

TALLINN UNIVERSITY OF TECHNOLOGY

School of Information Technologies

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Time tracking webapp for amateur motorsport

Project proposal

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MSc

Tallinn 2024

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1 ANALYSYS

The goal of this project is to create a web application for organizing amateur rallies and to track time in them.

The idea of this project stems from the fact that at the moment there are no viable systems on the market that would allow accurately, and cost effectively organize and track amateur rally events. Those events have very limited budget and are primarily organized as a hobby and not for profit. Based on this, there is a need for a new system that does not use expensive timing devices and is more convenient, accurate and easier to use than the currently most common way of using stopwatches and Excel tables. There are time tracking applications, but they lack convenience and accuracy needed for motorsport events.

First, there must be a possibility to create rally events. Those events consist of different competitions, which may have different restrictions applied to them. Those restrictions can be seen as classes, but they aren't exactly that. Restrictions provide more flexibility in creating competitions.

Competitors can use different cars throughout the event but can use only one car during a competition.

Competitors and their car will be assigned to a heat. Heat is like a subsection of a competition. There's a need for heats because not all competitors would fit on a track at the same time.

There are many different types of competitions, for example: best lap time, total time over many laps and mass start (which is more reminiscent of a demolition derby than a rally).

Time tracking of the heats will be done as following. Every competitor in a heat gets a number from 1 to 9. To register time, the person tracking the time will first press ENTER to save current time to the time buffer, after that the time can be assigned to a competitor by pressing the corresponding number. For example, two cars, first a black(4), then a blue(2) pass the checkpoint and the person tracking the time will press ENTER twice exactly at the moment when the cars passed the checkpoint. Then time tracker presses 4 for the black car and 2 for the blue car to assign previously saved times to them.

Best times from all the heats will be combined into a singular results table.

Spectators must be able to easily find events and look for information and results.

2 USER FLOWS

2.1 Public user

- 1 - Find event using content browser or search
 - 1.1 – Look for event information on “Information” tab
 - 1.2 – Look for competitors on “Competitors” tab
 - 1.3 – Look for results on “Results” tab

2.2 Organizer

- 1 – Go to “My Events” tab
- 2 – Create new event by clicking on “Add new event”
- 3 – Add new competitors and their cars on “Competitors” tab
- 4 – Add new competitions and heats on “Competitions” tab
- 5 – Assign competitors to competitions on “Competitions” tab
- 6 – Track time by clicking circled T near a heat on “Competitions” tab

