

# EcoRoute MCR

A carbon footprint calculator for your journeys

EcoRoute MCR

*travel evergreen*



# Overview



Who are we?



What does EcoRouteMCR do?



Recorded demo



How does it work?



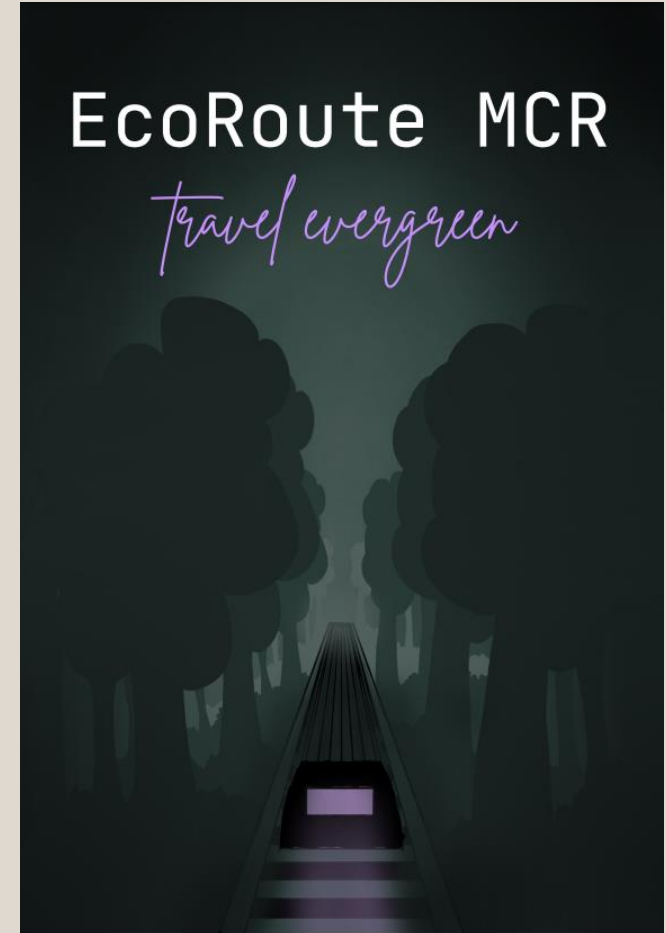
How did we build it?



What would we do differently?

EcoRoute MCR

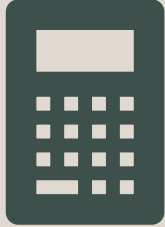
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# Who are we?

Meet the team





Carbon footprint  
calculator



Helps users minimize  
their carbon emissions



Allows users to **store**  
their journeys (our USP)

# What does it do?

# Live demos



# Landing and Login Page

- Overview of the website
- Start button goes to calculator page
- Dropdown menu

## EcoRouteMCR



### Travel Evergreen

EcoRoute MCR aims to empower the individual when it comes to deciding their journey.

Click "Start a journey" to see your potential carbon footprint and alternatives.

Start a journey

- Different transport choices
- User pick locations
- CO<sub>2</sub> and number of trees to offset
- Ability to change choice

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The University of Manchester  
Oxford Road, Manchester, M13 9PL, UK  
Royal Charter Number: RC000797

# Profile Page

- Users can see their carbon emissions , saved trips and trees
- Ability to go to the main page

The screenshot shows a web application interface for selecting a mode of transport. At the top right is a user profile icon. The main heading is "Choose your preferred mode of transport:". Below this are four buttons: "CAR", "PLANE", "TRAIN", and "BOAT", each with a corresponding icon. Below the transport buttons are two location input fields: "Manchester" and "London". To the right of these are two radio buttons for "Round trip" (selected) and "One way". A white-bordered box contains a summary of the current selection: "Your current selection has a carbon footprint of 294.46kg. This equates to 10.9 trees. Could you do better?". Below this summary are the same four transport buttons. Under each button is a "Save" value: "CAR" (0kg), "PLANE" (0kg), "TRAIN" (224.19kg), and "BOAT" (255.98kg). A "Save Trip" button is at the bottom of the box.

Choose your preferred mode of transport:

CAR PLANE TRAIN BOAT

Manchester London

☒ Round trip ☐ One way

Your current selection has a carbon footprint of 294.46kg.  
This equates to 10.9 trees.  
Could you do better?

