

Family Scheduling App: FamilyTime

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Prototype

1. Create Events

1.1 Description of task

Clicking on the large plus button in the bottom right corner on any view of the calendar will bring up the create event activity. Here, the user enters a title, date, and time for the event they wish to create, note that these fields are mandatory. Additionally, the user can also use a checkbox to specify an all-day event which will auto-populate the start time to 12:00 am and end time to 11:59 pm (note that these times become immutable until the all-day checkbox is unchecked). An event defaults to never repeating and the user can then choose if the event repeats on a daily/weekly/monthly/yearly basis and must specify how many times the event will repeat. The user may specify a location, colour and notes for the event. The event will be added to that user's calendar by tapping on the confirm button. If a user wishes to exit the create event process, they can tap on the cancel button and they will return to their calendar.

1.2 Applied Design Principles

- 1) Visibility
 - a) **Creating an event:** The big plus button (which is consistently visible through all calendar views) makes the create event task more visible and thus more frequently used by the user.
- 2) Constraints
 - a) **Picking event date:** by having the user select dates for their event using a calendar dialog box, this will constrain the users to always entering a valid start time. Additionally, by providing a default time for all events upon entering the create event form, users are constrained to always having a start/end time, even if they don't select it themselves.
 - b) **Picking event time:** The user is restricted to input the time in HH:MM format with an option to choose pm/am- there are default values set in place to limit the user error. If a user inputs an invalid time (at any given time), they are notified and prompted to enter a valid time via a toast. Users must enter valid times to create an event.
 - c) **Deleting an event:** The user is unable to delete an event that has yet to be created, thus this button has been grayed out during the create event process.
- 3) Consistency
 - a) **Page layout:** The user will be presented with the same screen layout to create, edit or delete an event. This will decrease the learnability required by the user and increase the user's memorability of button locations.
- 4) Simplicity
 - a) **Picking event date:** By using a calendar dialog it is simple for the user to select a date as they are already familiar with a calendar layout from our month view in our app and other calendar layouts in the real-world
 - b) **Simple Design/Layout:** The recurring event feature and the colour features are "optional" additional feature. By leaving these fields as optional, we are allowing the user to keep things very simple, minimal and while maintaining functionality.

- c) **Event default values:** If the user was on the "Day View" for the present day, the default values for the event date/time will be the present date at which the user is interacting with the create event activity and the time is set to be the next closest hour to user's present time and the end hour is an hour after that. However if the user creates an event from a day that is not the present day, the event will go from 10:00 am to 11:00 am as a default. The user can change these defaults at anytime by interacting with time fields.
- 5) Matching
 - a) **Selecting a colour:** The button to select a colour reads "Change" with a dynamic background colour (i.e if user selects the colour blue, the button's background will match to that colour). Once the user taps on the button, they will presented with a variety of colour options. Once a colour has been selected the user is automatically returned the create event form and the background of the change-colour button will change to the colour that was selected by the user.
- 6) Minimizing memory load
 - a) **Optimization:** The nature of this app is to reduce the user's memory load. We have established this by using a layout that is most common among calendar apps and also keeping the options simple. Our app prioritizes recognition over recall.
- 7) Diagnose/Recover errors
 - a) **Event title:** User must give their event a title. If this fields value is empty when they click "Confirm" to create the event, the user will be presented with a toast message to fix this error prior to creation of the event and it appearing in the their calendar.
 - b) **Valid Input for start/end time:** User must input the starting and end time of their event in the form HH:MM and specifying am/pm using the spinner. The user can not create an event with an end time before the start time. The input will be validated: the start time will always be before the end time. If the input violets this rule then the user will be presented with a toast to fix this error. The app has been configured to accept single digit value as a starting time ie. 1:00 pm and not 01:00 pm. User will be presented with a toast message to fix this error prior creating the event.
 - c) **Recurring event validation:** User can not create a recurring event (i.e. specify that an event will repeat once a week) but then set the number of times the event repeats to 0. if the value is set to 0 since this would imply that the event is not recurring. User will be presented with a toast message to fix this error and the recurring event dialog will remain open until they input a valid recurring event info.
- 8) Control and freedom
 - a) **Deleting an event:** A delete button allows the user to delete an existing event.
 - b) **Modifying an event:** A cancel button allows the user to modify an event however if they change their mind regarding modifying it, they can simply press the cancel button to revert any changes they did.
- 9) Flexibility
 - a) **Event info:** User does not need need to fill out all the fields to create an event. The only mandatory fields that need to be set are the event's title, start/end time and date. User has the flexibility to make their event as detailed or as general as they would like.
- 10) Provide Help
 - a) **Error Handling:** Through the use of toasts, helpful instructions are given to the user to help them navigate the app and provide help when they make a mistake.

