



User Manual



TimeUse⁺

User Manual

Welcome to our user manual. It is structured in two main sections: app functionality and usage, and technical aspects (including how to download the app, register, and log in). Please navigate to the section you are interested in.

Thank you for your participation. Your contribution is essential for the study's success!

Further questions? See our [FAQs](#) or send us an email at: timeuse@ethz.ch

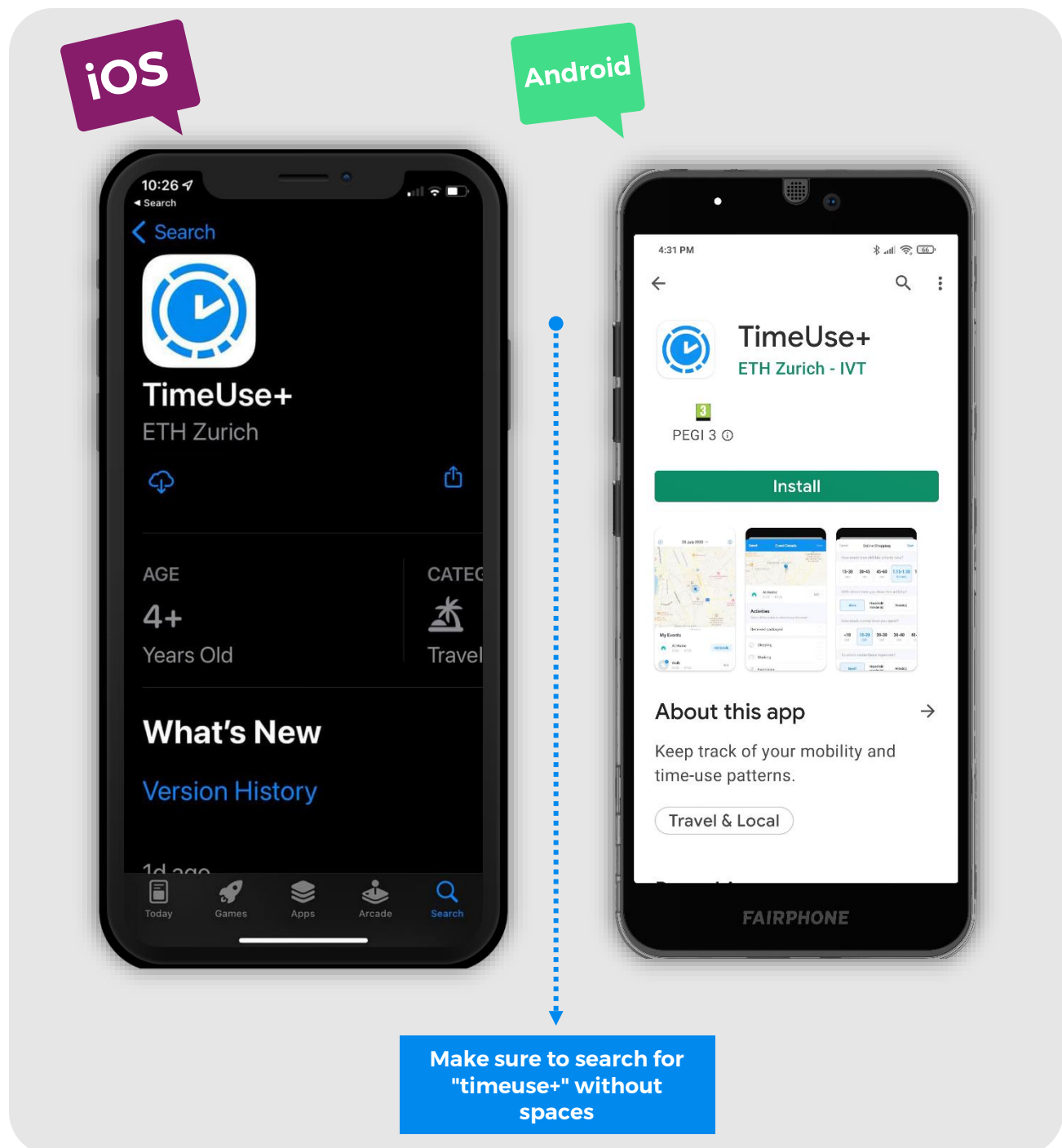
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1. DOWNLOAD, REGISTRATION, AND LOGIN

1.1. Download and installation

To install the app on your smartphone, [click here for Android](#) / [here for iPhone](#). You can also search for “**TimeUse+**” in the App Store / Play store and download the app that has our official icon and the developer name “ETH Zurich – IVT”. Select the app and press the button to install. After having installed the app, you can register or log in.



1.2. Registration

To access the app, you will need to create an account. Once your account is created, you will be able to log in.

Creating an account is very simple. Open the app and click on "Get Started" to create an account. Then, enter:

- Your email address
- A password of your choice (minimum 6 characters)
- The registration code printed on the invitation letter you received in the mail

Are you having problems activating your account? Check if the answers to your questions are included in the [FAQs](#) or [write us an E-mail](#).

The registration code


You will find the registration code on the invitation letter you received from IVT by mail. Please keep this letter and do not throw it away.

The registration code serves as a partly anonymized link between collected data and study participants. The researchers directly involved in the study can link participants to their registration code, but this is not possible for third parties. This partial anonymization makes it possible for the study to link responses from the surveys with the data from the smartphone tracking, which would not be possible with complete anonymization. You can find more about the data privacy conditions [here](#).

1.3. Forgot password

If you already have an account but forgot your password, select the option "Reset it here" on the screen and follow the instructions.

1.4. Log out

It is possible to log out from the app (go to Home > Settings  > Log Out). However, we encourage you to remain logged in during the time you are actively participating in the study. Once your days of participation conclude, you can log out.

For further support regarding registration, activation, and logging in please check the [FAQ](#) or contact us anytime by e-mail at timeuse@ethz.ch

