Software Prototype Evaluation

CS 345-346

Calendar Application

Group 13

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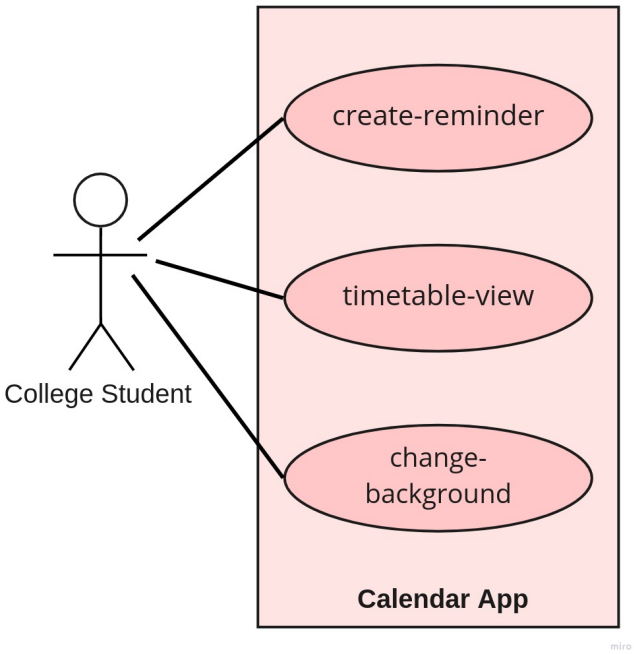
1 Use Case Diagram



1.1 Use Case 1

U1: create-reminder: Using this use case a student can create a reminder of a event by entering relevant details.
Scenario 1: Mainline Sequence

1. User : select a month
2. System : displays calendar of selected month and option to create reminder
3. User : selects "Set Reminder" option
4. System : display form to create reminder with fields for event name, reminder type, event date and time
5. User : enter details of reminder and click button for "Create Reminder"
6. System : displays reminder set successfully and adds it to the list of existing reminders for that day

Scenario 2: Alternative Sequence at step 6

6. System : displays error message that a field is left empty by the user

Scenario 3: Alternative Sequence at step 6

6. System: displays error message that a reminder with exact same details already exists

1.2 Use Case 2

U2: timetable-view: Using this view a student can view the classes he/she has for the current week
Scenario 1: Mainline Sequence

1. User : selects a month
2. System : displays calendar of selected month and option to change "View"
3. User : select "Views" option
4. System : displays a drop down menu with various views
5. User : select "timetable view" option
6. System : displays timetable view with schedule of classes for the current week

1.3 Use Case 3

U3: set-background: Using this use case a student can change the theme of the app

Scenario 1: Mainline Sequence

1. User : selects "Change Background" option from top left corner
2. System : displays page to select image for background
3. User : selects "Upload Image" and chooses and image from device gallery
4. System : displays progress bar indicating percentage of image being uploaded
5. User : selects "Set Theme"
6. System : displays app with newly set theme

Scenario 2: Alternative Sequence at step 3

3. User : inserts "Image Link" and selects search image
4. System : displays progress bar indicating percentage of image being uploaded
5. User : selects "Set Theme"
6. System : displays app with newly set theme

Scenario 2: Alternative Sequence at step 4

4. System: displays error message that invalid image due to unsupported format or broken image link.

2 Domain Modelling

Domain analysis was performed to find the boundary, controller and entity objects in each use case. Finally, repetitions and objects performing same tasks were removed or merged to finalise the list of objects.

2.1 Use Case 1 - Domain Model

2.1.1 Boundary Objects

1. MonthSelect Boundary : The user interacts with this object by selecting a month for which he wishes to view/create events.
2. SetReminder Boundary : This boundary objects displays a button for the user to create a new reminder.
3. ReminderForm Boundary : This object displays a form to take user inputs for reminder details.