1.3 Screenshots

The screenshots of this feature can be found in the screenshots folder with the names: CreateEvent1.png, CreateEvent2.png, CreateEvent3.png, CreateEvent4.png and CreateEvent5.png

2. Different views of calendar (Day, Week, Month)

2.1 Description of task

Each of the three views allows for the user to better understand their upcoming and past commitments. The user can navigate through these views from any view.

2.2 Applied Design Principles

- 1) Visibility
 - a) **Visible Information:** Scrolling on any view does not cause the buttons or the text displaying the day/week you currently have selected to disappear. These important features (previous|next day/week and text displaying selected date) are always visible for the user, allowing them to be used more often.
- 2) Feedback
 - a) **Date Selected:** The user will receive feedback on which day they selected on the Month's view through the form of toasts in a language that is familiar to all users such as parents and young children (avoids programming jargon)
- 3) Mapping
 - a) **Previous|Next Day/Week Buttons:** The user will be able to navigate to the previous or next day/week by tapping the blue arrow buttons. The location of these buttons are crucial as they'll be used more frequently by users navigating through days/week.
 - b) **Plus Button:** The create new event button has been placed at a location where it does not obstruct any other features and it can be easily tapped by a user's thumb while comfortably holding their phone.
- 4) Consistency
 - a) **Start of the week:** Both the month and week view have Sunday as the first day of the week - keeping it consistent throughout the app.
- 5) Affordance
 - a) **Plus Button:** This big plus button gives an obvious clue to the user that that button is meant for creating an event.
- 6) Simplicity
 - a) **Simple Navigation:** The user will be able to switch between day, week and month view by simply tapping a button location at the top.
 - b) **Bolded Button:** The button of the current view is bolded to reinforce to the user where they are located within the app.
- 7) Matching
 - a) **Relevant Icons:** The user is presented with meaningful icons that connect to real world applications such as the button to overlay schedules (located on top right) or add an event using the big plus button (located on bottom right).
 - b) **Previous|Next Day/Week Buttons:** The users will be able to utilize their intuition that the left button will take the user "back" and the right button takes the user to the "next" day/week/month - in other words users will be able to use their existing knowledge to navigate through days/weeks/months.

- 8) Minimizing memory load
 - a) **Simple Actions:** Going from previous or next day/week or switching the view is simplistic, and intuitive, decreasing memory load required to use the application.
- 9) Diagnose/Recover errors
 - a) **Choosing Correct Date:** The user can quickly identify if they are on their intended date by looking at the bar displaying the day/week. The toast displayed on the month view additionally aids the user in making sure they selected the date they intended on selected.
- 10) Control and freedom
 - a) **Freedom of Navigation:** There are no constraints in place for the user as they navigate through the days/weeks/months of a year. By simply switching between modes they will be able to navigate to any day/week/month as they desire.
- 11) Flexibility
 - a) **Using a selected view:** The user has the flexibility of choosing their ideal way of interacting with the app and viewing their events for their needs.

2.3 Screenshots

The screenshots of this feature can be found in the screenshots folder with the names: , dayView.png, weekView.png and monthView.png

3. Overlapping two calendars

3.1 Description of task

A key feature of the FamilyTime app is comparing two or more schedules together in order to find times when the whole family can do something together. When viewing the schedule in any of the day, week, or month views, tap on the overlay button that brings up a screen containing a list of the different user schedules in that family group. Each profile on the app has a colour to identify the respective user. After selecting the desired schedules using the checkboxes in the list, the user can tap the checkmark on the button of the screen to return to the calendar which now displays all the events of the selected users schedules. All events are now coloured to indicate which schedule they belong to.

3.2 Applied Design Principles

- 1) Visibility
 - a) **Visible Button:** Scrolling on any view does not cause the overlay button to disappear. This button is always visible to the user, allowing it to be used more often.
- 2) Feedback
 - a) **Selected/Unselected Users:** The user will receive feedback on which user is visible on the calendar by the checkbox beside the user's name. This comprehensive form of feedback is used as it allows all the users (no matter what their age is) to understand if a user is selected or not.
- 3) Mapping
 - a) **Overlay Button:** The user will be able to navigate to the overlay window by tapping the blue button with an icon of two pages being overlapped. The location of this button is crucial as it will be used more frequently by users switching between overlapped events.