Same for
iOS and
Android

First steps

1

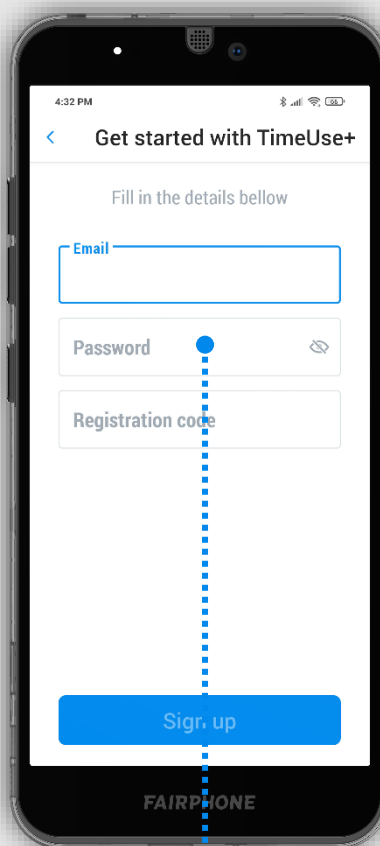
Open the app

2

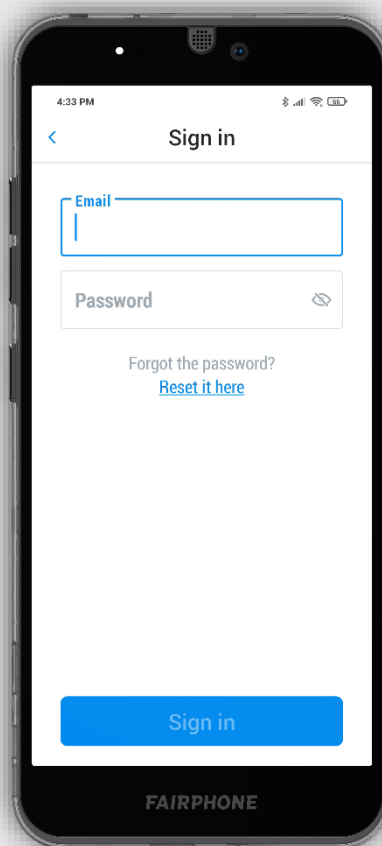
Register

or

Sign in



Find the
registration code in
your invitation letter



2.SETTINGS

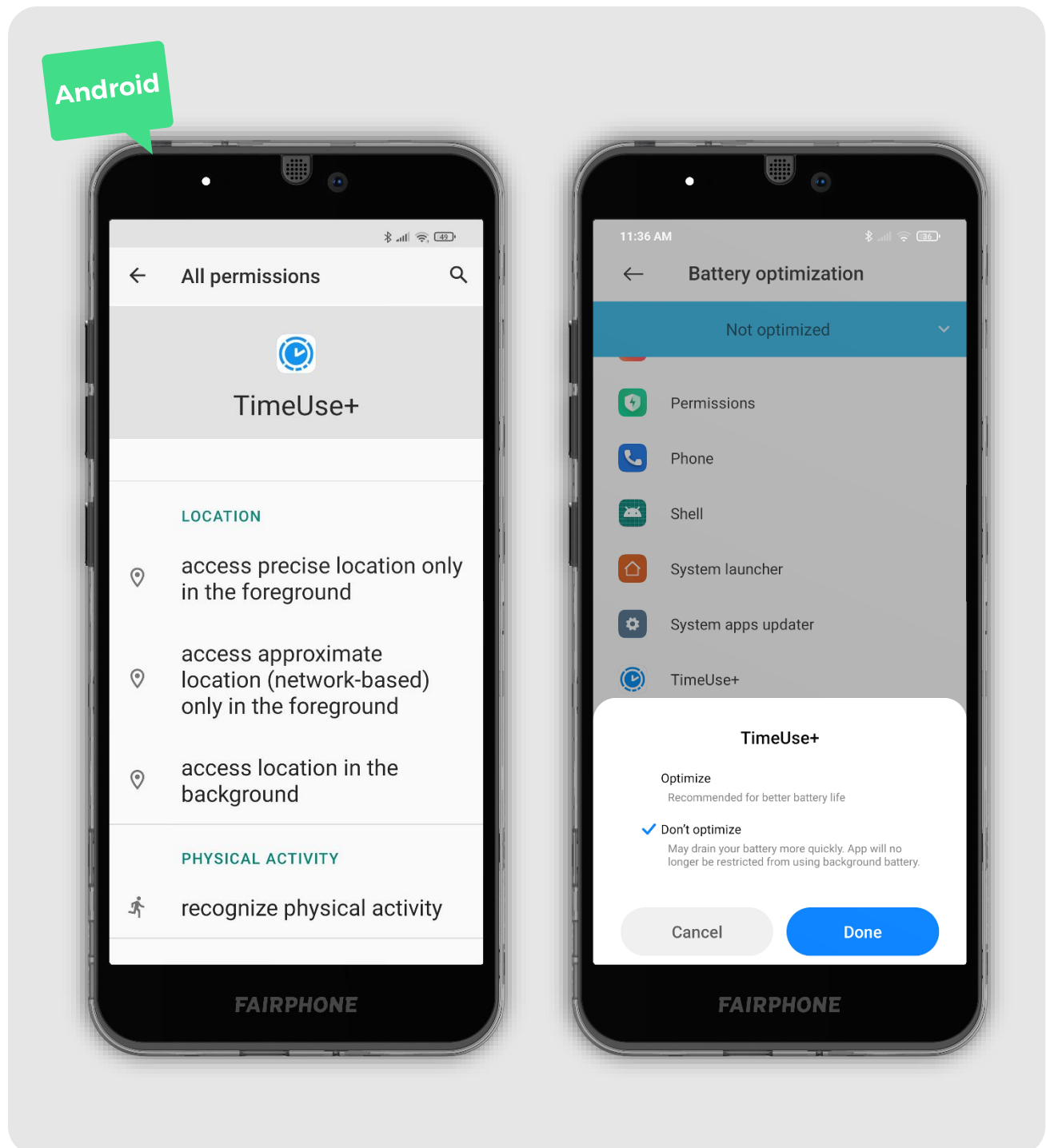
For the app to function properly, it is crucial that you select the correct permission settings on your device. The app requires access to GPS signals as well as to motion detection features. On Android devices, you must additionally ensure that the app can run in the background (without being actively open) and disable the battery optimization.

The process of allowing the app to access these required data depends on the device model and version of the operating system you are using. Nevertheless, the following characteristics are required to for successful participation in our study:

Location GPS	Android Please set the following app permissions in your smartphone's settings: Allow to retrieve device location: Always This means that the app can retrieve GPS data even if you do not have the app actively open. This is the only way to continuously record your position.	iPhone Your iPhone will ask you for permission to use location data. You will most likely be asked after installation. Then, please select: Allow once After some time, your iPhone will ask again you for permission (for security reasons). Please select: Always allow
Motion detection	These settings are sometimes already set by the app. Please go to your settings and check if access has been granted. If not, please grant access	These settings are sometimes already set by the app. Please go to your settings and check if access has been granted. If not, please grant access. Go to: Settings > Privacy > Motion & Fitness > enable for TimeUse+
Battery optimization *	The settings are sometimes already set by the app. Please make sure battery optimization is disabled	Not applicable for iOS
Background settings	Please allow the app to use background applications and activities	Not applicable for iOS



* The effect of the app on your smartphone's battery performance heavily depends on the exact phone model and operating system. This is out of our control. Recent developments in battery technology have however extended the battery life of smartphones considerably. We suggest charging your phone while at home or at work instead of turning your device off. Please avoid flight mode.

Making sure to have the correct settings on your Android smartphone is key. If some of the permissions are denied, the app will not work at all. Depending on the model of your phone, the permissions may look different.



3.APP OVERVIEW

3.1. Home Screen / Event Screen

The Home Screen is shown when you open the TimeUse+ app and are logged in. To learn how to log in/sign in click [here](#). From there, you can navigate to the [Statistics](#) , [Calendar](#), and [Settings](#)  sections.