CAR PLANE TRAIN BOAT

Save 0kg Save 0kg Save 224.19kg Save 255.98kg

Save Trip



## Contact Page and Log Out

- User friendly interface
- Easy to log out and navigate through the page

# EcoRouteMCR



## Travel Evergreen

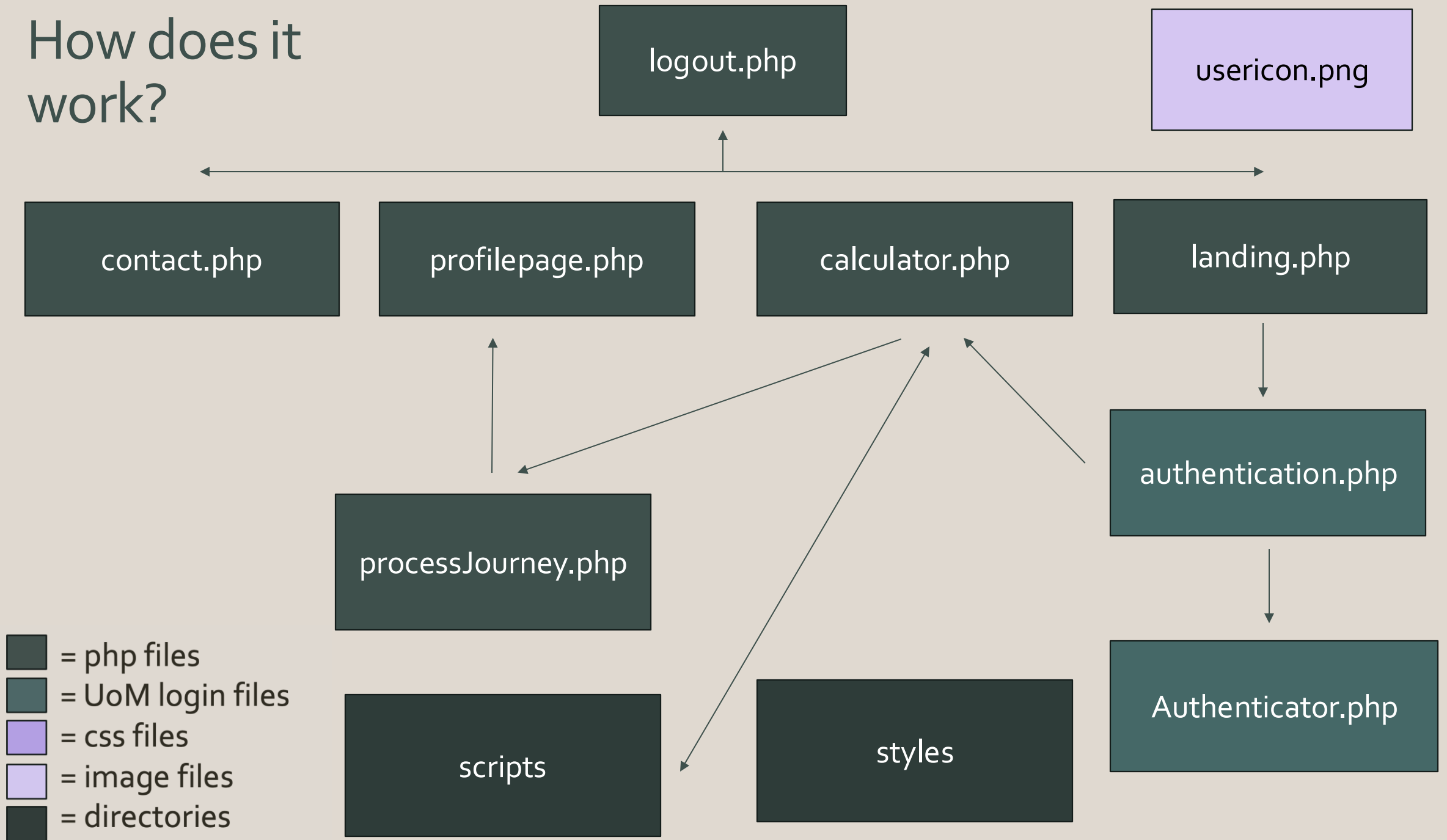
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Start a journey

