diagram for the Meeting Scheduler

Learn to create a class diagram for a meeting scheduler using the bottom-up approach.

We'll cover the following

In this lesson, we'll identify and design the classes, abstract classes, and interfaces based on the requirements that we have previously gathered from the interviewer in a meeting scheduler.

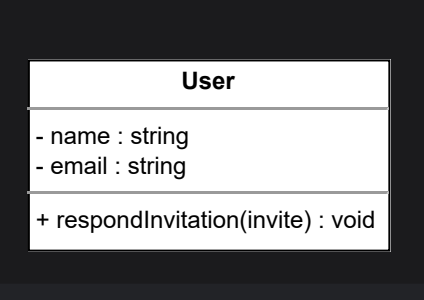
Components of a meeting scheduler

As mentioned earlier, we'll design the meeting scheduler using a bottom-up approach.

User

The `User` class is responsible for representing the personal information of a user such as their name, email, and can also accept or reject an invitation to a meeting.

The class definition is shown below:



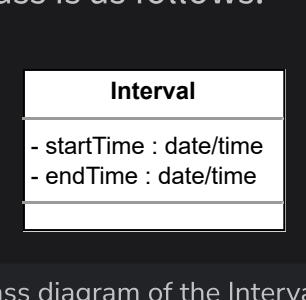
The class diagram of the User class

R5: Meeting scheduler

R5: Users will receive an invite regardless of whether or not they are available at the interval. Users can respond to the invitation by either accepting or rejecting the invite.

Interval

The `Interval` class contains the start time and end time of a meeting. The visual representation of the `Interval` class is as follows:



The class diagram of the Interval class

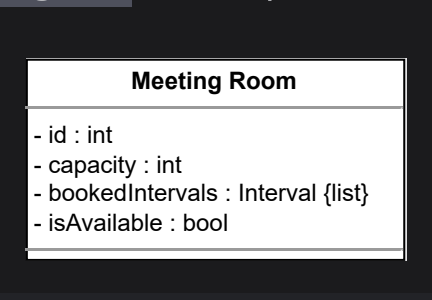
R3: Meeting scheduler

R3: If not reserved already, each meeting room should have the ability to be booked, along with setting an interval, a start time, and an end time for the meeting.

Meeting room

The `MeetingRoom` class contains the details of any particular room, such as its capacity and a status, to identify whether it is currently available. It also contains a list of intervals to keep track of when the room is booked for a meeting.

The class diagram of the `MeetingRoom` class is provided below:



The class diagram of the MeetingRoom class

R2 and R3: Meeting scheduler

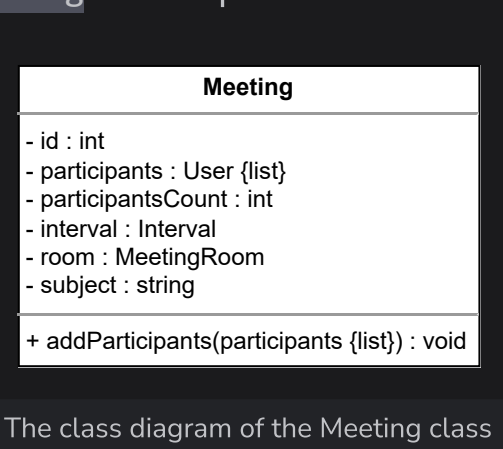
R2: Each meeting room should have a specific capacity to accommodate the desired number of people.

R3: If not reserved already, each meeting room should have the ability to be booked, along with setting an interval, a start time, and an end time for the meeting.

Meeting

The `Meeting` class displays the meeting details, such as the participants, the meeting time, and the meeting room.

The class diagram of the `Meeting` class is provided below:



The class diagram of the Meeting class

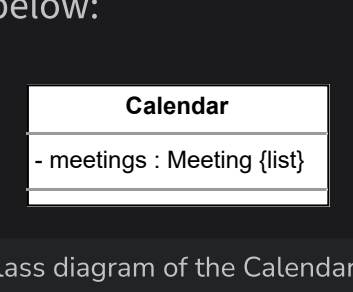
R3: Meeting scheduler

R3: If not reserved already, each meeting room should have the ability to be booked, along with setting an interval, a start time, and an end time for the meeting.