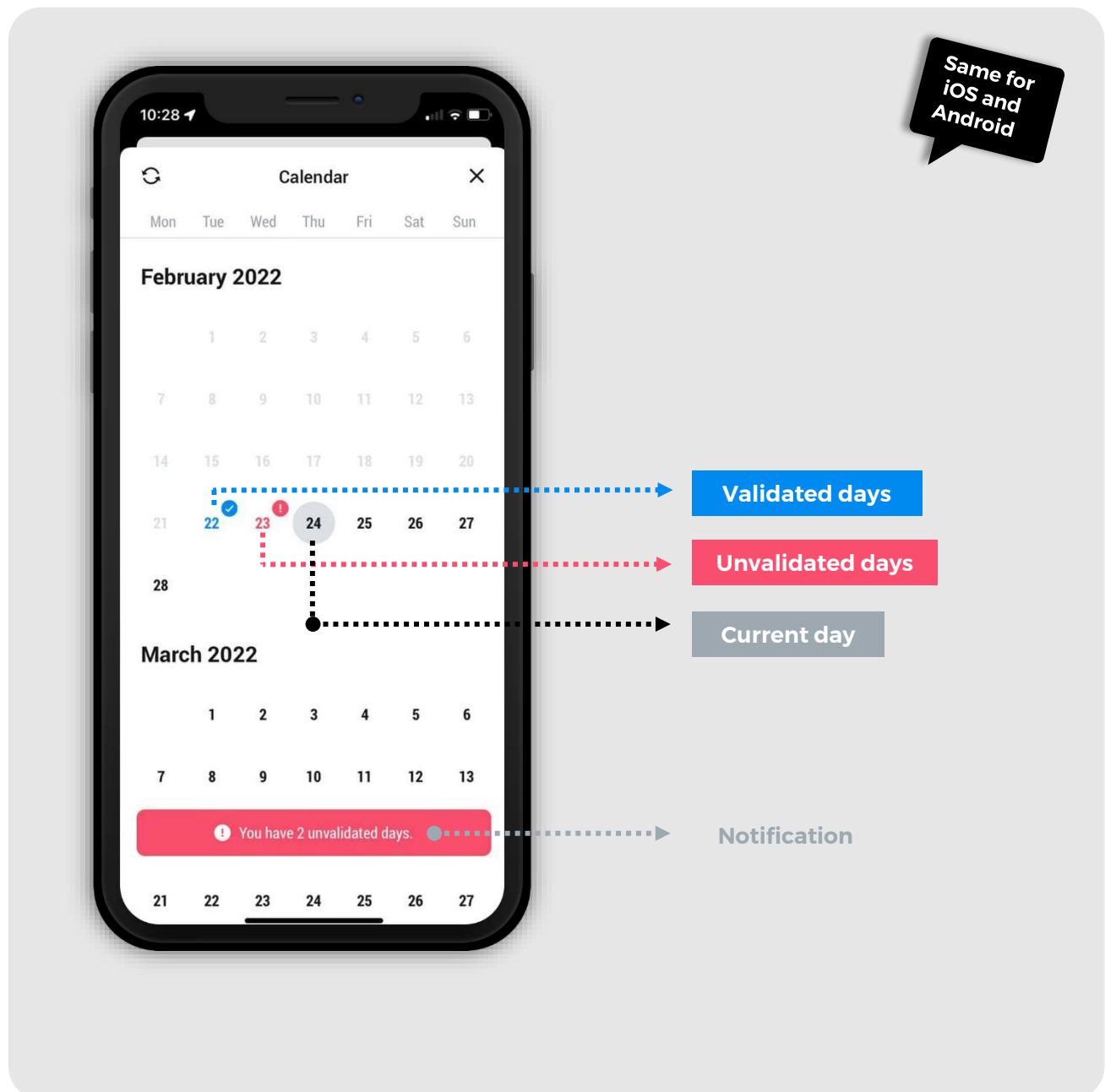
Your Home Screen displays a map of a certain day with a list of events that occurred on that day. Your current location is indicated with a blue dot. Your recorded events or tracks of the respective day are shown in different colors. The map can be centered using the location icon (Android only), and you can zoom in and out by dragging/swiping. All events (tracks and stays) are shown in a list on the bottom of the screen. You can enlarge this list by dragging it upwards. The list shows the events in chronological order, and you can edit, delete, and validate each event individually.

It is important that you check and validate each individual event. To do so, you need to specify the activities you have been performing for each event. Detailed information about the validation process can be found [here](#).