2.1.2 Controller Objects

1. MonthSelect Controller : This object manages the interactions performed by the user in the MonthSelect Boundary. It contains logic that allows user to view the events or create a new event after choosing a particular month.
2. SetReminder Controller : Upon user's request to create a new reminder, this object creates and displays a new ReminderForm Boundary object for the user. It also co-ordinates the storing of reminder details from the form and contains error checking logic.

2.1.3 Entity Objects

1. Reminder Entity: This object stores information about all reminders set by the user. Within each reminder, it contains details like reminder name, reminder type (deadline, meeting or class), date and time.

2.2 Use Case 2 - Domain Model

2.2.1 Boundary Objects

1. MonthSelect Boundary
2. ViewsDropDown Boundary : This object displays a list of possible views - Timetable, Deadline and Meeting View and allows the user to select one of them.
3. TimeTableList Boundary : This boundary object displays the list of classes the user has for the current week.

2.2.2 Controller Objects

1. MonthSelect Controller
2. ViewsController : This controller displays the appropriate list of events based on the user input and by coordinating with required entity objects.

2.2.3 Entity Objects

1. Timetable Entity : This entity contains the entire list of classes that the user has for the present week.

2.3 Use Case 3 - Domain Model

2.3.1 Boundary Objects

1. ChangeBackground Boundary : This boundary object provides the user with an interface to request for changing the theme of the app.

2. SetBackgroundForm Boundary : This displays the various options to upload an image as background for the app and allow seeks inputs for the image link.

2.3.2 Controller Objects

1. ChangeBackground Controller: This objects co-ordinates the upload of the image that the user wishes to keep as the theme. It also contains logic that reverts the app to the previous theme.

2. ImageUpload Controller: This controller tracks the progress of image upload.

2.3.3 Entity Objects

1. Theme Entity: This entity object stores information about the details of the theme selected by the user currently. It holds the image that is currently the theme, or the current colour scheme.

2.4 Final Domain Model Objects

After analysing the uses of the above objects, we have removed objects that perform redundant tasks and also merged some objects that perform similar tasks across the different use cases. All details for objects that are different from previously mentioned are below:

2.4.1 Boundary Objects

1. MonthView Boundary : This boundary performs the task of both letting user select a month (MonthSelect Boundary previously) and also an option to request for change background (ChangeBackground Boundary previously)

2. Calendar Boundary : This boundary object lets the user select the option for creating a new reminder (SetReminder Boundary previously) and also displays the calendar of present month.

3. ReminderForm Boundary

4. ViewDropDown Boundary

5. TimeTable Boundary

6. SetBackgroundForm Boundary

2.4.2 Controller Objects

1. MonthView Controller : This controller contains logic for serving user's request to view events of a month (MonthSelect Controller) or changing theme by displaying SetBackgroundForm Boundary (ChangeBackground Controller)

2. Calendar Controller : This object communicates with the required entity to display events of user selected date and also enables the user to create new reminder (SetReminder Controller previously).

3. Background Controller : This object co-ordinates all functions related to the upload of background image (ChangeBackground Controller previously). It also calculates the progress of the image being uploaded (ImageUpload Controller previously).

