

## Assignment - 2

### Calendars Application

Note: access an Event or a Calendar with the ID you can acquire after choosing to view them.

Note: For the specific steps, please view the output in the **blue** color, the option needed to be chosen is specified in **red** color.

Java Version: *java 18 2022-03-22*

### This application support 6 features:

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1. The application supports Gregorian Calendar. However, all Gregorian calendar objects are referred to as Calendars for the sake of following the Dependency inversion principle, in order to rely on the abstraction, rather than the concretion. In order to create a calendar input the numbers in that order:

Your current setttings are:

[THEME] --- LIGHT

[TIMEZONE] --- PST

Please choose from following options:

- 1 --- Log-in
- 2 --- Sign-up
- 3 --- View all registered users
- 4 --- View current logged-in user
- 5 --- Configure settings
- 6 --- Exit

**Your input: 2**

Choice: [2 --- Sign-up]

Please enter a username: Aika

User with username: Aika was successfully created.

- 1 --- Log-in
- 2 --- Sign-up
- 3 --- View all registered users
- 4 --- View current logged-in user
- 5 --- Configure settings
- 6 --- Exit

**Your input: 1**

Choice: [1 --- Log-in]

Please enter your username: Aika

You were successfully signed in as: Aika

Choose from following options:

- 1 --- View my Calendars
- 2 --- Create a Calendar
- 3 --- Choose a Calendar
- 4 --- Delete a calendar
- 5 --- Delete my account
- 6 --- Back <-

**Your input: 2**

Choice: [2 --- Create a Calendar ]

Please enter a name for your new calendar: YellowCalendar

Calendar with name: YellowCalendar was successfully created for user: Aika

- 1 --- View my Calendars
- 2 --- Create a Calendar
- 3 --- Choose a Calendar
- 4 --- Delete a calendar
- 5 --- Delete my account
- 6 --- Back <-

**Your input: 1**

Choice: [1 --- View my Calendars]

Below are all of your existing calendars:

Calendar ID	Name	# of Events
0	YellowCalendar	0

- 
2. Each calendar has its own set of events, where you can set the day, month, year, start time, and end time of the event. When shown in the view, events will be presented as events per specific month. In order to see the functionality, choose “Add an Event” option and enter required fields:

Below are all of your exisiting calendars:

Calendar ID	Name	# of Events
0	YellowCalendar	0

```
1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-
```

**Your input: 3**

Choice: [3 --- Choose a Calendar]

Please enter the ID of the calendar you would like to see: 0  
You are viewing: YellowCalendar calendar

Please choose from following options:

```
1 --- View Monthly
2 --- Back <-
```

**Your input: 1**

Choice: [1 --- View Monthly]

Today's date: February 3, 2023

FEBRUARY, 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Please choose from following options:

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: February

ID	Title	Date	Start Time	End Time
---- NO EVENTS ----				

\*\*\*\*\*

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 2**

Choice: [2 --- Add an event]

Enter title: **Mom's birthday**

Enter day: **11**

Enter month: **2**

Enter year: **2023**

Enter start time in HH-MM format: **08-00**

Enter end time in HH-MM format: **11-00**

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: February

ID	Title	Date	Start Time	End Time
0	Mom's birthday	2/11/2023	08-00	11-00

\*\*\*\*\*

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 5**

Choice: [5 --- Move to next]

Today's date: February 3, 2023

MARCH, 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

**Your input: 2**

Choice: [2 --- Add an event]

Enter title: **EventInMarch**

Enter day: **9**

Enter month: **3**

Enter year: **2023**

Enter start time in HH-MM format: **10-00**

Enter end time in HH-MM format: **11-00**

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: March

ID	Title	Date	Start Time	End Time
----	-------	------	------------	----------

```
1          EventInMarch          3/9/2023          10-00          11-00
*****
```

---

3. The logged-in user is able to add, edit, and delete events by its id. Choose “Add an event”, “Update an event” or “Delete an event” option and specify the id to see the functionality.

```
*****
```

```
Events of month: March
```

```
ID          Title          Date          Start Time          End Time
1          EventInMarch      3/9/2023      10-00          11-00
*****
```