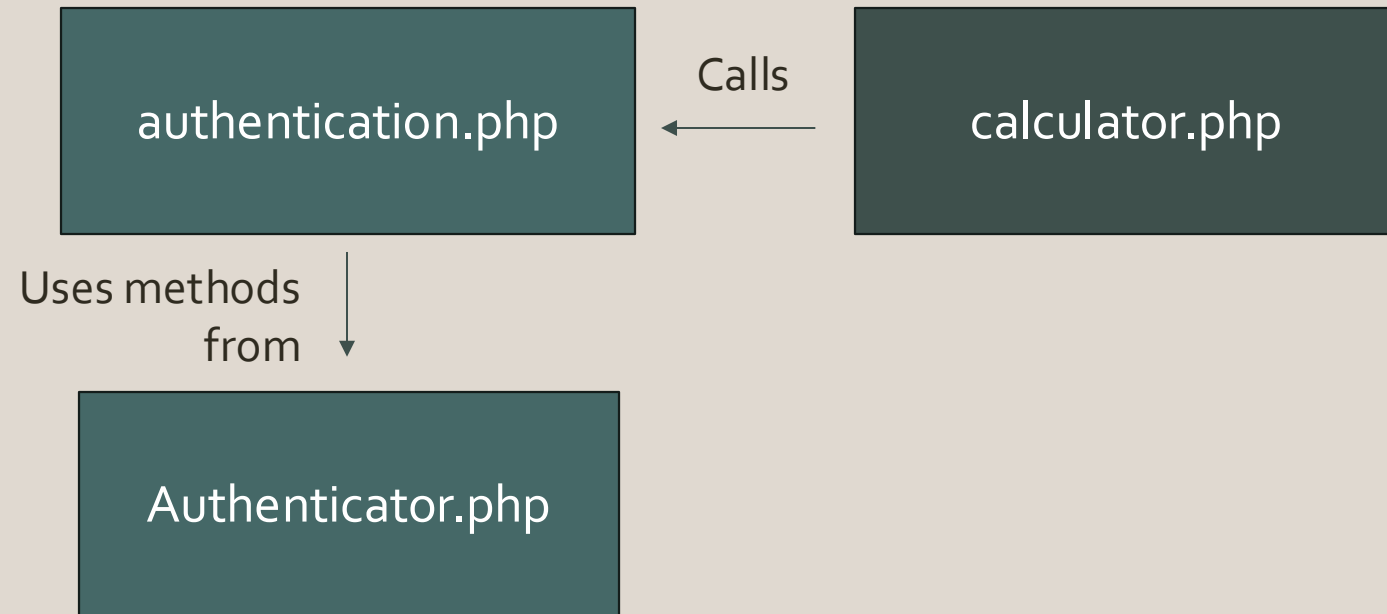
# How it works

# How does it work?



How does it work?