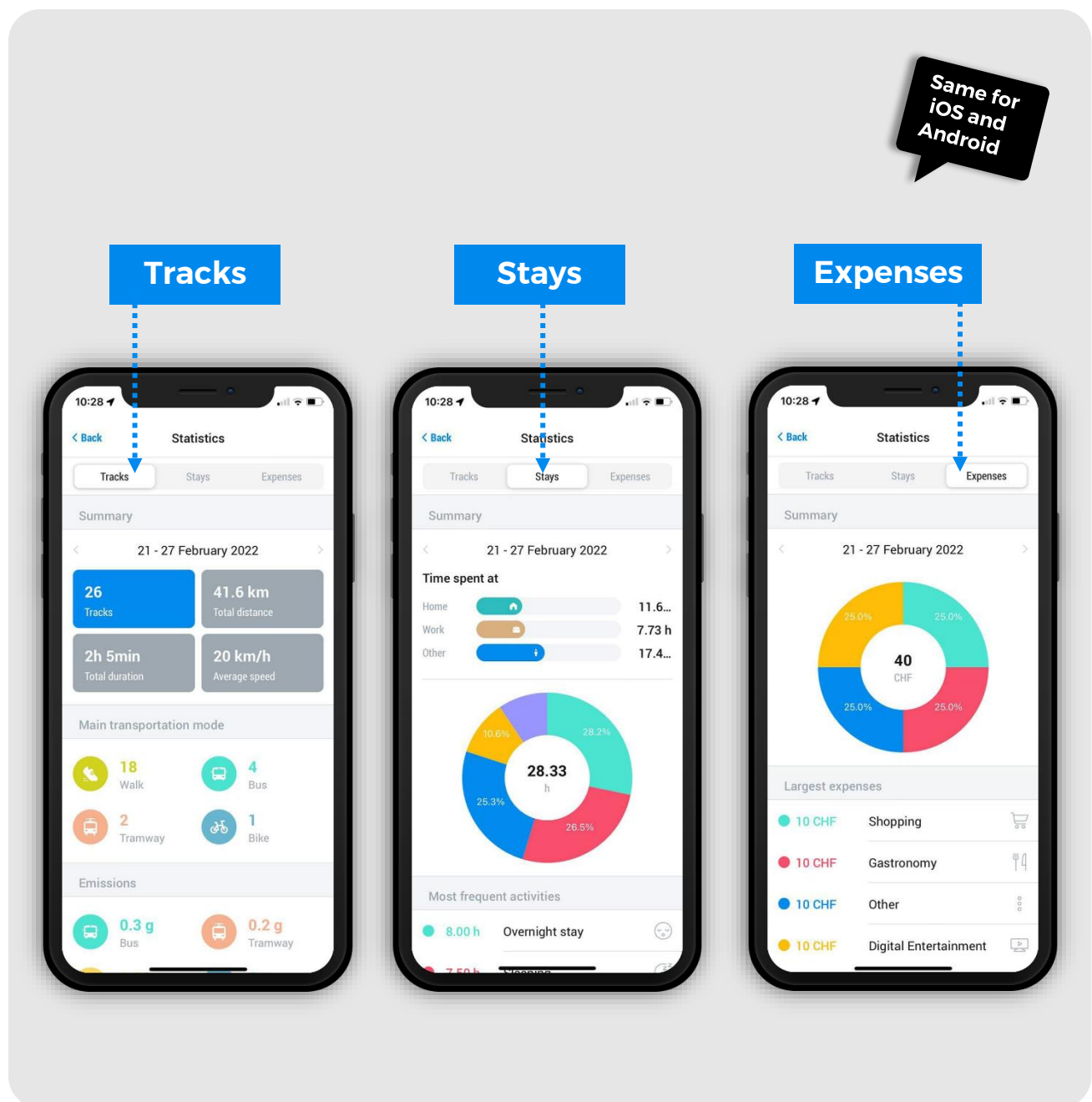
3.2. Calendar Screen

The calendar allows you to check and [validate](#) all tracked days. The Calendar Screen can be used to navigate between different days within your diary so that you may validate them. The current day is highlighted with a gray circle. The previous days are highlighted either in red, indicating that the day has not yet been validated, or blue if it already has been. The bottom of the Calendar Screen displays the total number of days that still need to be validated (i.e., are unvalidated).



3.3. Statistics Screen

The Statistics Screen provides you with an automated weekly summary of your recorded events. The first section describes your main modes of transport with key indication metrics. The second section shows your time use behavior by location and activity type. The third section provides an overview about all recorded expenses by activity type. You will only see statistics for events that you have validated.



3.4. Settings

The Settings Screen includes the following settings:

- Data transfer over WIFI only

You can use this feature to save on your mobile data usage when you are not connected to WIFI. We recommend activating it to save battery. Note that your data will only load when you are connected to Wi-Fi if this is activated.

- FAQ

You can directly access the FAQs within the app.

- Terms & conditions and our privacy policy

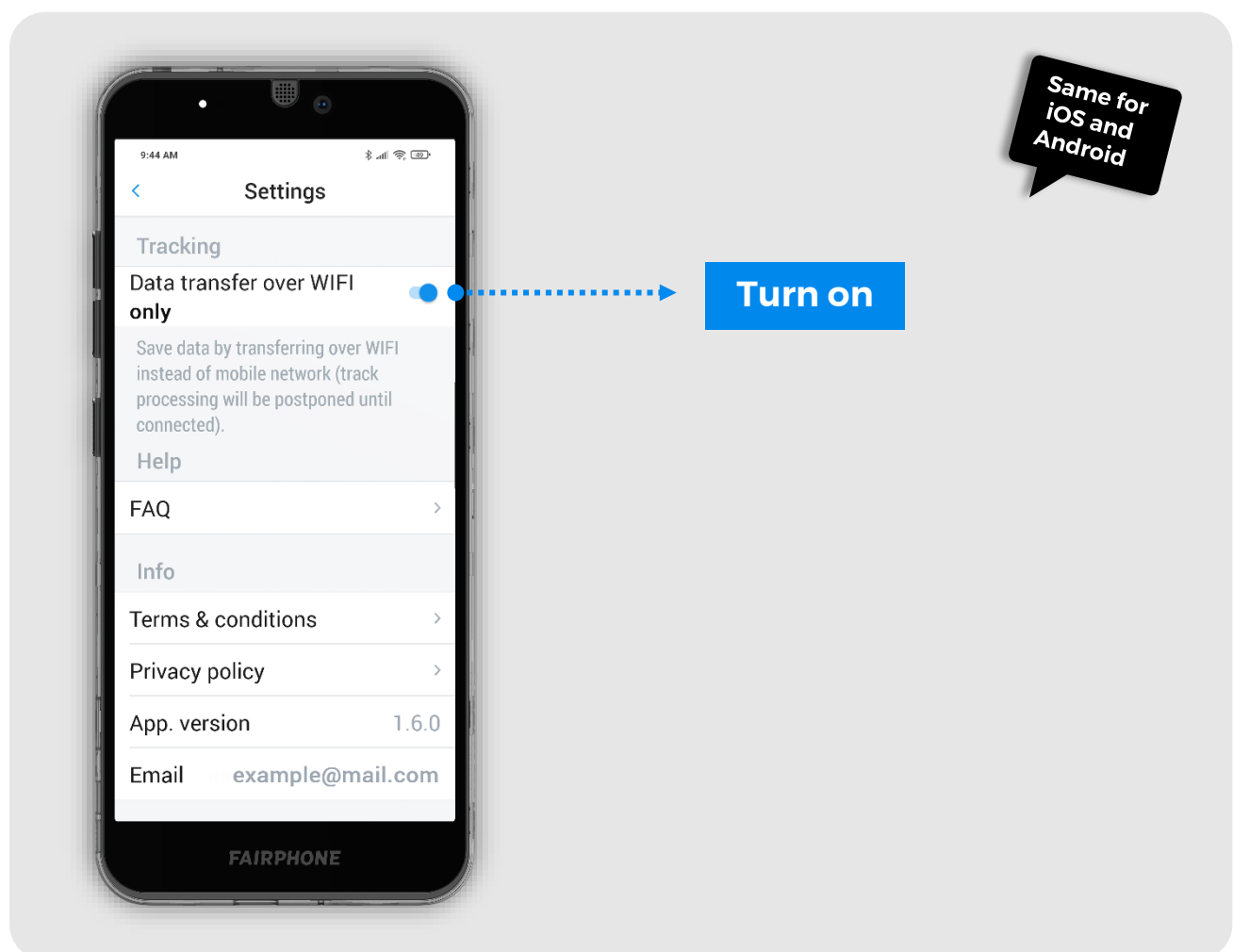
As on our webpage.

- Change password

Please follow the instructions to do so.

- Log out

For the purpose of this study, you must stay logged in throughout the entire required tracking period.



4. VALIDATION

A central aspect of your study participation is the validation of your data. With this, you can confirm if our algorithm correctly identified your daily events. It is important that you try to recapitulate your day as realistically as possible within the app. This is the only way that we can improve our algorithm and use accurate data for our research purposes. Please continue reading this section to know more about the validation process.

What should I validate?

This is the
time use
survey

The **Events List** that the app will show you consists of:

Tracks

and the activities you have done while on the go

Stays

you have been and the activities you have done at these locations

How should I validate?

Access a day in the calendar. Then the Events List for that day will be displayed.

In the Events List, click on "**Add details**" for a specific event.