Calendar

The `Calendar` class keeps track of all the meetings that are scheduled or being held.

The class definition is provided below:



The class diagram of the Calendar class

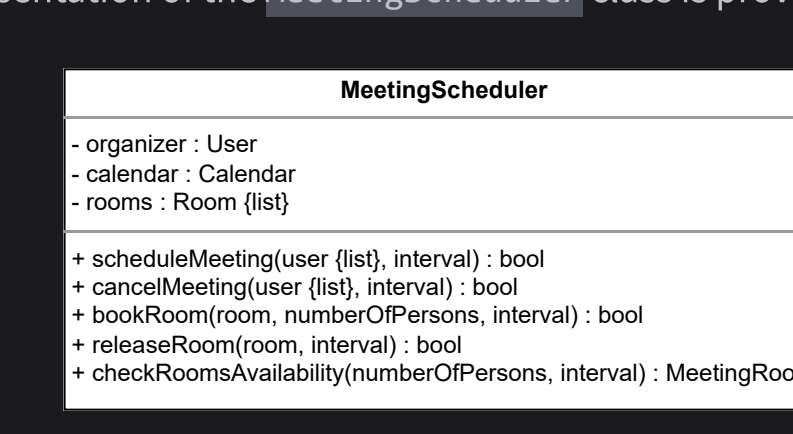
R6: Meeting scheduler

R6: Each user should have access to a calendar that can be used to track the date and time, as well as to schedule or cancel meetings.

Meeting scheduler

The `MeetingScheduler` class contains an organizer that is responsible for scheduling a meeting using the calendar. It can also cancel a meeting, check the availability of meeting rooms, and book or release a meeting room.

The visual representation of the `MeetingScheduler` class is provided below:



Class diagram of the MeetingScheduler class

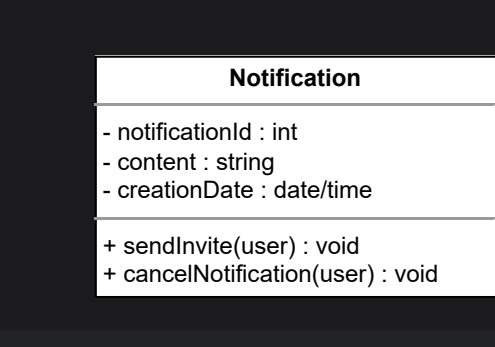
R6: Meeting scheduler

R6: Each user should have access to a calendar that can be used to track the date and time, as well as to schedule or cancel meetings.

Notification

The `Notification` class will send a notification for an invitation to a user regarding any new meeting. It will also send a cancelation notification to a user as well, in case any meeting gets canceled or is postponed.

The UML representation of the class is shown below:



The class diagram of the Notification class

R4: Meeting scheduler

R4: A notification should be sent to all the people invited to the meeting.