3 ERD

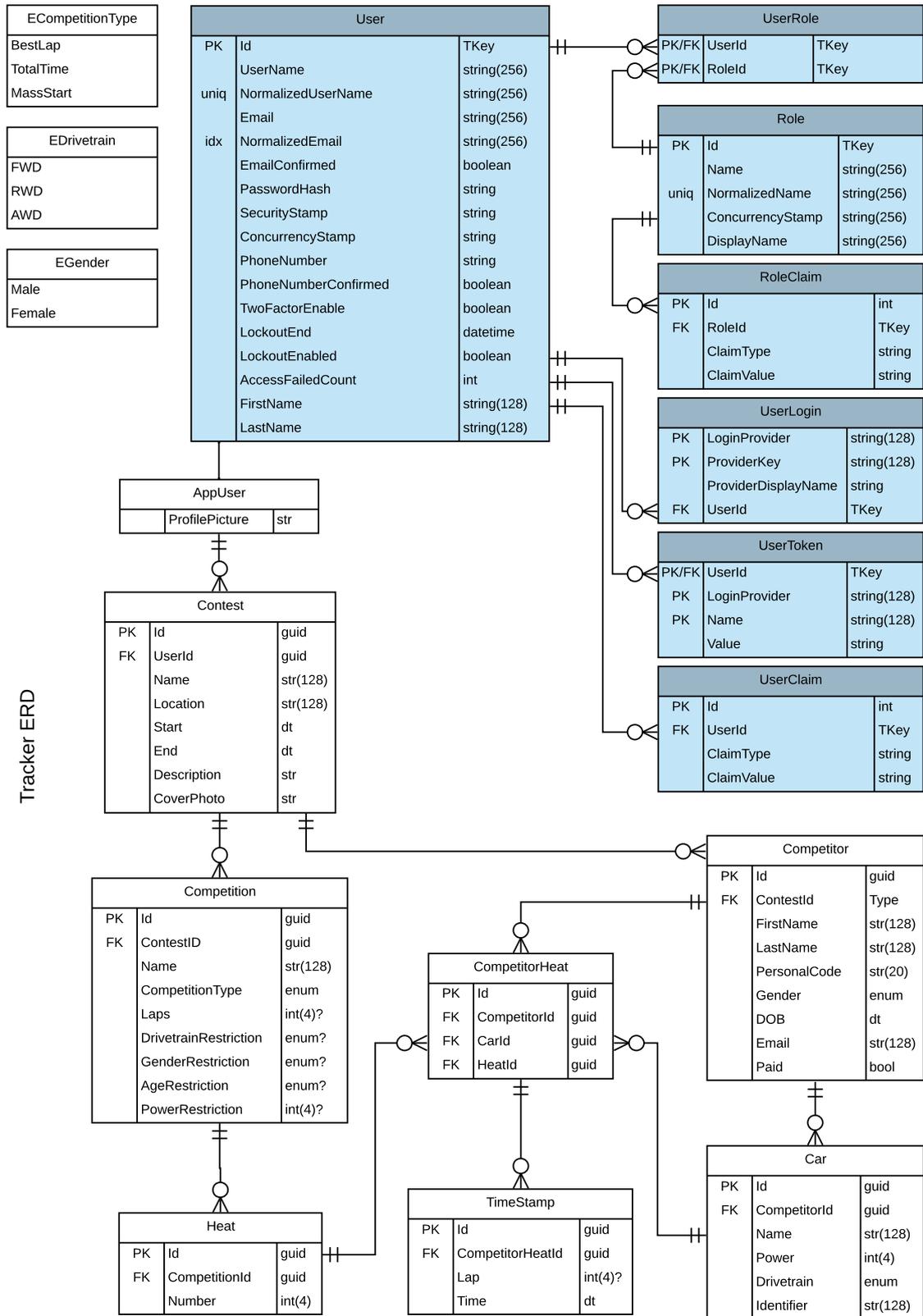


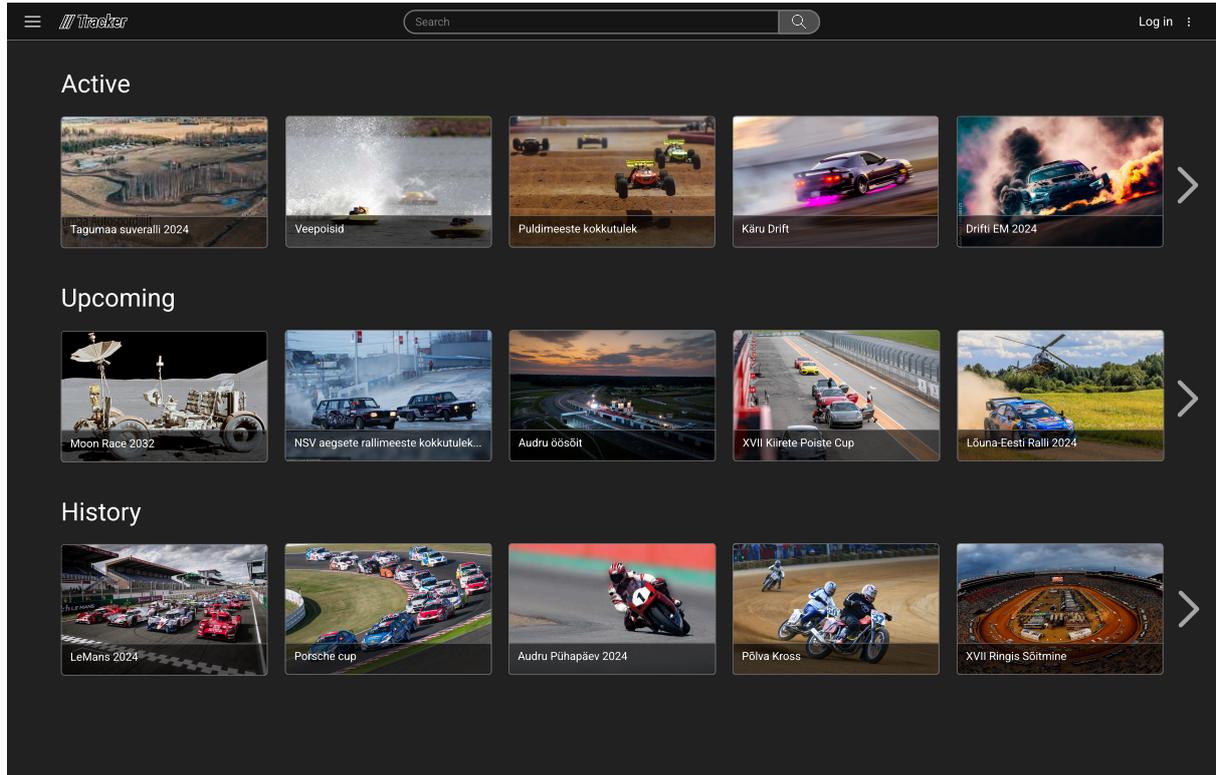
Figure 1: ERD Schematic

4 UI SKETCHES

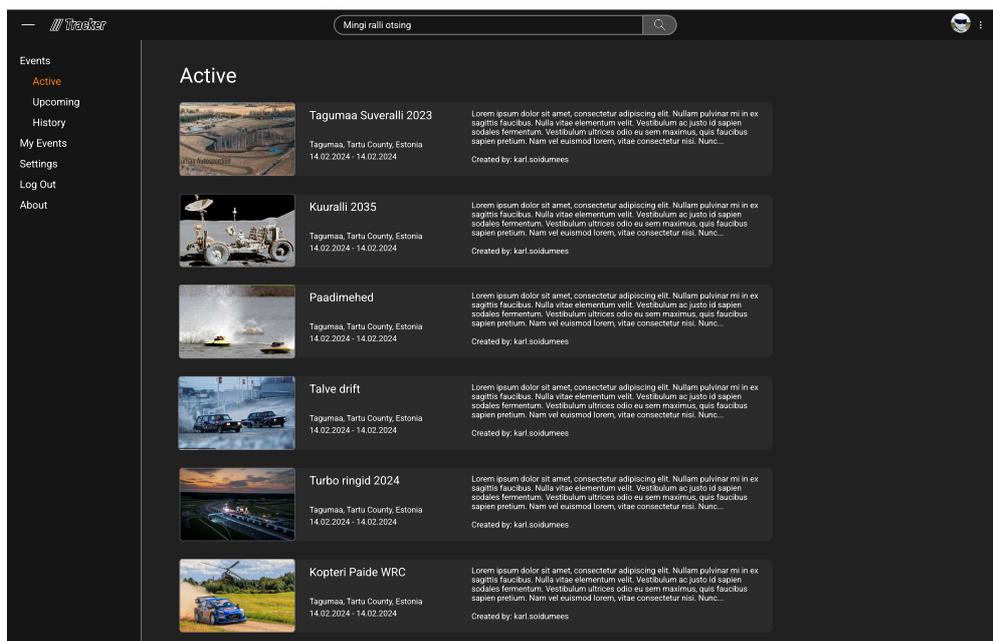
Figma link:

<https://www.figma.com/file/8NZmenkivC037kfOjAdV9v/Tracker?type=design&node-id=0%3A1&mode=design&t=ToqOqMBjhvcTSBdv-1>