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 4**

```
Choice: [4 --- Update an event]
```

```
Enter the ID of the event you want to update:1
```

```
What would you like to change:
```

```
1 --- Date
2 --- Time
3 --- Title
1
```

```
Please enter the new date in the MM-DD-YYYY format:
```

**02-10-2023**

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 1**

```
Choice: [1 --- View all events]
```

\*\*\*\*\*

Events of month: March

ID	Title	Date	Start Time	End Time
---- NO EVENTS ----				

\*\*\*\*\*

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

**Your input: 6**

Choice: [6 --- Move to previous]

Today's date: February 3, 2023

FEBRUARY, 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: February

ID	Title	Date	Start Time	End Time
0	Mom's birthday	2/11/2023	08-00	11-00
1	EventInMarch	2/10/2023	10-00	11-00

\*\*\*\*\*

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 4**

Choice: [4 --- Update an event]

Enter the ID of the event you want to update:1

What would you like to change:

```
1 --- Date
2 --- Time
3 --- Title
```

Your input: 3

Enter the new title:**NowInFeb**

```
1 --- View all events
2 --- Add an event
3 --- Delete an event
4 --- Update an event
5 --- Move to next
6 --- Move to previous
7 --- Back <-
```

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: February

ID	Title	Date	Start Time	End Time
0	Mom's birthday	2/11/2023	08-00	11-00
1	NowInFeb	2/10/2023	10-00	11-00

\*\*\*\*\*

- 
4. The Calendars app supports multiple users each with their own id and username. Each user can have multiple calendars and each calendar has its own set of events.

```
1 --- Log-in
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit
```

**Your input: 2**



Choice: [2 --- Sign-up]

**Please enter a username: User2**

User with username: User2 was successfully created.

1 --- Log-in  
2 --- Sign-up  
3 --- View all registered users  
4 --- View current logged-in user  
5 --- Configure settings  
6 --- Exit

**Your input: 2**

Choice: [2 --- Sign-up]

Please enter a username: User3

User with username: User3 was successfully created.

1 --- Log-in  
2 --- Sign-up  
3 --- View all registered users  
4 --- View current logged-in user  
5 --- Configure settings  
6 --- Exit

**Your input: 2**

Choice: [2 --- Sign-up]

**Please enter a username: User4**

User with username: User4 was successfully created.

1 --- Log-in  
2 --- Sign-up  
3 --- View all registered users  
4 --- View current logged-in user  
5 --- Configure settings  
6 --- Exit

Your input: 1

Choice: [1 --- Log-in]

**Please enter your username: User4**

You were successfully signed in as: User4

Choose from following options:

1 --- View my Calendars  
2 --- Create a Calendar  
3 --- Choose a Calendar  
4 --- Delete a calendar  
5 --- Delete my account  
6 --- Back <-

**Your input: 2**

Choice: [2 --- Create a Calendar ]

Please enter a name for your new calendar: BlueCalendar

Calendar with name: BlueCalendar was successfully created for user: User4

1 --- View my Calendars  
2 --- Create a Calendar  
3 --- Choose a Calendar  
4 --- Delete a calendar  
5 --- Delete my account  
6 --- Back <-

**Your input: 2**

Choice: [2 --- Create a Calendar ]

Please enter a name for your new calendar: Pink Calendar

Calendar with name: Pink Calendar was successfully created for user: User4

1 --- View my Calendars  
2 --- Create a Calendar  
3 --- Choose a Calendar  
4 --- Delete a calendar  
5 --- Delete my account  
6 --- Back <-

**Your input: 6**

Choice: [6 --- Back <-]

1 --- Log-in  
2 --- Sign-up  
3 --- View all registered users  
4 --- View current logged-in user  
5 --- Configure settings  
6 --- Exit

**Your input: 3**

Choice: [3 --- View all registered users]

UserID	Username	# of Calendars
0	Aika	1
1	User2	0
3	User4	2
2	User3	0

1 --- Log-in

```
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit
```

**Your input: 4**

Choice: [4 --- View current logged-in user]

