

Calender App

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Abstract

Our group project is a calender application that runs in the background. Some of the functions are notifying the user of events, importing and exporting user profiles and customizing the user experience with pictures. The target audience are users that want more freedom from their calendar application.

1. Introduction

Our group project is a calender application, it will be built in a C# WPF application that runs in the background. Some of the functions are notifying the user of events, view historic information and customizing the user experience with pictures. We are targeting individuals who want the ability to customize, export, import and set specific day/month/year/time notifications. We want to give the user a calendar application that better then what is offered currently.

1.1. Background

We decided on this project because we do not have much experience in C#. We also felt we could improve on the traditional calender application providing additional freedom and features. Providing features like viewing historic information and customizing backgrounds with user pictures. A calender application sounded like a project that could be fun, challenging and a worthwhile semester long project.

1.2. Impacts

The project is geared towards a general audience. Our application is appealing to that audience because of the ability to view historic information, customize the look of the applications background, set custom notifications. It may have a small but positive effect on the end user helping manage and organize life events.

1.3. Challenges

The layout of the GUI seems daunting since some months have more days than others. We plan to take inspiration from the numerous calender application that are already in the wild. While also improving on the GUI layout making it more user friendly and intuitive.

Adjusting the GUI for events like leap years. - We plan on using already built time/date functions to account for this.

2. Scope

The app will display the current date and time when first opened. Let the user change the date and set a notification on that date at a specific time. The user should be able to set the background of the app to a designated picture format. The app should have important holidays and dates displayed.

2.0.1. Stretch-Goals. Export a user profile to be imported later into the same or different calender application. Adding weather to be displayed in the GUI of the application.

2.1. Requirements

The functional and non-functional requirements were gathered based upon what the program would need to be considered complete.

2.1.1. Functional.

- User needs to be able to specify a specific day/month/year to add a notification.
- User can change background of the calendar with a picture.
- User can change and navigate through the month, year and day.
- User can cancel or modify an existing notification.

Use Case ID	Use Case Name	Primary Actor	Complexity	Priority
1	Set a notification	User	Med	1
2	remove or change a set notification	User	Med	1
3	Change calender background	User	Low	1
4	View historic information	User	Low	1

TABLE 1. SAMPLE USE CASE TABLE

2.1.2. Non-Functional.

- User saved notifications should be encoded to protect user data.

2.2. Use Cases

1.

Use Case Number: 1-2

Use Case Name: Set a notification

Description: The user has a specific date and time they wish for a notification to appear on. The user navigates to the desired date. Selects the date and then specifies a time where the program saves that data and creates a notification.

- 1) User navigates to desired date.
- 2) User selects the date.
- 3) User specifies a time on that date.

Termination Outcome: The user has a notification set on that time and day.

Alternative: Notification has already been created

- 1) User navigates to the same date
- 2) User selects the date
- 3) User selects the same time
- 4) User chooses to cancel or modify existing notification

Termination Outcome: The notification has been modified or canceled

Use Case Number: 3

Use Case Name: Change calendar background

Description: The user desires to change the background of the calendar

- 1) User clicks on a button to upload an image.
- 2) User selects the image.
- 3) User confirms the selected image.

Termination Outcome: The user has changed the background of the calendar.