## Login + Session Variables



**Session Variables:**

name

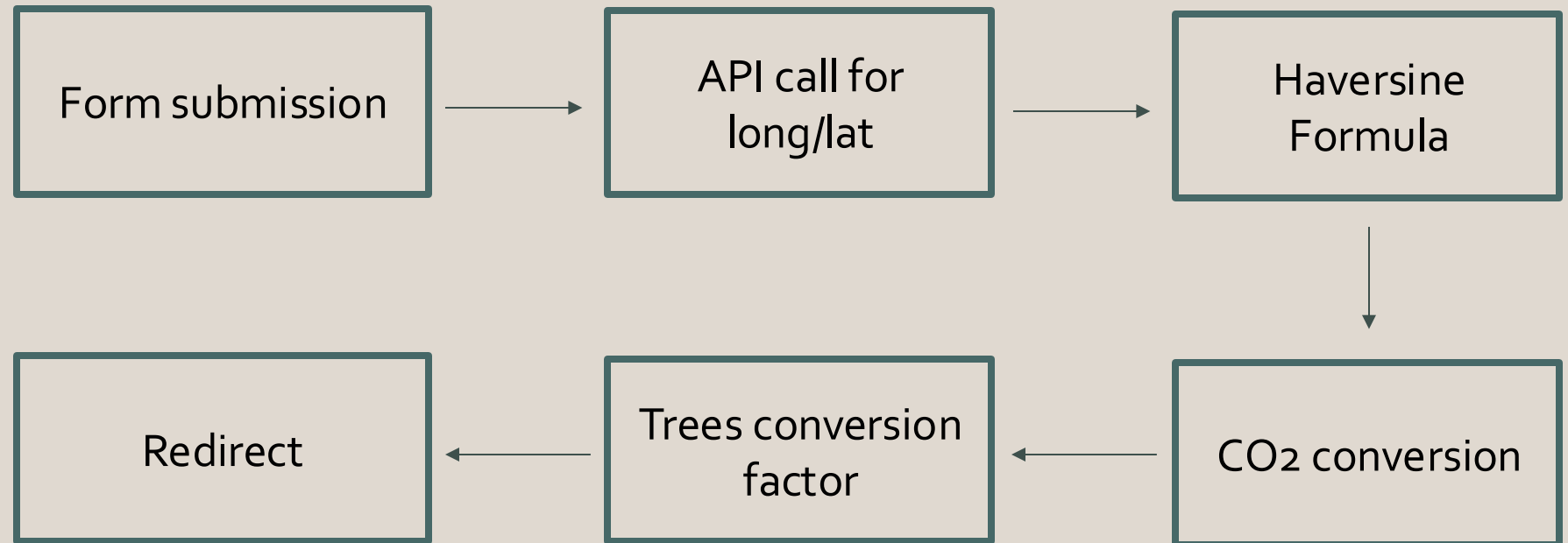
logout

csticket

How does it work?

api.js

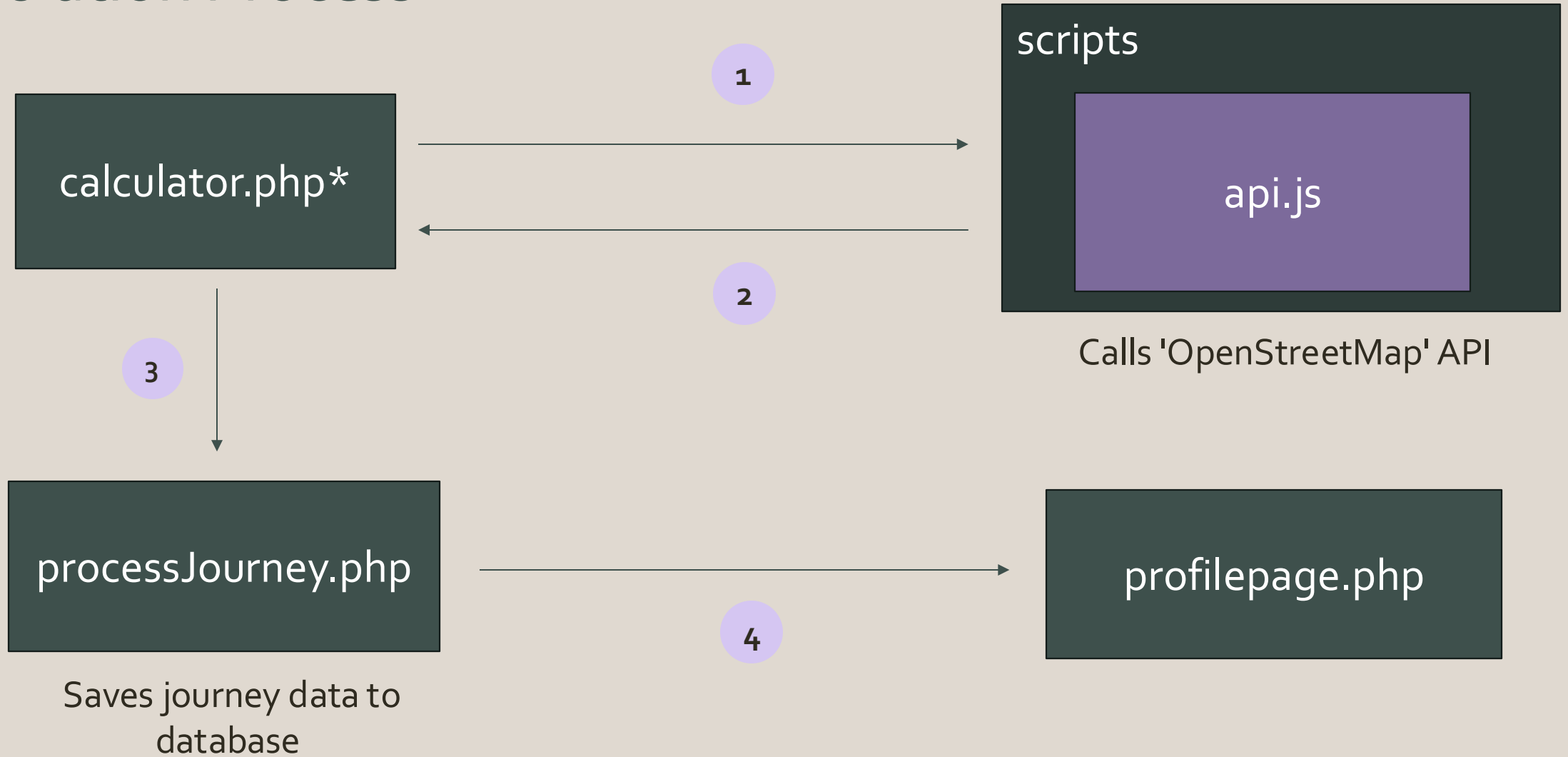
How is the carbon footprint\*  
calculated from the journey details?