Current Logged-in User: User4

**Your input: 2**

Choice: [2 --- Create a Calendar ]

Please enter a name for your new calendar: BlueCalendar  
Calendar with name: BlueCalendar was successfully created for user: User4

```
1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-
```

**Your input: 2**

Choice: [2 --- Create a Calendar ]

Please enter a name for your new calendar: Pink Calendar  
Calendar with name: Pink Calendar was successfully created for user: User4

```
1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-
```

**Your input: 6**

Choice: [6 --- Back <-]

```
1 --- Log-in
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit
```

**Your input: 3**

Choice: [3 --- View all registered users]

UserID	Username	# of Calendars
0	Aika	1
1	User2	0
3	User4	2
2	User3	0

```

1 --- Log-in
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit

```

**Your input: 4**

Choice: [4 --- View current logged-in user]

Current Logged-in User: User4

```

1 --- Log-in
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit

```

**Your input: 1**

Choice: [1 --- Log-in]

Please enter your username: User4

You were successfully signed in as: User4

Choose from following options:

```

1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-

```

**Your input: 1**

Choice: [1 --- View my Calendars]

Below are all of your exisiting calendars:

Calendar ID	Name	# of Events
1	BlueCalendar	0
2	Pink Calendar	0

```

1 --- View my Calendars
2 --- Create a Calendar

```

3 --- Choose a Calendar  
4 --- Delete a calendar  
5 --- Delete my account  
6 --- Back <-

**Your input: 3**

Choice: [3 --- Choose a Calendar]

Please enter the ID of the calendar you would like to see: 2  
You are viewing: Pink Calendar calendar

Please choose from following options:

1 --- View Monthly  
2 --- Back <-

**Your input: 1**

Choice: [1 --- View Monthly]

Today's date: February 3, 2023

FEBRUARY, 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Please choose from following options:

1 --- View all events  
2 --- Add an event  
3 --- Delete an event  
4 --- Update an event  
5 --- Move to next  
6 --- Move to previous  
7 --- Back <-

**Your input: 2**

Choice: [2 --- Add an event]

Enter title: PinkCalendarEvent

Enter day: 9

Enter month: 2

Enter year: 2023

Enter start time in HH-MM format: 10-00

Enter end time in HH-MM format: 11-00

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

**Your input: 1**

Choice: [1 --- View all events]

\*\*\*\*\*

Events of month: February

ID	Title	Date	Start Time	End Time
2	PinkCalendarEvent	2/9/2023	10-00	11-00

\*\*\*\*\*

- 1 --- View all events
- 2 --- Add an event
- 3 --- Delete an event
- 4 --- Update an event
- 5 --- Move to next
- 6 --- Move to previous
- 7 --- Back <-

Your input: 7

Choice: [7 --- Back <-]

- 1 --- View Monthly
- 2 --- Back <-

Your input: 2

Choice: [2 --- Back <- ]

- 1 --- View my Calendars
- 2 --- Create a Calendar
- 3 --- Choose a Calendar
- 4 --- Delete a calendar
- 5 --- Delete my account
- 6 --- Back <-

**Your input: 1**

Choice: [1 --- View my Calendars]

Below are all of your existing calendars:

Calendar ID	Name	# of Events
1	BlueCalendar	0
2	Pink Calendar	1

---

5. A user can log-in, view all calendars, create a calendar, delete a calendar, or delete their account after they log-in.

Please see 4) and deleting calendar process is below:

**Your input: 1**

Choice: [1 --- View my Calendars]

Below are all of your exisiting calendars:

Calendar ID	Name	# of Events
1	BlueCalendar	0
2	Pink Calendar	1

```

1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-

```

**Your input: 4**

Choice: [4 --- Delete a calendar]

Enter the ID of the calendar you want to delete: 1  
The calendar was successfullly deleted.

```

1 --- View my Calendars
2 --- Create a Calendar
3 --- Choose a Calendar
4 --- Delete a calendar
5 --- Delete my account
6 --- Back <-

```

**Your input: 1**

Choice: [1 --- View my Calendars]

Below are all of your existing calendars:

Calendar ID	Name	# of Events
2	Pink Calendar	1

---

6. Calendar visualizes the events as well as the calendar view itself for each month. The user is able to move back and forth between different months in the calendar.