Use Case Number: 4

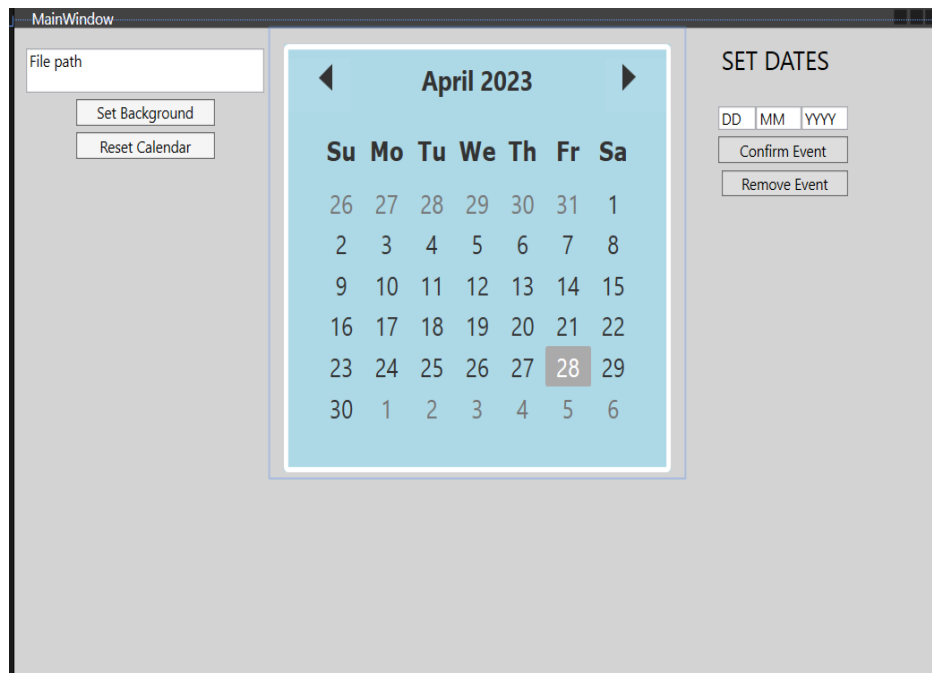
Use Case Name: View historic information

Description: A user desires to view specific historic information on a date.

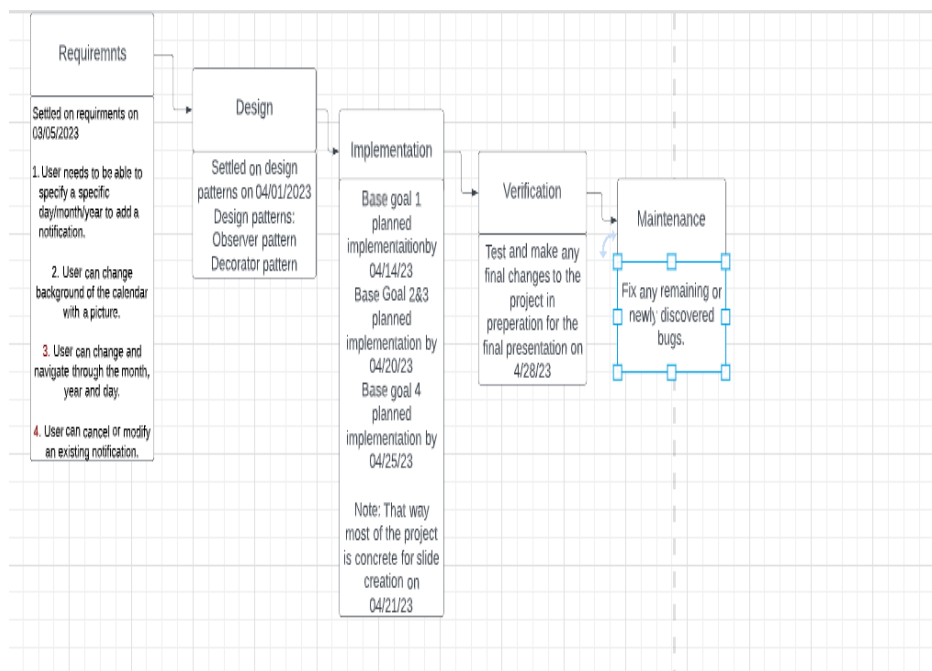
- 1) User navigates to a specific date.
- 2) User selects the specific date.

Termination Outcome: The historic information is displayed to the user.

2.3. Interface Mockups



3. Project Timeline



4. Project Structure

The way we designed the project so that the main screen where the user sees all their current events and notifications is clean. We tried implementing new windows for settings and events but could not get it working. We laid out all the functionality on the main window in a clean straightforward way for the user.

4.1. UML Outline

We chose the decorator pattern as we already found a calendar object we could just decorate to help meet one of our base goals. We chose an observer pattern so that while the calendar is not actively running the notifications can be checked to see if the set time has passed. For example, see Figure 1.