- b) **Checkmark Button:** The checkmark/done button has been placed at a location where it does not obstruct any "profiles" and it is accessible by most users in the most common position of the hand of a right-handed user holding their smartphone.
- 4) Consistency
 - a) **Profile Colour:** Each "profile" has a dedicated colour associated with it which is consistent with the colour representing that specific profile's events.
- 5) Affordance
 - a) **Overlay Button:** The blue button with an icon of two pages being overlapped is representing an "overlay" which gives the user a clue to the functionality of this button.
- 6) Simplicity
 - a) **Simple Navigation:** Once the user is in the overlay mode, they navigate the calendar as they normally would. As each user profile is associated with a specific colour, the overlay calendar is simple to read.
- 7) Flexibility
 - a) **View single/multiple Profile Events:** The user has the flexibility of choosing which profile events appear on the calendar. By unselecting all the profiles in the overlay tab, there will be no events on the calendar or by selecting an individual profile, they can only see that profiles' event and so on.

3.3 Screenshots

The screenshots of this feature can be found in the screenshots folder with the names: Overlay1.png and Overlay2.png.

4. Video Link

[Here is the video of a user navigating through through the app.](#)

5 Bonus Tasks - Extra Tasks Implemented

5.1 Edit Existing Event

Once a user has created an event, they are able to modify it. This can be done by clicking on the event in their calendar and this will bring up the "Create Event" activity except all fields of the "Create Event" form will be populated with the details of the existing event and the user will be free to make any changes that they want. To save these changes, the user presses the confirm button. Note that all modified events are still subject to the same validation as an event when it is being created for the first time. If the user decides that they no longer want to modify their event, they can press cancel and the user will be returned to their most previous calendar view and the event will undergo no changes. Note that changes made to a recurring event will be applied to all of its previous and future events.

5.2 Deleting Existing Event

Users will have the ability to delete any event that they create. They can do this by clicking on an existing event from the day or week calendar view. This will bring up the "Create Event" form that is auto-populated with that events details. Since the user is dealing with an existing event, the "Delete Event" button will be unconstrained. When the user clicks on this button, the event will be deleted and removed from their calendar and they will be redirected back to their most previous calendar view. Note that upon deletion of an event that is recurring it will delete all previous and future events.

6 Design Fixes

The following design fixes were implemented based on feedback from the Heuristic Evaluations:

- ✓ The date that the "Create Event" form will populate with when the user opens the form will no longer be only the present day, it will consider which date or week the user was viewing when they clicked on "Create Event" button.
- ✓ In the "Create Event" form, the confirm button is now green and the cancel button is now red.

7 Summary Heuristic Evaluation

Create Events

No.	Problems Identified	Heuristic	Severity	Description
1	After creating an event, the app does not know take the user to the day/date that the event was created	Help users recognize, diagnose...	2	It's be efficient to have the date/page change to the date of the added event for easier use of the app
2	Lack of simple design for buttons in create event	Aesthetic and minimalist design	1	The confirm button's background should be green, delete event's background should be red and cancel should remain grey - this will allow for easier identification
3	Lack of access between user levels	User control and freedom	2	Parents should be able to modify children's events however children can not modify parents' events. Parents should also be able to create an event for children

Different views of calendar (Day, Week, Month)

No.	Problems Identified	Heuristic	Severity	Description
1	Can not swipe to change day	Flexibility and efficiency of use	1	There should be an option to allow user to swipe right or left the change the day
2	Unpleasing event tiles	Aesthetic and minimalist design	1	All event titles are presented as caps - which is not as welcoming as lower case text
3	Viewing an event using Month's view	User control and freedom Math between system...	3	Allow user to click on date on calendar then view the events on that date.

Overlapping two calendars

No.	Problems Identified	Heuristic	Severity	Description
1	Issue with visibility of events	Visibility of system status	3	Some events over lap and can cause an event to be lost under multiple other events. user can not edit an event which is buried under multiple other events
2	Could not change family member's colour	User control and freedom	1	After pressing the overlay button, there is no option to change what colour the dad's or mom's event show i.e freedom of changing colours of a profile