You should first check the full list of events (tracks and stays) to ensure that all trips (tracks) and places (stays) have been correctly identified and recorded by the app. **Check the indicated start/end times and durations of the events.** It may happen that:

- Events appear that have not occurred
e.g. the app records a walking trip within your house
- Events that belong together are detected separately
e.g. the app records a stay event while you're in your car waiting at a red light

In both cases you can use the **“event didn't happen/belongs to the previous event”** option on the Event Detail Screen. The event will be merged with the previous event and the list of events will be adapted accordingly. Apart from these two cases, it may still happen that:

- Events are missing
e.g. no GPS signal, device in flight mode
- Events appear as “untracked”
e.g. no GPS signal, device in flight mode

Both cases can be ignored. To validate a certain day, you must validate each individual event included in the day's event list. For untracked events, you must simply choose the event type that reflects where you were during that unrecorded time. Validated days appear in blue in the calendar. To validate an event, you must allocate to whole duration of that event to at least one activity. Validated events appear in blue in the event list.



After merging/deleting events, it can still happen that the timeline of a certain day has inaccurate start/end times and duration, or that events are missing. This is okay. However, we kindly ask you to replicate your day as realistically as possible within the app.




In certain cases, our algorithm requires up to one full day to process your GPS data and return it to a list of events to the app. If no events appear in your app for several days during which you moved, please contact us [here](#) or read carefully the [FAQs](#).

4.1. Types of events























For each event (tracks and stays), a certain type can be defined. For stay events this is the type of location. For track events, it is the mode of transport.

The Event List shows you a full list of types to choose from. Our algorithm uses your location and previously validation information along with speeds if you are in motion to try to predict the type of each event. If the algorithm fails to correctly do so, please correct the event type in the Event Details Screen. Following types are available:

4.1.1. Stays

	At home	Where you live. Other homes (from family members or partners) where you frequently stay at should be marked "At home" as well
	At work	Where you work
	Other	Stores (grocery, pharmacy, clothes, restaurants). Public spaces such as parks, streets. Friends' homes. Hotels, vacation stays

4.1.2. Tracks

	Car (driver)		Walk
	Car (passenger)		Bike
	Carsharing		Bike-sharing
	Taxi/Uber		E-Bike
	Motorcycle		E-Bike-sharing
	Electric kick scooter		Airplane
	Bus		Boat
	Tram		Coach
	Regional train		Cable car
	Subway		Ski
	Train		Other

4.2. Types of activities

Independent of an event being a stay or a track, you should provide at least one activity for each event for validation. In certain cases, the app does not require information about activities if that event is very short (1 to 5 minutes). Those will automatically be shown as validated in the Events List.

The list of possible events depends on the type of event and changes dynamically. You can for instance not select sleeping while driving a car as driver. The full list is shown in the [Glossary](#). For each activity you need to at least specify the duration. Depending on the type of activity, additional questions regarding the people you were with at that moment and the expenses which occurred during the selected activities.



Every activity requires the duration information. **The sum of all activities from one event cannot exceed the duration of that respective event.** An event will only validate if the full event time has been allocated to activities.

4.2.1. Duration

This information must be provided for each activity. An activity cannot last longer than its corresponding event. The sum of all activity durations of one event must be equal to the event duration itself.

If you have already entered the duration of an activity 1, the app will automatically show you the remaining amount of time of that event if you want to add an activity 2. If you chose the maximum amount of time for activity 1, the app will throw an error when you try to add activity 2.

4.2.2. Household members, partners, friends with whom time is spent

Information about these will be asked for relevant activities (e.g., shopping). These data allow us better to understand your mobility behavior, as your social networks (friends, family, etc.) have a major influence on how you personally move around.

4.2.3. Expenses

Information about these will be asked for relevant activities (e.g., shopping). Even if this information does not seem to be related to your travel behavior, it is essential for the economic modeling of transport.

First, please provide the approximate amount of a certain expense which occurred during an activity. Secondly, the expense must be classified regarding its purpose:

–For me / For the household

If you live in a household in which you have shared expenses (e.g., family or shared flat), please select «for the household» for all shared expenses.

–Daily needs / Long-term needs

Daily needs include consumer spending on food, beverages, cafes, restaurants, movie tickets, concerts, sports, newspapers, clothing, shoes, accessories, etc.

Long-term needs include but are not limited to, the purchase of computers, laptops, smartphones, cameras, sports equipment and gear, haircuts and wellness services, vacations, furniture, tuition, newspaper subscriptions, and vehicle rentals.

–Required / Not required

Required expenses are typically the goods or services associated with physical needs or maintenance: Food, taxes, housing, furniture, health, education, insurance, mobility and transportation, communications, and other services that are not leisure oriented.

Not required expenses are those associated with leisure activities, entertainment, recreation and culture, vacations (including trips, lodging and restaurants), electronics, clothing.

These categories will only be presented to you for relevant activities, and you can rapidly select them as you can see on the screenshot below:

The screenshot shows the 'Shopping' activity screen in the TimeUse+ app. The interface includes a 'Cancel' button at the top left and a 'Save' button at the top right. The main content area has the following sections:

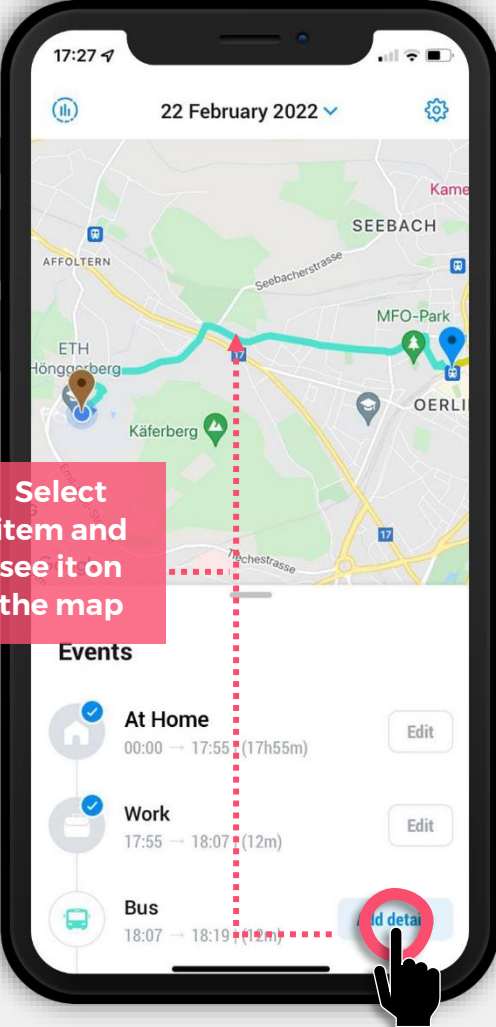
- How much time did you spend on this activity?**: A slider set to '10min' with '0min' and '10min' markers. A blue arrow points from this section to a box labeled 'Time spent'.
- Were you with anyone?**: Three buttons: 'Alone', 'Household member(s)', and 'Friend(s)'. A blue arrow points from this section to a box labeled 'Who you were with'.
- How much money did you spend?**: A slider set to '20CHF' with 'Price range' text below it. A blue arrow points from this section to a box labeled 'Expenses'.
- These expenses were...**: A section containing six buttons arranged in a 3x2 grid: 'for me', 'for the household', 'daily needs', 'long-term', 'required', and 'not required'. A red dashed box highlights this entire section, and a red arrow points from it to a box labeled 'Purpose'.