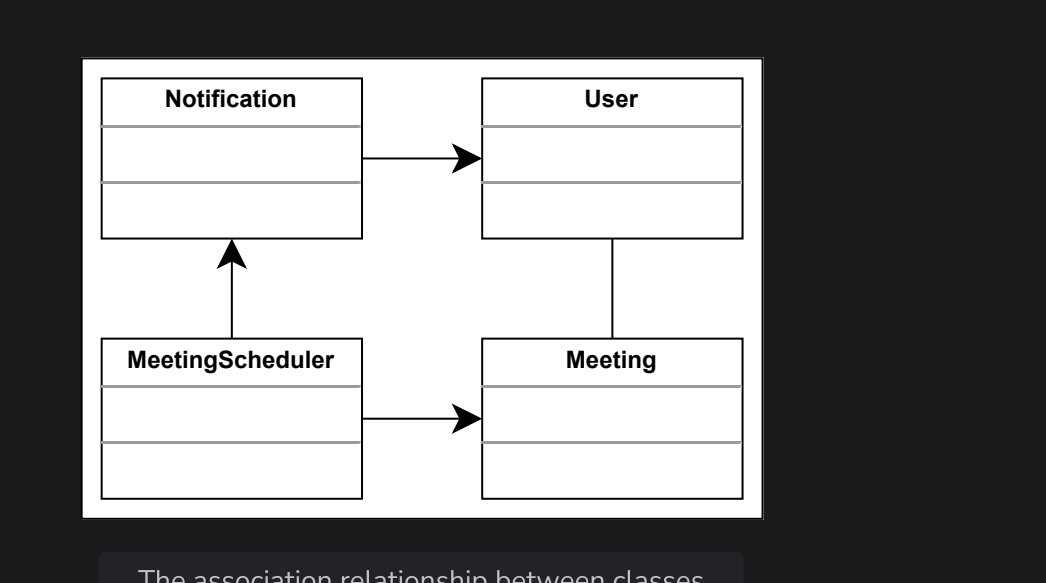
Relationship between the classes

Now, we'll discuss the relationships between the classes we have defined above in the meeting scheduler.

Association

The class diagram has the following association relationships:

- The `User` class has a one-way association with the `Notification` class and a two-way association with the `Meeting` class.
- The `MeetingScheduler` class has a one-way association with the `Notification` and `Meeting` classes.

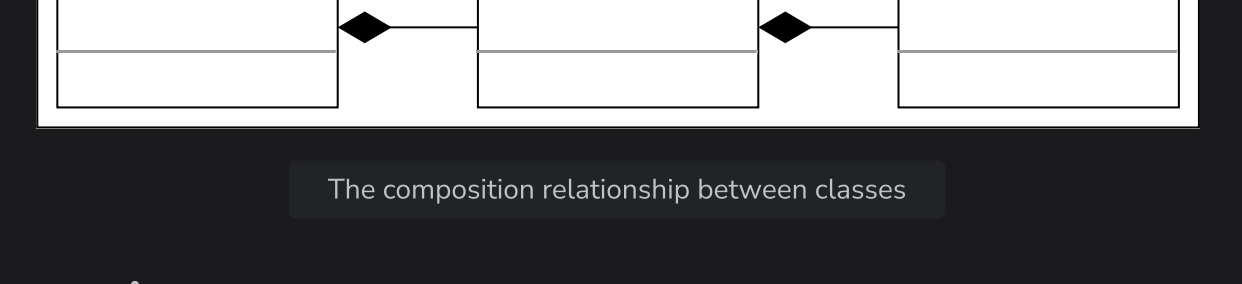


The association relationship between classes

Composition

The class diagram has the following composition relationships:

- The `MeetingScheduler` class is composed of the `Calendar` class.
- The `Calendar` class is composed of the `Meeting` class.

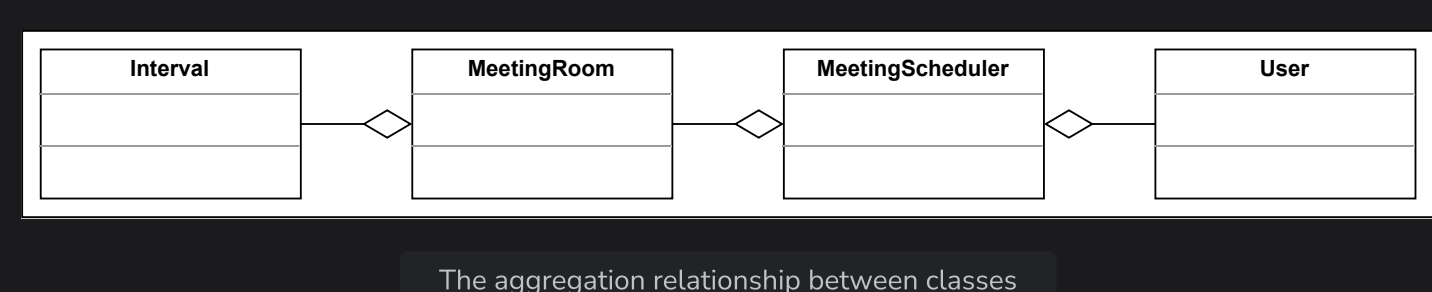


The composition relationship between classes

Aggregation

The class diagram has the following aggregation relationships:

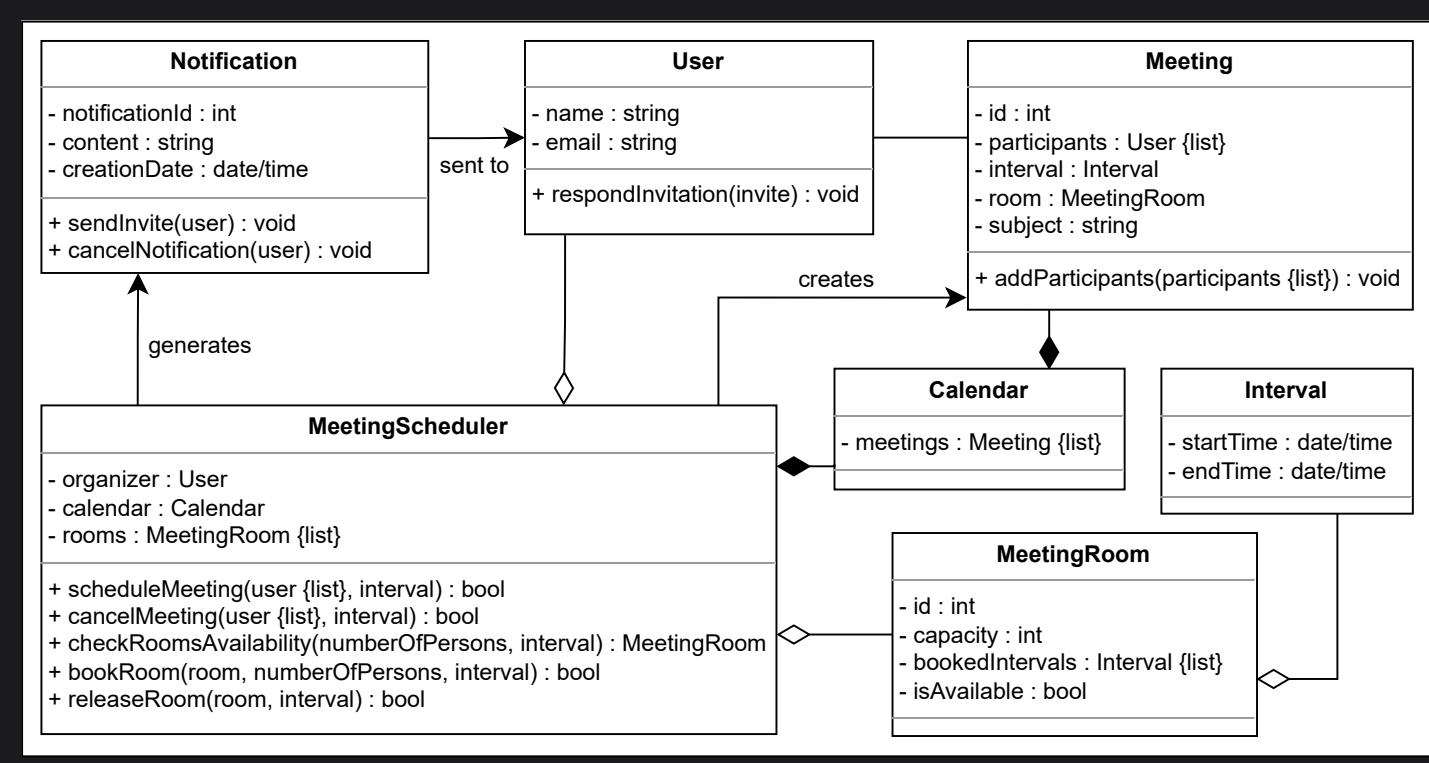
- The `MeetingScheduler` class is aggregated from the `User` and `MeetingRoom` class.
- The `MeetingRoom` class is aggregated from the `Interval` class.



The aggregation relationship between classes

Class diagram of the meeting scheduler

Here's the complete class diagram for the meeting scheduler:



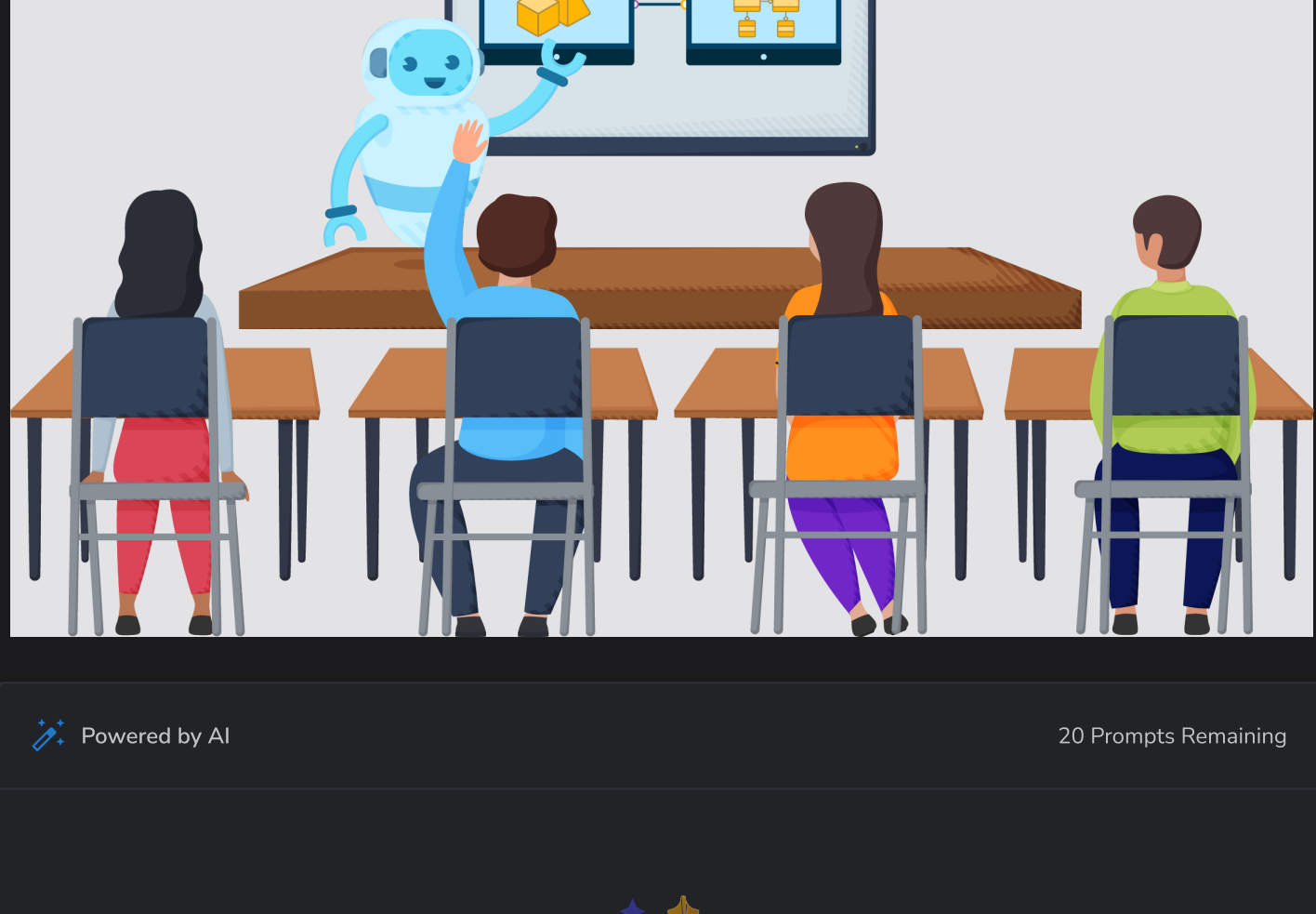
The class diagram of the meeting scheduler

Design pattern

In the meeting scheduler design, the entire system revolves around the scheduler which is responsible for scheduling meetings. To create a robust design, it is not possible that there can be more than one instance for the scheduler. Therefore, we use the Singleton design pattern to ensure that only one instance of the scheduler is created and that this instance has a global point of access.

AI-powered trainer

At this stage, everything should be clear. If you encounter any confusion or ambiguity, feel free to utilize the interactive AI-enabled widget below to seek clarification. This tool is designed to assist you in strengthening your understanding of the concepts.



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20 Prompts Remaining

Prompt AI Widget

Our tool is designed to help you to understand concepts and ask any follow up questions. Ask a question to get started.

Enter Prompt Here...

We have completed the class diagram of the meeting scheduler according to the requirements. Now let's design the sequence diagram of the meeting scheduler in the next lesson.

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