

TP1 : Calendar

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How to compile and launch the program

Execute `make` in the project folder and then execute with `./main`

Unit tests

Test if a new event is added correctly to the calendar.

We create a new event and add it to the calendar.

```
You are working with the calendar named : no named calendar
Here are the options available :
```

```
0 - Add an event to your current calendar
1 - Remove an event from your agenda
2 - Show the calendar
3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "no named calendar"
```

```
Enter a number between 0 and 5: 0
```

```
Add an event to your current calendar
```

```
Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 28/01/2024
```

```
Enter the hour of the event with this format : 'hh:mm'
-> : 18:53
```

```
Enter a commentary for the event (max 200 characters)
(if your commentary lengths is inferior to 199, press enter twice)
-> : Faire à manger
```

```
we initiate the calendar
```

Test if a new event is added correctly at the beginning of the calendar.

Add an event to your current calendar

Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 11/03/2024

Enter the hour of the event with this format : 'hh:mm'
-> : 12:00

Enter a commentary for the event (max 200 characters)
(if your commentary lengths is inferior to 199, press enter twice)
-> : Préparer son avenir

we add an event

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

0 - Add an event to your current calendar
1 - Remove an event from your agenda
2 - Show the calendar
3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|-----------------------|
| 11/03/2024 | 12:00 | Préparer son avenir |
| 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |

Test if a new event is added correctly at the end of the calendar.

Add an event to your current calendar

Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 30/05/2024

Enter the hour of the event with this format : 'hh:mm'
-> : 23:59

Enter a commentary for the event (max 200 characters)
(if your commentary lengths is inferior to 199, press enter twice)
-> : Faire la fête !

we add an event

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

- 0 - Add an event to your current calendar
 - 1 - Remove an event from your agenda
 - 2 - Show the calendar
 - 3 - Load a calendar
 - 4 - Export your calendar
 - 5 - Quit the application
- Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|-----------------------|
| 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |
| 30/05/2024 | 23:59 | Faire la fête ! |

Test if an event is correctly deleted from the calendar.

We delete the event at the index 1 (the second event) :

Remove an event from your agenda

State of current calendar :

| n° | Date | Hour | Commentary |
|----|------------|-------|-----------------------|
| 00 | 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 01 | 12/04/2024 | 17:30 | Changer de vêtements |
| 02 | 24/05/2024 | 17:00 | Se doucher |

Enter the number of the event you want to delete : 1

You entered : 1

Event to suppress | 12/04/2024 | 17:30 | Changer de vêtements

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

- 0 - Add an event to your current calendar
- 1 - Remove an event from your agenda
- 2 - Show the calendar

3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|----------------------|
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |

Test if the calendar correctly handles the deletion of the first event.

Remove an event from your agenda

State of current calendar :

| n° | Date | Hour | Commentary |
|----|------------|-------|-----------------------|
| 00 | 11/03/2024 | 12:00 | Préparer son avenir |
| 01 | 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 02 | 12/04/2024 | 17:30 | Changer de vêtements |
| 03 | 24/05/2024 | 17:00 | Se doucher |

Enter the number of the event you want to delete : 0

You entered : 0

Event to suppress | 11/03/2024 | 12:00 | Préparer son avenir

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

0 - Add an event to your current calendar
1 - Remove an event from your agenda
2 - Show the calendar
3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|-----------------------|
| 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |

Test if the calendar correctly handles the deletion of the last event.

Remove an event from your agenda

State of current calendar :

| n° | Date | Hour | Commentary |
|----|------------|-------|-----------------------|
| 00 | 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 01 | 12/04/2024 | 17:30 | Changer de vêtements |
| 02 | 24/05/2024 | 17:00 | Se doucher |
| 03 | 30/05/2024 | 23:59 | Faire la fête ! |

Enter the number of the event you want to delete : 3

You entered : 3

Event to suppress | 30/05/2024 | 23:59 | Faire la fête !