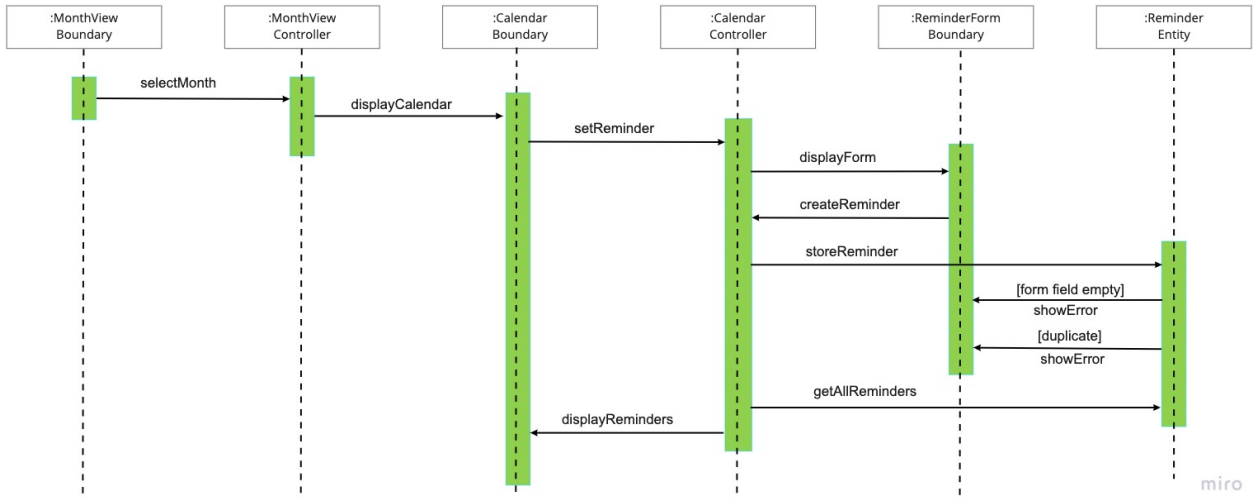
2.4.3 Entity Objects

1. Reminder Entity

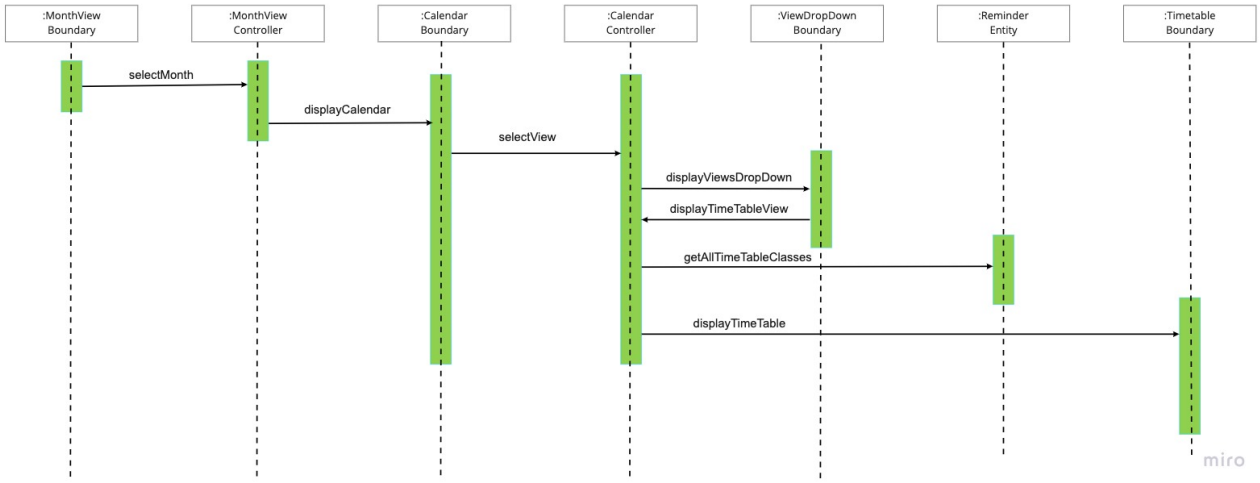
2. App Entity : This entity object contains all details about the app including the current theme and user uploaded background.