\*Carbon footprint data = CO2 emissions only



# Calculation Process






# Database Structure


processJourney.  
php

profilepage  
.php

journeys table

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
<input type="checkbox"/>	1	<b>journeyID</b> 	int			No	None		AUTO_INCREMENT
<input type="checkbox"/>	2	<b>user</b>	varchar(50)	utf8mb3_unicode_ci		No	None		
<input type="checkbox"/>	3	<b>destinationID</b> 	int			No	None		
<input type="checkbox"/>	4	<b>roundTrip</b>	char(1)	utf8mb3_unicode_ci		No	None		
<input type="checkbox"/>	5	<b>transport</b>	varchar(255)	utf8mb3_unicode_ci		No	None		
<input type="checkbox"/>	6	<b>treeSaving</b>	float			No	None		
<input type="checkbox"/>	7	<b>carbonFootprint</b>	double			No	None		
<input type="checkbox"/>	8	<b>sourceID</b> 	int			No	None		

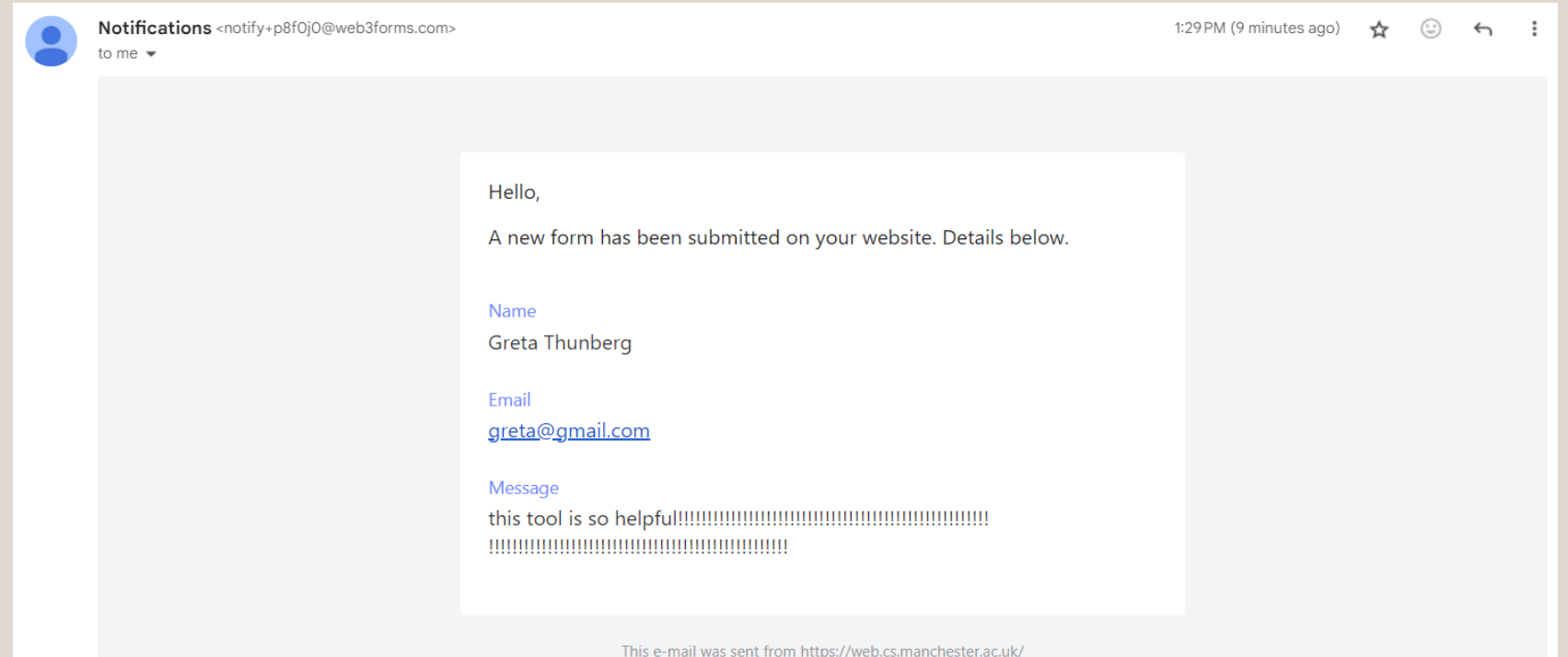
distances table

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
<input type="checkbox"/>	1	<b>destinationID</b> 	int			No	None		AUTO_INCREMENT