A black speech bubble in the top right corner of the app interface states: 'Same for iOS and Android'.

A. Event validation: Track example

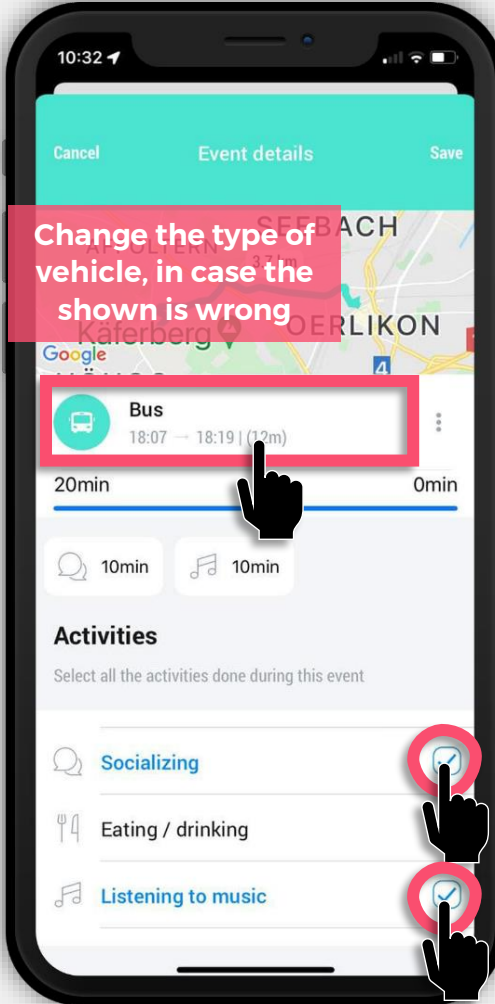
1

Select a stay in the "Events" and press the "Details" button.



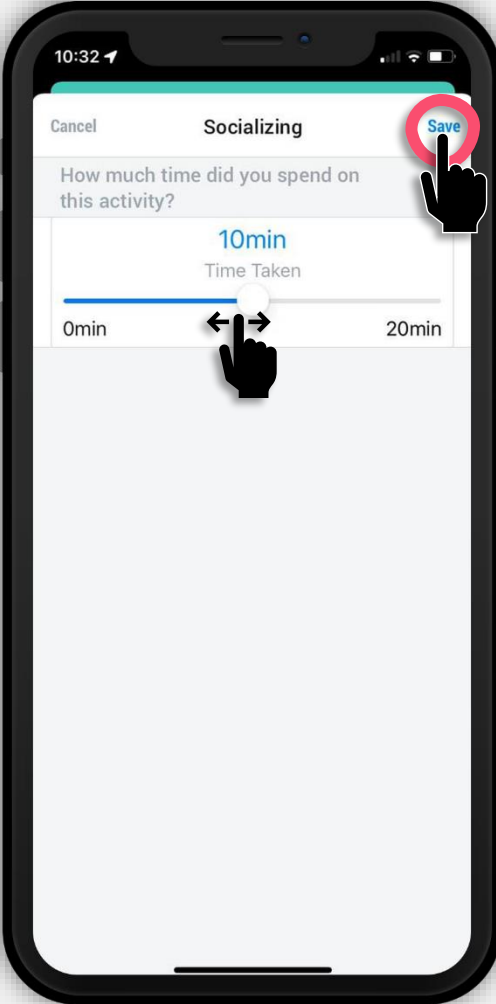
2

First, please change the mode of transport if the one displayed is incorrect. Select a field on the right side e.g. "Nothing else" to specify the details of all activities performed. The next screen will be displayed automatically.



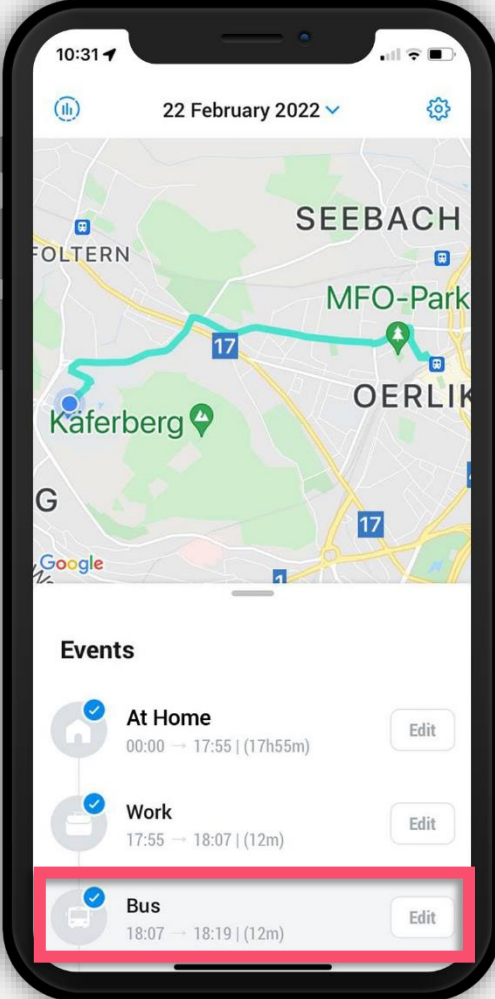
3

Always select how much time the event lasted. Depending on the activity, there will be other questions regarding your household members/partners/friends or possible expenses incurred during the activity. Save the information in the upper on the right.



4

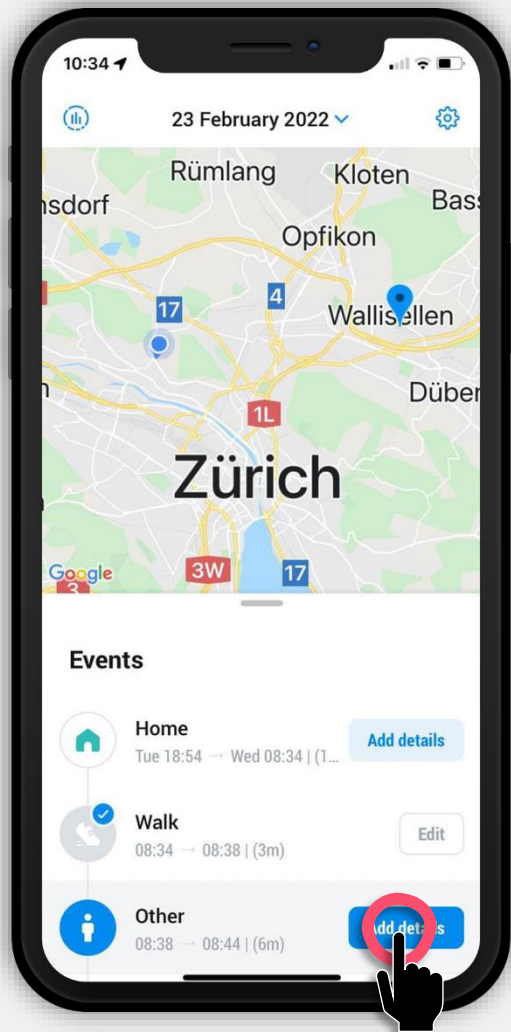
The box will now be visible with a blue check mark. Select all the other activities performed and save to validate this day successfully. If you do not see the blue check mark after entering the details, please check if some information is missing.



