Travlendar (SmartCommute)

# Objective

* Develop a scheduler web-app with a calendar interface that computes and accounts for travel time between appointments to make sure you’re never late for an appointment.

# Requirements

Authentication System: Allow access per user to its own private environment through login authentication, and new users to register into the system.

Calendar interface: Let the user interact with a calendar interface and manage appointments (events) within it, by performing the following actions: create, edit, delete and save.

Smart Commuting: Automatically compute the travel time between appointments and warn for time overlapping.

Travel means by appointment and by day: the web app must allow the user to specify the preferred travel means, and to be weekday sensitive.

User customizable: let the user configure its workdays, predefined breaks and alert times.

Variability time between appointments: allow the user to modify on the go the event durations (optional).

# Specification

The user, by providing its name, last name, email and a password, will be able to register and create an account within the app. The system will then validate the login credentials and if successful it will connect the user into its account.

The user will have the possibility to create, edit, delete and save as many appointments as it wants. Each appointment will have the following fields: title, date, start time, end time, address and description.

The calendar interface will provide day, week, month and yearly views, and the addition of events can be accessed through any of these views. Also, a schedule view is available which lists all the events within a time period.

Moreover, a roadmap view will be available. This interface shows the city map with the day roadmap of the user: all the current day’s events will appear as nodes, and upon clicking given nodes the appointment details will be shown. Additionally, the travel trajectory between appointments (nodes) will appear as calculated from the Google Maps API with the preferred transport, and by clicking on it, its details (duration, transport to be used and maximum departure time) will appear.

The travel time (duration) before mentioned will be computed and alerts will be generated whenever the maximum departure time is near. Additionally, suggests the preferred transport as main option and discards the transports disabled by the user.

Through the settings interface the user will be able to personalize its preferences, which will be the selection of the preferred transport, toggling between available transports (bike, walk, car, bus, tram, metro and train), specifying resting times (by default lunch and break times) and setting up the alerts.

# Description

In the application, each user logs into its account by entering its email and password, the system validates the login and if successful the system connects the user into its account. If not successful, the system prevents entry but allows repeated attempts. After having validated the credentials, the user is redirected to the calendar interface automatically and if the user had previously saved a configuration and events, they will automatically load.

Once the user is in the calendar interface, it will have the possibility to take four main actions: to manage/view appointments, to configure settings, to view roadmap, and to logout. Managing appointments, configuring settings and viewing the roadmap are interfaces which by clicking their link, can be toggled among each other.

The functions of viewing appointments are within the same calendar interface. The events are automatically shown in the calendar interface, where it is possible to see the monthly view as default and the user can toggle views to daily, weekly, yearly, and schedule view. Differently from the date-based views, the schedule view lists all the appointments sorted in order of how recent.

Adding an appointment can be done via clicking the “+” button, and a configuration window will appear where the user can input the title, date, start time, end time, address and description of the event. The fields of title, start time, end time and date are mandatory, and description and address are optional. Once user has finished, “cancel” and “save & exit” options are available to save the event or to discard changes.

To edit/delete any shown appointment, the user can double click the shown event in any of the interface views (except schedule view) and the same fields as the create event window will appear, showing the previous event configuration, in addition to a “delete” button.

To configure settings, the user clicks the settings tab from the calendar interface and once its redirected to the settings interface it has the possibility to modify the preferred transport, checking which transports to use (by toggling enable/disable buttons), specifying the resting times (which by default are called lunch and break times), and specifying the alerts.

Selecting the preferred transport will give priority to that type of transport, so whenever it is available once the Google maps API calculates the trajectory the roadmap interface will automatically show that given trajectory with the specified transport type. If the preferred transport is not available, it will prompt the user and ask for an alternative and show the fastest as recommended.

Enabling/disabling available transport types will force Google maps API to not show certain transports. For example, if you don’t desire to use tram and disable the option, under the scenario that your preferred transport isn’t available, even if for that travel tram is the recommended way, it will not be shown.

Specifying the resting times is a functionality that allows the user to have a daily fixed period (also configurable to any preferred days of the week) reserved to rests. Rests are considered a repetitive weekly event, and within the event period no events can be added, and travel time is not supposed to overlap that period either. By default, the resting times are named lunch time and break time. By clicking the edit rest times button the user will decide for each of the rest times their names, day periods, and which day of the week they should be active. Deselecting all days disables the resting time.

The alerts section decides how close to the maximum departure time (to the next appointment) should Smart Commute notify you. By default it is set to fifteen minutes.

The roadmap is available through the button roadmap, present in the calendar and settings interfaces. The roadmap shows by default the Google Maps API centering your location and it loads any nodes (events) and edges (travels) previously computed, if any. This functionality allows the user to view the “roadmap” of its scheduled day according to the events it created. It shows the appointments as pins in the map that are clickable. Once clicked, they show the event details. Additionally, the “edges” which are the travel distances, are computed automatically thanks to the Google Maps API and shown accordingly, with a dialog box specifying which transport type is being used, and the duration of the commuting time.

Logging out is a button available within the roadmap and calendar interfaces, and by clicking on it the user logs out, the app saves the generated data and the configuration data to the server, and it prompts back to the login site.