<input type="checkbox"/>	2	<b>destination</b>	varchar(50)	utf8mb3_unicode_ci		No	None		

# Contact form

# Web3Forms

- Backend-based API to handle submissions
- Received via email
- Easy to integrate into our existing system



# How did we build it?

# How did you build it?

## Tools and Techniques

- *Managing the code base*
- *Servers + databases*
- *Communication*

## Design Decisions

- *Database design*
- *Dividing into components*



**Removing double tree conversion**

Amelie Coy authored 1 month ago



**edited input for text**

Karen Onwuazo authored 1 month ago



**fixed the avatar in the top right so it's more cohesive**

Karen Onwuazo authored 1 month ago



**calc css**

Karen Onwuazo authored 1 month ago

**Mar 11, 2024**



**From and To inputs design**

timofei.fedchin@student.manchester.ac.uk authored 1 month ago



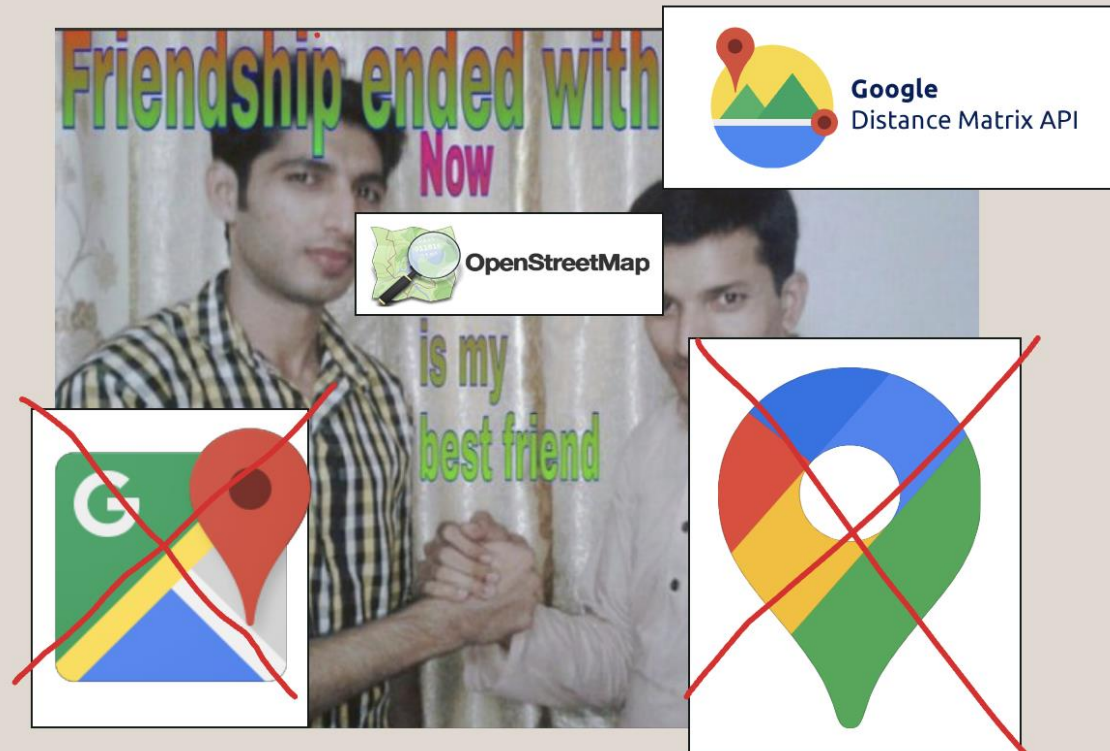
How did you  
build it?