B. Event validation: Stay example

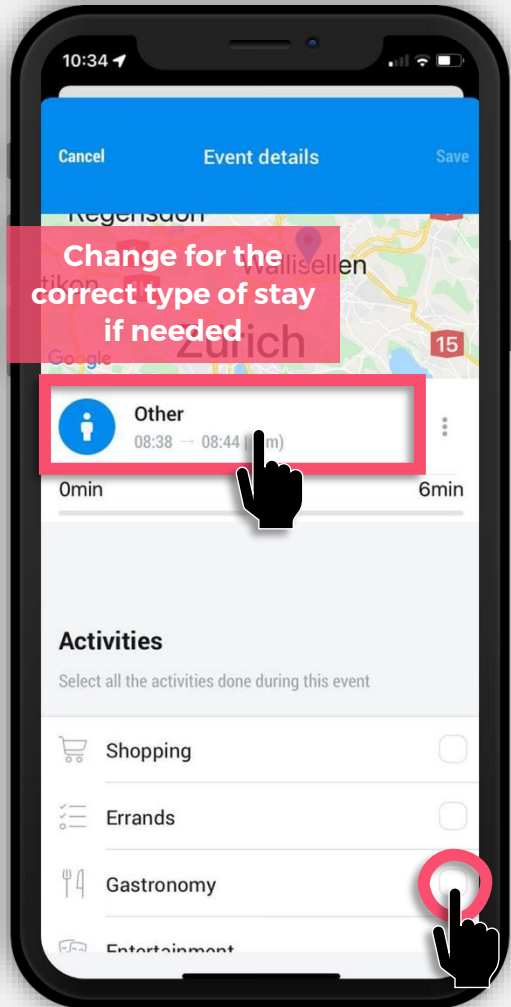
1

Select a stay in the "Events" and press the "Details" button.



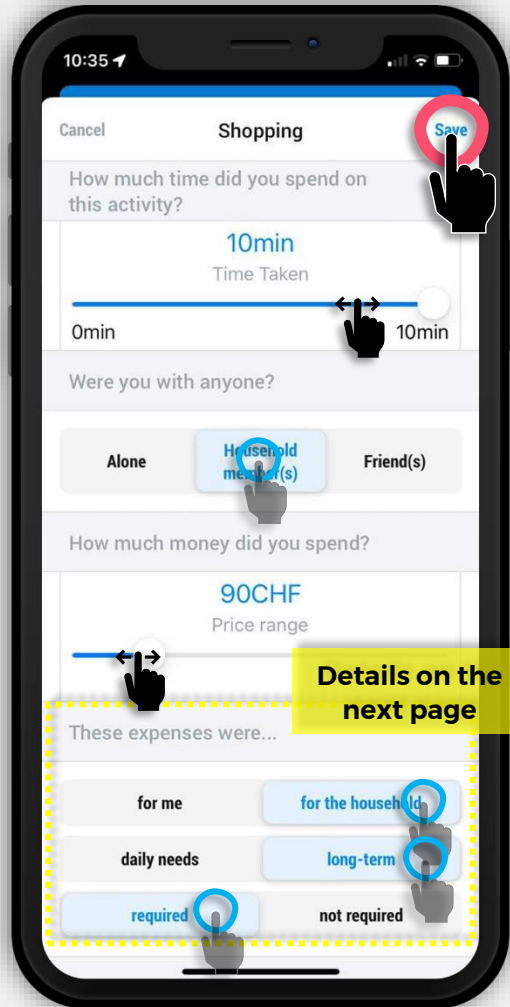
2

Select a field on the right side e.g. "Shopping" to specify the details of this activity. The next screen will be displayed automatically.



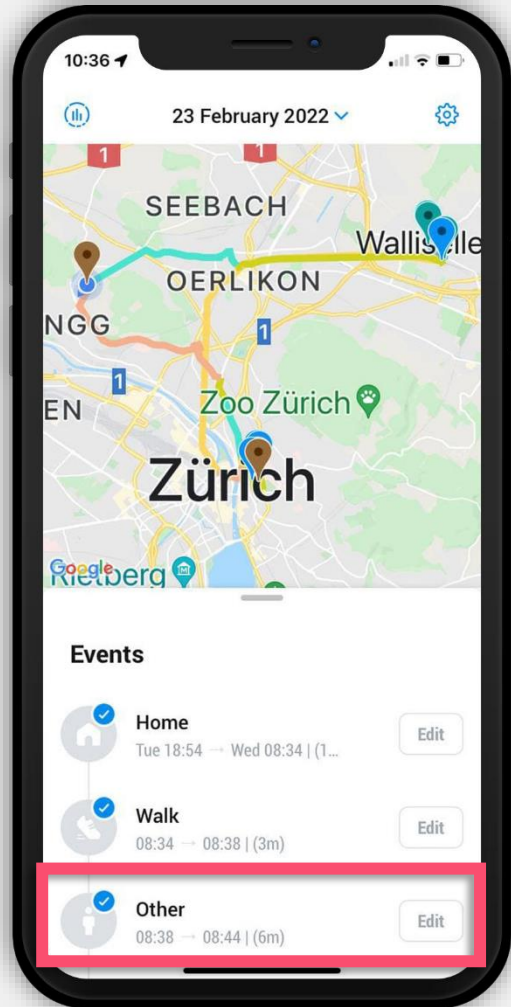
3

Select how much time the event lasted, with whom you did the activity, the approximate output, and the purpose simply by clicking. Save the information in the upper right corner.



4

The box will now be visible with a blue check mark. Select all the other activities performed and save to validate this tag successfully. Save the information at the top right.



C. Event validation: Expenses

How much money did you spend?

Use the slider to select the amount of money you spent for a certain activity during a given event. Do not be afraid! You don't have to spend a lot of time on accuracy. Please give an estimate and click on the respective button.

What was the purpose of the expenditure?

Select an option for each row or category. Depending on the output, you should adjust the different combination options. Please refer to the following examples:

Example 1

Food for one person in a shared apartment: For me | Daily needs | Required

Cleaning products for the shared apartment: For the household | Daily needs | Required

why?

In the first option, only one person benefits from the food. Food is a basic need (energy for the body), therefore **"Required"**. In the second case, cleaning is important for the general well-being and such products are regularly shared in a flat.

Example 2

Purchases for the family dinner: For the household | Daily needs | Required

Skiing vacation for the family one week: For the household | Long-term | Not required

why?