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

- 0 - Add an event to your current calendar
 - 1 - Remove an event from your agenda
 - 2 - Show the calendar
 - 3 - Load a calendar
 - 4 - Export your calendar
 - 5 - Quit the application
- Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|-----------------------|
| 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |

Test if the calendar correctly handles the deletion of an event that doesn't exist.

Remove an event from your agenda

State of current calendar :

| n° | Date | Hour | Commentary |
|----|------------|-------|-----------------------|
| 00 | 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 01 | 12/04/2024 | 17:30 | Changer de vêtements |
| 02 | 24/05/2024 | 17:00 | Se doucher |

Enter the number of the event you want to delete : 4
Invalid input. Please enter a number between 0 and 2.

Test if the calendar correctly handles the deletion of an event from an empty calendar.

Enter a number between 0 and 5: 2

Show the calendar

Your calendar is empty

You are working with the calendar named : no named calendar
Here are the options available :

0 - Add an event to your current calendar
1 - Remove an event from your agenda
2 - Show the calendar
3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "no named calendar"

Enter a number between 0 and 5: 1

Remove an event from your agenda

Your calendar is empty, you have nothing to remove

Test if the calendar correctly sorts events by date and hour when a new event is added.

We add the event 12/04/2024 17:15 : "Se brosser les dents".

In the list of events, it should be placed between "Prendre des mouchoirs" and "Changer de vêtements".

Add an event to your current calendar

Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 12/04/2024

Enter the hour of the event with this format : 'hh:mm'
-> : 17:15

Enter a commentary for the event (max 200 characters)
(if your commentary lengths is inferior to 199, press enter twice)
-> : Se brosser les dents

we add an event

You are working with the calendar named : RencontreEnPapouasie
Here are the options available :

0 - Add an event to your current calendar
1 - Remove an event from your agenda
2 - Show the calendar
3 - Load a calendar
4 - Export your calendar
5 - Quit the application
Current agenda used : "RencontreEnPapouasie"

Enter a number between 0 and 5: 2

Show the calendar

State of current calendar :

| Date | Hour | Commentary |
|------------|-------|-----------------------|
| 12/04/2024 | 17:00 | Prendre des mouchoirs |
| 12/04/2024 | 17:15 | Se brosser les dents |
| 12/04/2024 | 17:30 | Changer de vêtements |
| 24/05/2024 | 17:00 | Se doucher |

Test if the input of the user is correctly handled when he enters a wrong date.

1. We try to add an event with the date 29/02/2024, which is not a valid date.

Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 29/02/2024
/!\ Invalid input. Please enter a date with this format : 'dd/mm/yyyy'

2. We try to add an event with the date 31/04/2024, which is not a valid date.

Enter the date of the event with this format : 'dd/mm/yyyy'
-> : 31/04/2024

/!\ Invalid input. Please enter a date with this format : 'dd/mm/yyyy'

3. We try to add an event with the date 12/13/2024, which is not a valid date.

Enter the date of the event with this format : 'dd/mm/yyyy'

-> : 12/13/2024

/!\ Invalid input. Please enter a date with this format : 'dd/mm/yyyy'

4. We try to add an event with the date 28/02/2023, which is not a valid date.

Enter the date of the event with this format : 'dd/mm/yyyy'

-> : 28/02/2023

/!\ Invalid input. Please enter a date with this format : 'dd/mm/yyyy'

Test if the input of the user is correctly handled when he enters a wrong hour.

1. We try to add an event with the hour 24:00, which is not a valid hour.

Enter the hour of the event with this format : 'hh:mm'

-> : 24:00

/!\ Invalid input. Please enter an hour with this format : 'hh:mm'

2. We try to add an event with the hour 12:60, which is not a valid hour.

Enter the hour of the event with this format : 'hh:mm'

-> : 12:60

/!\ Invalid input. Please enter an hour with this format : 'hh:mm'

3. We try to add an event with the hour 12:00, which is a valid hour.

Enter the hour of the event with this format : 'hh:mm'

-> : 12:00

It pass to the next step.