3 Sequence Diagram

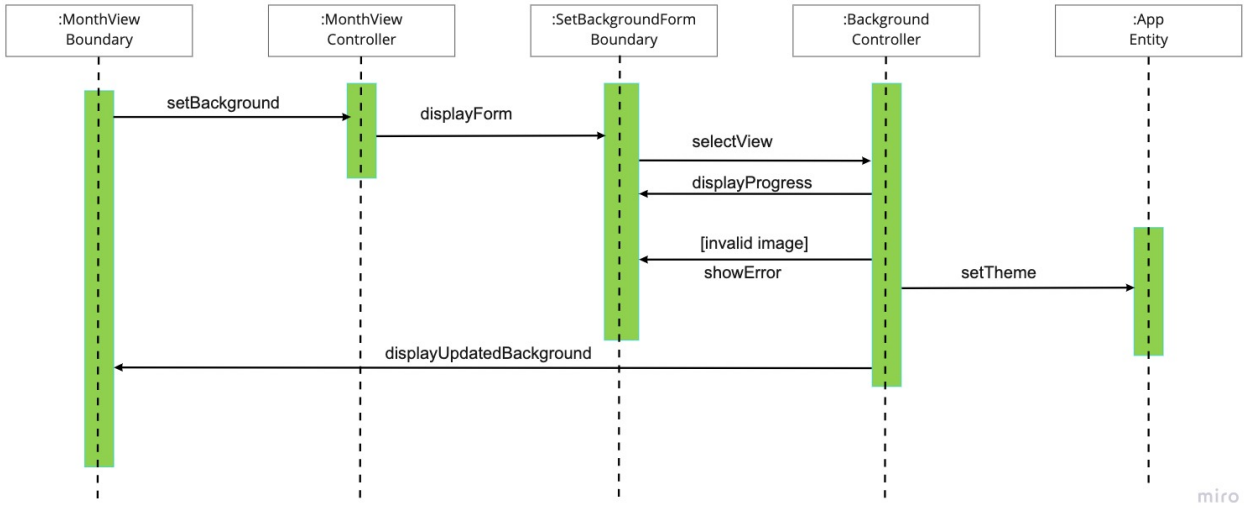
3.1 Use Case 1



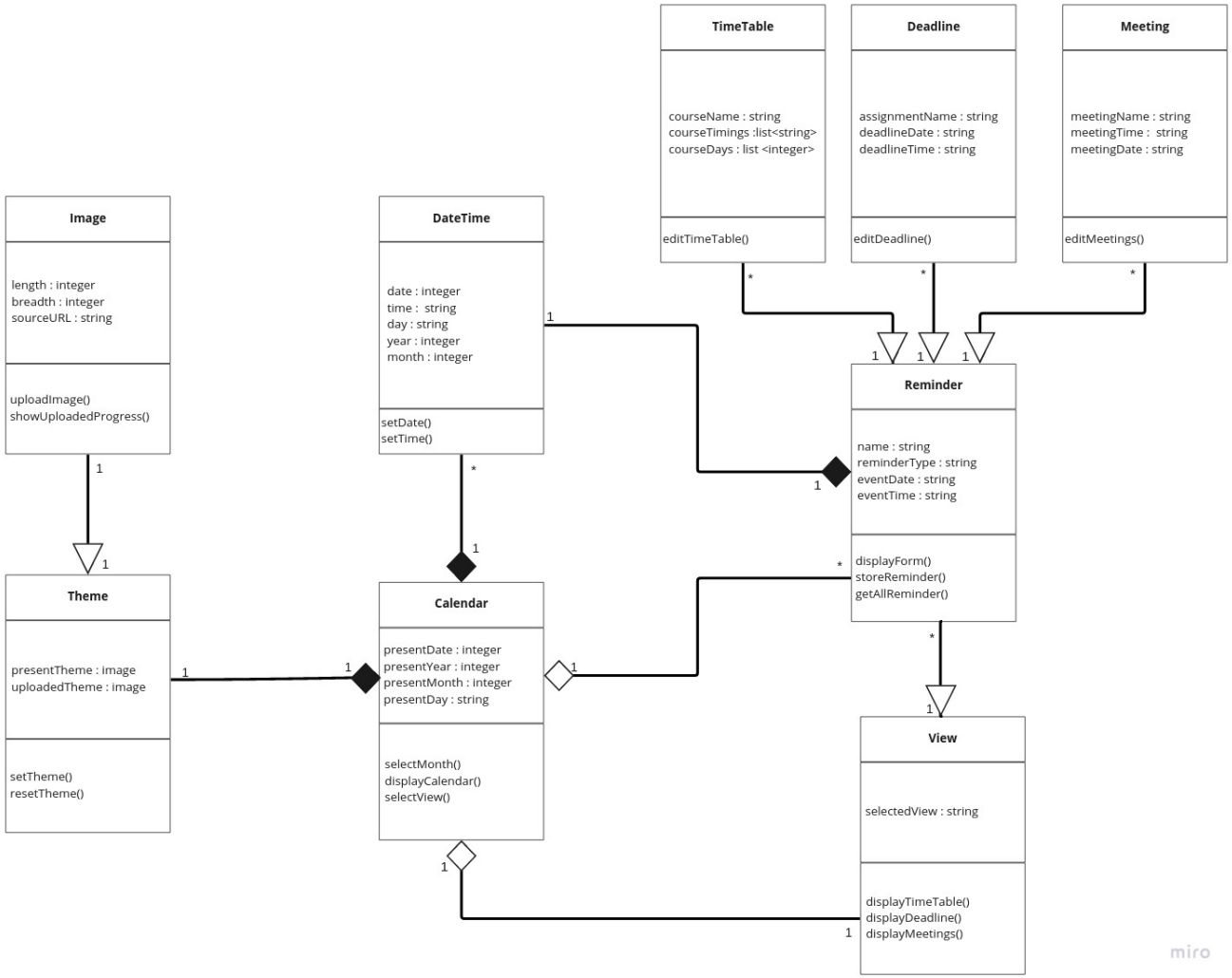
3.2 Use Case 2



3.3 Use Case 3



4 Class Diagram



5 Class Definitions

The following are descriptions and details about the

5.1 Theme

Methods:

1. setTheme()
    - Parameters: Image
    - Return Value: Success/Error response
    - Description: This updates the theme of the app with user uploaded image
2. resetTheme()
    - Return Value: Succes/Error response
    - Description: This method is used to set background theme to the default one

5.2 Image

Methods:

1. uploadImage()
    - Parameters: Image/URL
    - Return Value: Succes/Error response
    - Description: Uploads the selected image either from computer or provided URL
2. showUploadedProgress()
    - Return Value: Upload status in percentage (Integer)
    - Description: This method is used to show the percentage upload of the image

5.3 View

Methods:

1. displayTimeTable()
    - Parameters: Date
    - Return Value: List of classes
    - Description: This method is used to display the time table of a week
2. displayDeadline()
    - Parameters: Date
    - Description: This method displays the upcoming deadlines in the selected week
3. displayMeetings()
    - Parameters: Date
    - Description: This method displays upcoming meetings in the selected week

5.4 Reminder

Methods:

1. displayForm()
    - Description: This method is used to display a form so that the user can enter the reminder details
2. storeReminder()
    - Parameters: details (name, reminderType,eventDate,eventTime)
    - Description: This method is used to create a new reminder
3. getAllReminder()
    - Return Value: List of reminders
    - Description: This method is used to the display list of all reminders

5.5 Calendar

1. selectMonth()
    - Parameters: Present month
    - Description: Sets the month of the app to given input month
2. displayCalender()
    - Parameters: Present month
    - Description: Display calendar of present month
3. selectView()
    - Description: Changes calendar app view to timetable/deadline or meeting

5.6 Meeting

1. editMeetings()
    - Parameters: date
    - Description: This method allows you to edit saved meetings

5.7 Deadline

1. editDeadline()
    - Parameters: date
    - Description: This method allows you to edit saved deadline

5.8 TimeTable

1. editTimeTable()
    - Parameters: date
    - Description: This method allows you to edit saved timetable

5.9 DateTime

1. setTime()
    - Parameters: Time
    - Description: This method sets the time
2. setDate()
    - Parameters: Date
    - Description: This method sets the date