Vacation is not **"Required"** because it is a leisure-related activity. It belongs to the category **"Long-term"** because vacations are taken periodically, not on an everyday basis.

Example 3

Electric car for the family: For the household | Long-term | Required

Bicycle for personal use: For me | Long-term | Required

why?

Any means of transportation is considered necessary for the development of our basic activities, but the purchase of cars or bicycles is not regularly carried out.

5. NOTIFICATIONS

We use these to inform you about the status of the study and to remind you to validate your data. You will receive notifications about location services (GPS) and other reminders.

Android smartphones are more likely than iPhones to display notifications about tracking activity and the use of GPS to determine location.




When closed, the app will have a red circle with an indication of the number of days that still require validation.

App Symbol

The activity validation signal is displayed as a red circle in the app icon.






6.GLOSSARY

GPS tracking	Global Positioning System (GPS) data that is used to determine location and movement. Normally, modern smartphones have a built-in GPS device that facilitates tracking.
Events	All stays and tracks that are recognized by the app.
Validation	Proofing that the tracked information is correct and providing details about activities and expenses. Visit the Validation section to learn more.
Tech use	Information and Communication Technologies: Internet, smartphones, computers, laptops, tablets, etc.
Daily needs	Daily needs include consumer spending on food, beverages, cafes, restaurants, movie tickets, concerts, sports, newspapers, clothing, shoes, accessories, etc.
Long-term needs	Long-term needs include but are not limited to, the purchase of computers, laptops, smartphones, cameras, sports equipment and gear, haircuts and wellness services, vacations, furniture, tuition, newspaper subscriptions, and vehicle rentals.
Required expenses	Required expenses are typically the goods or services associated with physical needs or maintenance: Food, taxes, housing, furniture, health, education, insurance, mobility and transportation, communications, and other services that are not leisure oriented.
Not required expenses	Not required expenses are those associated with leisure activities, entertainment, recreation and culture, vacations (including trips, lodging and restaurants), electronics, clothing. Gifts are categorized as not required expenses.
Blue checkmark 	Indicates that your data has been successfully saved
Successfully saved 	Indicates that an event (stay or track) is correctly validated.
Notification 	Notifications to remind you to validate your data.
















Stays








Periods of time spent at a fixed location.

	At home	Where you live. Other homes (from family members or partners) where you frequently stay at should be marked "At home" as well
	At work	Where you work
	Other	Stores (grocery, pharmacy, clothes, restaurants). Public spaces such as parks, streets. Friends' homes. Hotels, vacation stays

Tracks












Trip or movement to reach your next destination. Movement over a distance by a means of transport (public or private) or on foot.
















	Walk	-
	Bike	Please also select "Bike" if you have ridden inline skates or a skateboard
	Bike-sharing	Bicycle rental or public rental bicycles. Bikes do not have to be returned to their starting point (e.g., <i>Publibike</i>)
	E-Bike	Bicycle with an integrated electric motor
	E-Bike-sharing	Bicycle rental or public rental of electric bicycles
	Electric kick scooter	Small electric vehicle similar to a conventional scooter but powered by an electric motor
	Car (driver)	Driving a road vehicle to travel or transport people or goods as driver
	Car (passenger)	Driving a road vehicle to travel or transport people or goods as passenger
	Carsharing	Carsharing, typically through a digital platform with prior booking
	Taxi/Uber	-
	Motorcycle	-
	Bus	-
	Tram	-
	Regional train	-
	Train	-

	Subway	Metro or subway
	Airplane	-
	Boat	Ships, Boats, Jet skis, etc.
	Coach	Long distance travel bus
	Cable car	Typically for (ski-) tourism
	Ski	Ski, Snowboard, etc.
	Other	-

Activities

Possible actions during a stay or a track (a trip). See below for details:

	Nothing else	If you have not done anything specifically
	Working	Activity or job that requires physical and/or mental effort and earns you money
	Home Office	Performing your paid job from home
	Working	Coworking: Performing your paid job from a location other than home or office
	Shopping	Buying things from physical (built) shops
	Online shopping	Buying goods from the internet
	Gastronomy	Eating and drinking at restaurants and bars
	Eating / cooking	Consumption, preparation and cooking/baking of food and beverages in your house
	Eating / drinking	Consuming food or beverages while traveling (only shown for tracks)
	Food break	Coffee, lunch, snacks at work.
	General household work	Household work like cleaning and doing laundry. Waste separation and recycling, gardening, dish washing, setting the table, clearing table
	Socializing	Talk to someone, a planned meeting or gathering (friends for dinner or attending a party)

	Digital Entertainment	Using your mobile device, smartwatch, tablet, laptop, etc. for personal purposes e.g., chatting with family and friends, social media, reading news, articles, playing, or navigating any non-work-related app
	Hobby / Leisure	Cinema, plays, sports events, cultural activities, to amuse people. Only if the Stay type is "Other"
	Hobby / Leisure	Reading a book, newspaper, magazine, or other print material for pleasure
	Pick up / drop off	Picking up or dropping off parcels or persons (e.g., kids), ATM
	Sleeping	Sleeping, independent from the location
	Resting	Relaxing, taking a nap. Resting when you are sick
	Studying	Learning about a subject, likely as part of a university degree program. Lectures, homework, extracurricular classes, free time study
	Self-care	Personal hygiene like taking a shower or using the toilet, getting dressed, putting on makeup, etc.
	Waiting	Allowing time to go by until the expected event (e.g. bus, medical examination) or person arrives
	Caretaking	Taking care of children (waking them up, helping them dress and clean, helping them with homework), elderly or sick people
	Digital Entertainment	Movies, TV, video games: ICT at home
	Exercising	Exercising outside or at home, doing sports, hiking
	Walking my dog	Walking with your dog
	Package pick up / drop	Collection of parcels or mail
	Other	None of the activities listed above

7. TERMS & CONDITIONS

Access the [Data Privacy Notice](#) and the [Consent form](#).

8. CONTACT & HELP

We will gladly answer all kinds of questions you may have about the use of the app, the objective of the study, etc. Please first take a look at the study's [FAQs](#) to find answers to your questions. Alternatively, send us an email at timeuse@ethz.ch

9. ABOUT THE STUDY

Our mobility is constantly evolving. Changing time use and consumption patterns, technological improvements, population, and urban growth, as well as sustainability issues require us to adapt our transport systems and traffic planning. Participate in our study and contribute to the design of future traffic systems.

TimeUse+ is the latest study at ETH Zurich's Institute for Transport Planning and Systems (IVT). We need your support to be able to shed light on these questions.

Our TimeUse+ app includes an integrated time-use and travel diary to give you an overview of all the places you visit in a day and how you travel between them. Our app uses your location data and artificial intelligence to automatically generate a travel diary that you can enrich with additional information about your time-use behavior. Your travel patterns are visualized on a map, and personalized statistics let you monitor how much time you spend traveling and doing various other activities.

By participating in our study, you will contribute to ongoing research that will shape and improve our future transport systems. Participation only by invitation from the IVT.

www.timeuse.ethz.ch