Please see 4.

---

7. Calendars has a screen that allows the user to configure the app for a particular time zone or change the app's theme.

```
1 --- Log-in
2 --- Sign-up
3 --- View all registered users
4 --- View current logged-in user
5 --- Configure settings
6 --- Exit
```

**Your input: 5**

Choice: [5 --- Configure settings]

What would you like to configure

```
1 --- Theme
2 --- TimeZone
```

1

Choose:

```
1 --- Light
2 --- Dark
```

**2**

---

### Short Summary:

Main changes I have made: created a ***calendarDatabase*** and ***UserDatabase*** to store all of the calendars of all the users and have imported the *java.util.Calendar* package in order to work with dates, month names, day names, month lengths and other similar data. This change has helped to speed up the process of coding since using an API is always more beneficial than rewriting the code that is already available for free use. As for the database, it created an easier process of adding and removing users as well as calendars for them.



---

## Detailed description of the UML Changes:

class **Person**: — slightly improved

I did not implement the sharing option of the Calendars, thus the UML diagram does not contain the sharedCals and sahredEvents maps. The Person class only has the addCalendar() method for me, because I want to keep track of the number of Calendars in the Person class in order to print the number of Calendars a user created when the information about this user is requested. For the actual addCalendar, deleteCalendar, UpdateCalendar methods I created a Calendar Database class that keeps track of the Calendars for all users. The reason I did this, because the UML diagram had a CalendarFeed class, which means I might need access to all the public calendars available within the application and in order to make that access easier I have a common database for all users. I did not have time to implement the share Calendar feature within the application, however I made this choice for the design as to conform to future possible changes. This was the biggest change I made overall.

class **CalendarDatabase**: — Newly added

This class takes care of all actions needed to be done with the calendars, such as add a calendar for a particular user, delete calendar, update calendar, and see if a calendar with specific id is present.

class **UserDatabase**: — Newly added

The original UML did not account for the possibility of the application having more than 1 user, thus I needed a structure to hold all of the users, as well as perform operations such as adding a user, deleting a user, or finding if the user has already registered. For those reasons, UserDatabase was a necessary class to implement.

enum *CalendarTypeEnum*: – Unchanged

Calendars class uses this enum to specify the type of the calendar.

interface *Displayable*: — Newly added

MonthVisual implements this interface and overrides the display() method. I have added this interface to support future changes. If daily and yearly views are included, then this interface will also be implemented by those classes making it easier to call the methods without knowing the exact type of the class.

class *Event* — Improved

The Event class was slightly changed from the original because of the lack of necessary methods. Methods such as: editEvent(), changeDate(), changeTime(), changeTitle(), @override compareTo were added along with the *title* instance variable in order to follow the requirements specifications of the application. In order to allow the user to update the event, these changes were unavoidable.

class *Calendars* — very slightly changed

I have changed the class name from Calendar to Calendars so that it does not interfere with the package I have imported from java.util library.

class *MainWindow* — Improved

The MainWindow is supplied with all the necessary components to keep track of all the information flowing in and out of the program. The run() method is the MainMenu method which in turn calls the other menus. I changed the user to currentLoggedInUser because the original UML did not account for more than one user. Settings instance variable remains unchanged.

class *MonthVisual* — Newly added

The original UML diagram did not have a component that supports the view of the Calendar. This class was added to allow the user to view the calendar as a printed calendar, as well as view all the events within the month that the user is currently viewing. The user can change the monthly view by choosing the move to the next month or previous month option.

interface *Movable* – Newly added

The movable interface is implemented by the MonthVisual interface. The moveToNext() and moveToPrevious() are defined in the MonthVisual. This interface was added for the future changes, when different view types are added, such as daily view or early view.

class *Settings* – Unchanged

This class configures the theme and the timezone of the application.

enum *Theme* – Unchanged

This enum is used by the Settings class.

enum *TimeZone* – Unchanged

This enum is used by the Settings class also.