4.1 Front page



4.2 Active events page



4.3 Search results

Tracker

🔍

- Events
- My Events
- Settings
- Log Out
- About

Search results

Tagumaa Suveralli 2023

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

Kuuralli 2035

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

Paadimehed

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

Talve drift

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

Turbo ringid 2024

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

Kopteri Paide WRC

Tagumaa, Tartu County, Estonia
14.02.2024 - 14.02.2024

Created by: kari.soidumees

4.4 Public Information page

Tracker

🔍
Log in

- Events
- Log In
- About

26.08.2023

Igamehesõit

1-3 koht rahaline auhind

Automüügi kohustus puudub

Information
Competitors
Results

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam pulvinar mi in ex sagittis faucibus. Nulla vitae elementum velit. Vestibulum ac justo id sapien sodales fermentum. Vestibulum ultrices odio eu sem maximus, quis faucibus sapien pretium. Nam vel euismod lorem, vitae consectetur nisi. Nunc...

Cras non dictum risus. Curabitur consectetur tempus dui a convallis. Curabitur auctor imperdiet magna in lobortis. Phasellus malesuada interdum posuere. Aenean eget accumsan ante. Pellentesque volutpat porta varius. Donec in luctus diam, id dapibus mauris. Maecenas bibendum porta neque, nec pretium nisi feugiat ornare. Donec tempor commodo erat, eget laculis metus consequat sed. Duis hendrerit mauris sed pellentesque volutpat. Vestibulum ornare, libero non maximus laoreet, neque leo efficitur nulla, vel rhoncus metus leo vel nisi. Pellentesque pretium est at est feugiat, a ultrices mi eleifend. Sed finibus venenatis mi, non imperdiet quam blandit eget. Aliquam viverra arcu vitae turpis sodetisque euismod.

Registreerimine kuni 15. mai: 25€, hiljem 30€.

Väistusklassid:

- FWD Naised
- FWD Mehed
- Lapsed
- RWD
- Igamehesõit

Tagumaa
Tagumaa, Tartu County, Estonia

Created by: kari.soidumees

Start: 14.05.2024 10:00
End: 14.05.2024 20:00

4.5 Public Competitors page

// Tracker
Log in

26.08 2023

Igamehesõit

1-3 koht rahaline auhind

Automüügi kohustus puudub

Information Competitors Results

FWD Naised

First name	Last name	Car	Drivetrain	Power	Identifier
Kaisa	Ratas	VW Golf	FWD	60 kW	Must, sildiga hiir
Karmen	Koib	Daewoo Turbo	FWD	80 kW	Punane
Liisa	Velg	Audi 100	FWD	86 kW	Roheline
Anne	Sumbuti	Mitsubishi Lancer	FWD	74 kW	Kollane
Mari	Pidur	VW Golf	FWD	60 kW	Valge
Liisi	Tuli	Honda Accord	FWD	92 kW	Must
Anneli	Turbo	VW Passat	FWD	56 kW	Sinine

Lapsed

First name	Last name	Car	Drivetrain	Power	Identifier
Kaisa	Ratas	VW Golf	FWD	60 kW	Must, sildiga hiir
Karmen	Koib	Daewoo Turbo	FWD	80 kW	Punane
Liisa	Velg	Audi 100	FWD	86 kW	Roheline
Anne	Sumbuti	Mitsubishi Lancer	RWD	74 kW	Kollane
Mari	Pidur	VW Golf	FWD	60 kW	Valge
Liisi	Tuli	Honda Accord	FWD	92 kW	Must
Anneli	Turbo	VW Passat	FWD	56 kW	Sinine

4.6 Public Results page

// Tracker
Log in

26.08 2023

Igamehesõit

1-3 koht rahaline auhind

Automüügi kohustus puudub

Information Competitors Results

▼ FWD Naised

▼ Heat 1

First name	Last name	Car	Lap 1	Lap 2	Lap 3	Best lap
Kaisa	Ratas	VW Golf	02:13:223	02:13:223	02:13:223	02:13:223
Karmen	Koib	Daewoo Turbo	02:12:110	02:12:110	02:12:110	02:12:110
Liisa	Velg	Audi 100	02:25:221	02:25:221	02:25:221	02:25:221