4. We try to add an event with the hour 12:0, which is not a valid hour.

Enter the hour of the event with this format : 'hh:mm'

-> : 12:0

Enter a commentary for the event (max 200 characters)

It pass which should not happen.

List of functions and their purpose

List of functions in `library.c`

Here is the list of your functions in `library.c` with their purpose, what they take as argument, and their type of return:

1. `void initiateCalendar(calendarEvent * calendar, int date, int hour, char * description)`
 - Purpose: Initializes the calendar with a single event.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`), the date (`int date`), the hour (`int hour`), and a description of the event (`char * description`).
 - Return type: `void`
2. `void addEvent(calendarEvent * calendar, int date, int hour, char * description)`
 - Purpose: Adds a new event to the calendar.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`), the date (`int date`), the hour (`int hour`), and a description of the event (`char * description`).
 - Return type: `void`
3. `calendarEvent * suppressEvent(calendarEvent * calendar, int date, int hour)`
 - Purpose: Deletes an event from the calendar.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`), the date (`int date`), and the hour (`int hour`) of the event to delete.
 - Return type: `calendarEvent *` - Returns a pointer to the updated calendar.
4. `calendarEvent * openCalendar(char * path, char * calendarName)`
 - Purpose: Opens a saved calendar from a file.
 - Arguments: The path to the file (`char * path`) and a string to store the name of the calendar (`char * calendarName`).
 - Return type: `calendarEvent *` - Returns a pointer to the opened calendar.
5. `void saveCalendar(calendarEvent * calendar, char * path)`
 - Purpose: Saves the current calendar to a file.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`) and the path to the file (`char * path`).
 - Return type: `void`
6. `void freeCalendar(calendarEvent * calendar)`
 - Purpose: Frees the memory allocated for the calendar.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`).
 - Return type: `void`
7. `void clearInputBuffer()`
 - Purpose: Clears the input buffer to prevent leftover input from affecting subsequent input operations.
 - Arguments: None.
 - Return type: `void`

8. `int cmpDate(int date1, int date2)`
 - Purpose: Compares two dates.
 - Arguments: The first date (`int date1`) and the second date (`int date2`).
 - Return type: `int` - Returns 1 if the first date is earlier than the second date, 0 otherwise.

List of functions in `UI_functions.c`

Here is the list of your functions in `UI_functions.c` with their purpose, what they take as argument, and their type of return:

1. `int inputMenu(calendarEvent * calendar, char * nameCalendar)`
 - Purpose: Handles the user input for the main menu of the calendar application.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`) and a string representing the name of the calendar (`char * nameCalendar`).
 - Return type: `int` - Returns the user's menu selection.
2. `void inputEvent(calendarEvent * calendar)`
 - Purpose: Handles the user input for adding a new event to the calendar.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`).
 - Return type: `void`
3. `void printCalendar(calendarEvent * calendar)`
 - Purpose: Prints the events in the calendar to the console.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`).
 - Return type: `void`
4. `int checkDateValue(int day, int month, int year)`
 - Purpose: Checks if a given date is valid.
 - Arguments: The day (`int day`), month (`int month`), and year (`int year`) of the date to check.
 - Return type: `int` - Returns 1 if the date is valid, 0 otherwise.
5. `calendarEvent * inputSupprEvent(calendarEvent * calendar)`
 - Purpose: Handles the user input for deleting an event from the calendar.
 - Arguments: A pointer to the calendar (`calendarEvent * calendar`).
 - Return type: `calendarEvent *` - Returns a pointer to the updated calendar.
6. `char * inputCalendarName()`
 - Purpose: Handles the user input for naming a calendar.
 - Arguments: None.
 - Return type: `char *` - Returns a string representing the name of the calendar.