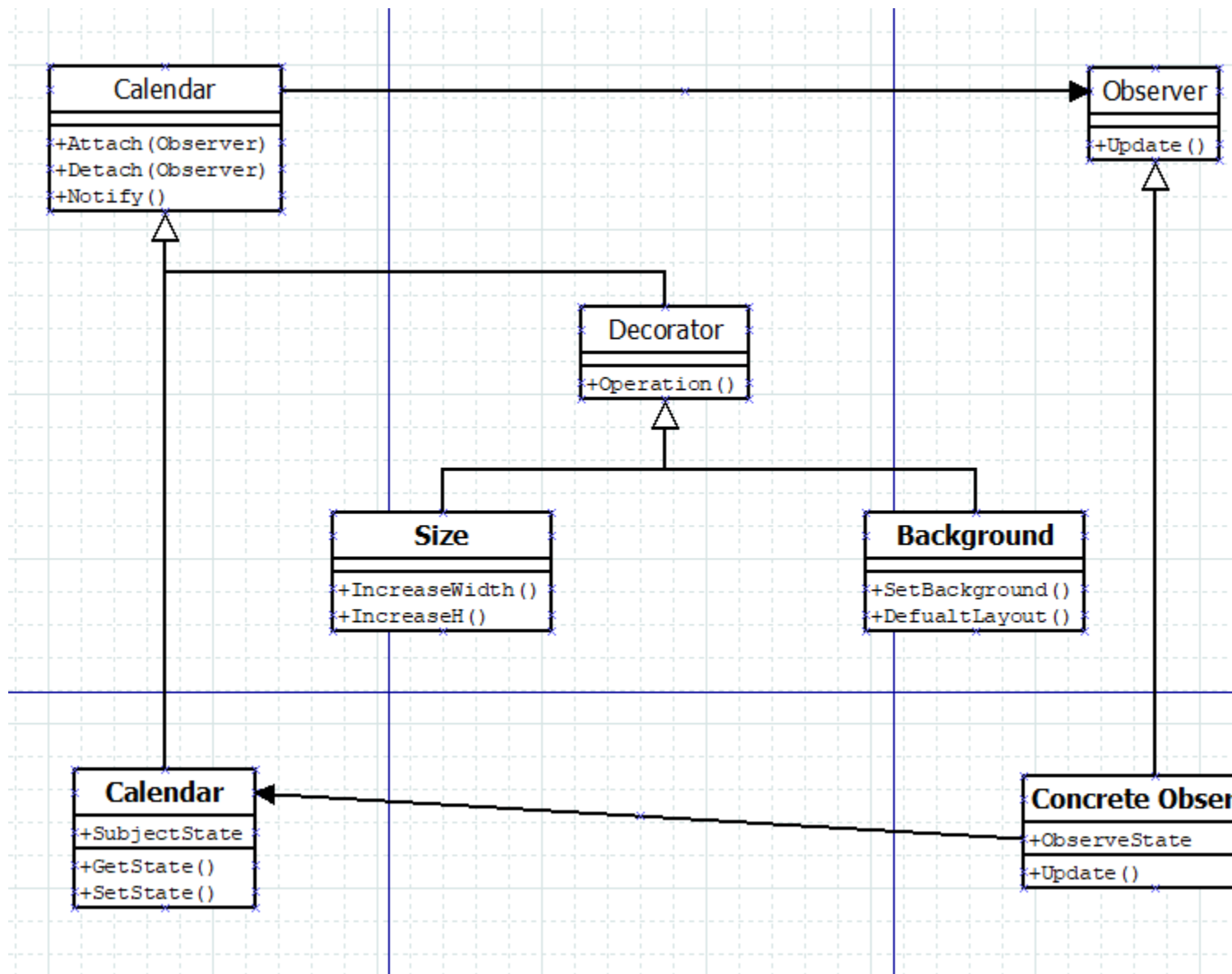


Figure 1. Uml outline of our Calendar project

4.2. Design Patterns Used

We are implementing the observer and decorator patterns. The decorator pattern to add new functionality to the calendar object we are using. The observer pattern to notify the user when a set event is happening.

5. Results

We implemented use cases 1, 2 and 3 the user can set the background of the calendar with an image using the image file path. The user can set a notification and remove a set notification. We did not finish implementing use case 4. Historic information and holidays are not in the application.

5.1. Future Work

We would like to build new features into our project in the future. We did not meet one of our base goals and would like to finish implementing that as we feel it is important to our project. We also want to expand our knowledge with C# and push the boundary of what we thought was possible. One feature we wanted to implement was the exporting and importing from other calendar applications. However, if that does not come to fruition our project will be linked on our resume.

References

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.