▲ Heat 2

▲ Heat 3

▲ Heat 4

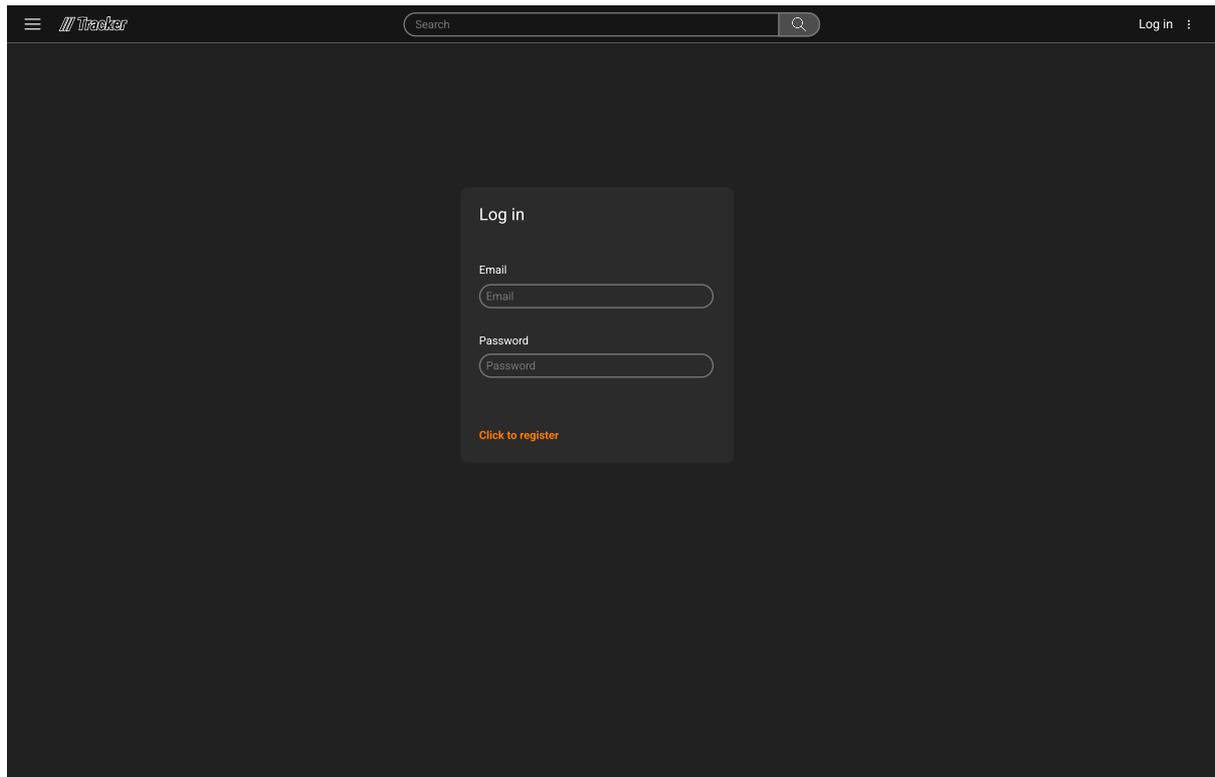
▲ Heat 5

▲ Results

▼ Lapsed

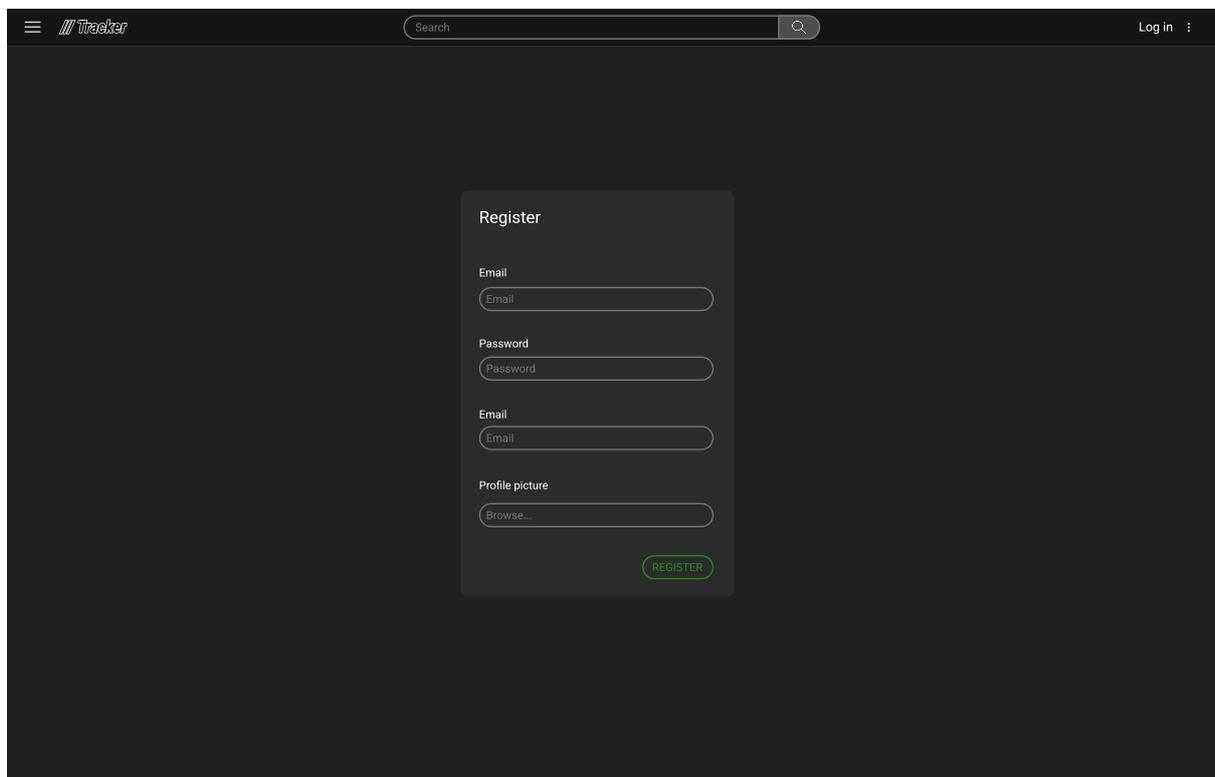
▼ Heat 1

4.7 Log in page



The screenshot shows a dark-themed web application interface. At the top left, there is a hamburger menu icon and the text "Tracker". In the top center, there is a search bar with the word "Search" and a magnifying glass icon. At the top right, there is a "Log in" link with a dropdown arrow. The main content area features a central "Log in" form. The form has a title "Log in" and two input fields: "Email" and "Password". Below the password field, there is a link that says "Click to register".

4.8 Register page



The screenshot shows a dark-themed web application interface. At the top left, there is a hamburger menu icon and the text "Tracker". In the top center, there is a search bar with the word "Search" and a magnifying glass icon. At the top right, there is a "Log in" link with a dropdown arrow. The main content area features a central "Register" form. The form has a title "Register" and four input fields: "Email", "Password", "Email", and "Profile picture". The "Profile picture" field has a "Browse..." label. At the bottom right of the form, there is a green "REGISTER" button.

4.9 Organizer My Events page

The screenshot shows the 'My Events' page in the Tracker application. The page has a dark theme and a sidebar on the left with navigation options: Events, My Events (selected), Tagumaa Suveralli, Kuuralli 2035, Paadimehed, Talve drift, Turbo ringid 2024, Kopteri Paide WRC, Settings, Log Out, and About. The main content area is titled 'My Events' and features an 'Add new event' button. Below the title, there is a list of seven events, each with a thumbnail image, a title, location, dates, and a description. The events are: Tagumaa Suveralli 2023, Kuuralli 2035, Paadimehed, Talve drift, Turbo ringid 2024, and Kopteri Paide WRC. Each event card includes a small image, the event name, location (Tagumaa, Tartu County, Estonia), dates (14.02.2024 - 14.02.2024), and a description starting with 'Lorem ipsum dolor sit amet, consectetur adipiscing elit...'. The 'Created by' field for all events is 'karl.soidumees'.

4.10 Organizer New Event page

The screenshot shows the 'New Event' page in the Tracker application. The page has a dark theme and a sidebar on the left with navigation options: Events, My Events, New Event (selected), Tagumaa Suveralli, Kuuralli 2035, Paadimehed, Talve drift, Turbo ringid 2024, Kopteri Paide WRC, Settings, Log Out, and About. The main content area is titled 'New Event' and contains a form for creating a new event. The form has the following fields: 'Event name' (text input), 'Cover photo' (browse button), 'Description' (text area), 'Location' (text input), 'Start date' (two date pickers for DD.MM.YYYY and HH:MM), and 'End date' (two date pickers for DD.MM.YYYY and HH:MM). At the bottom of the form, there are two buttons: 'DELETE' (red) and 'SAVE' (green).

4.11 Organizer Competitors page

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Automüügi kohustus puudub

Competitions **Competitors** Edit Event

All competitors

First name	Last name	Personal code	Gender	Date of Birth	Email	Cars	Paid
Kaisa	Ratas	49373972881	Female	22/11/1993	maisa@kaisa.com	2	+
Karmen	Koib	47284058227	Female	12/05/1995	karmen.koib@gmail.com	1	+
Liisa	Velg	47264957226	Female	23/12/2002	liisavelg@neti.ee	2	+
Anne	Sumbuti	48362792751	Female	17/12/1993	anne@sumbs.ee	1	-
Mari	Pidur	47289492833	Female	05/02/1902	maripidur@yahoo.com	1	+
Liisi	Tuuli	49273485722	Female	03/04/1993	liisi.tuuli@tuulekoda.ee	0	-

[Add new competitor](#)

4.12 Organizer Competitions page

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Igamehesõit
1-3 koht rahaline auhind
Automüügi kohustus puudub

Competitions **Competitions** Competitors Edit Event

▼ FWD Naised

▼ Heat 1

First name	Last name	Car	Lap 1	Lap 2	Lap 3	Best lap
Kaisa	Ratas	VW Golf	02:13:223	02:13:223	02:13:223	02:13:223
Karmen	Koib	Daewoo Turbo	02:12:110	02:12:110	02:12:110	02:12:110
Liisa	Velg	Audi 100	02:25:221	02:25:221	02:25:221	02:25:221

[Add new competitor](#)

▲ Heat 2

[Add new heat](#)

▲ Results

[Add new competition](#)

4.13 Organizer Time Tracking page

The screenshot shows the 'FWD Naised > Heat 1' page in the Tracker application. The interface is dark-themed. On the left is a sidebar with navigation options: Events, My Events, Igamehesõit, Tagumaa Suveralli, Kuuralli 2035, Paadimehed, Talve drift, Turbo ringid 2024, Kopteri Paide WRC, Settings, Log Out, and About. The main content area has a search bar at the top. Below it, the title 'FWD Naised > Heat 1' is displayed. Underneath, there are 'Times in buffer' (four circles, the last one is orange) and 'Keys active' (one green circle). A table lists participants with their lap times:

	First name	Last name	Car	Identifier	Lap 1	Lap 2	Lap 3
①	Kaisa	Ratas	VW Golf	Must, sildiga hiir	02:13:223	02:13:223	
②	Karmen	Kolb	Daewoo Turbo	Punane	02:12:110	02:12:110	
③	Liisa	Velg	Audi 100	Roheline	02:25:221		

At the bottom right of the table area are 'CLEAR' and 'SAVE' buttons.

4.14 Organizer New Competition page

The screenshot shows the 'New Competition' page in the Tracker application. The interface is dark-themed. On the left is a sidebar with navigation options: Events, My Events, Igamehesõit, Tagumaa Suveralli, Kuuralli 2035, Paadimehed, Talve drift, Turbo ringid 2024, Kopteri Paide WRC, Settings, Log Out, and About. The main content area has a search bar at the top. Below it, the title 'New Competition' is displayed. The form includes the following fields:

- Competition name:
- Competition type:
- Number of laps:
- Restrictions: , , ,

At the bottom right of the form are 'DELETE' and 'SAVE' buttons.