## Remove Unfeasible Trips

- *Google's matrix API*

## Journey Overheads

- *Non direct distance, connecting flights etc*

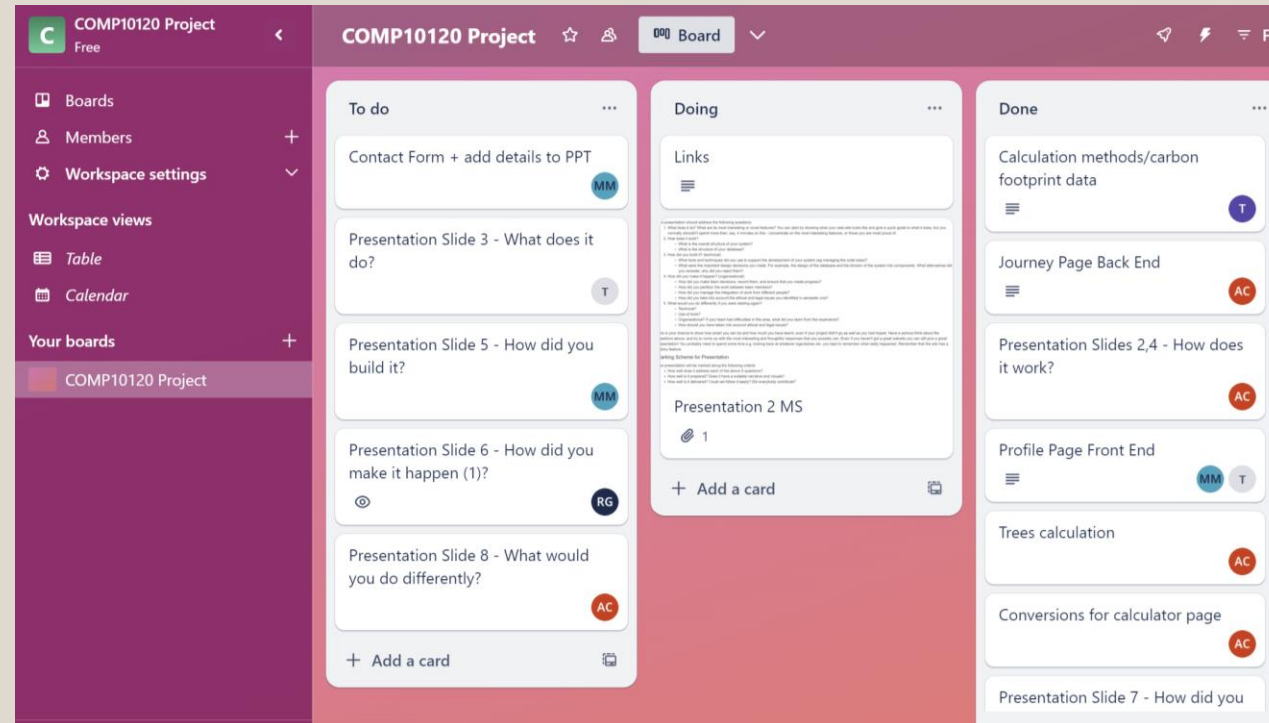


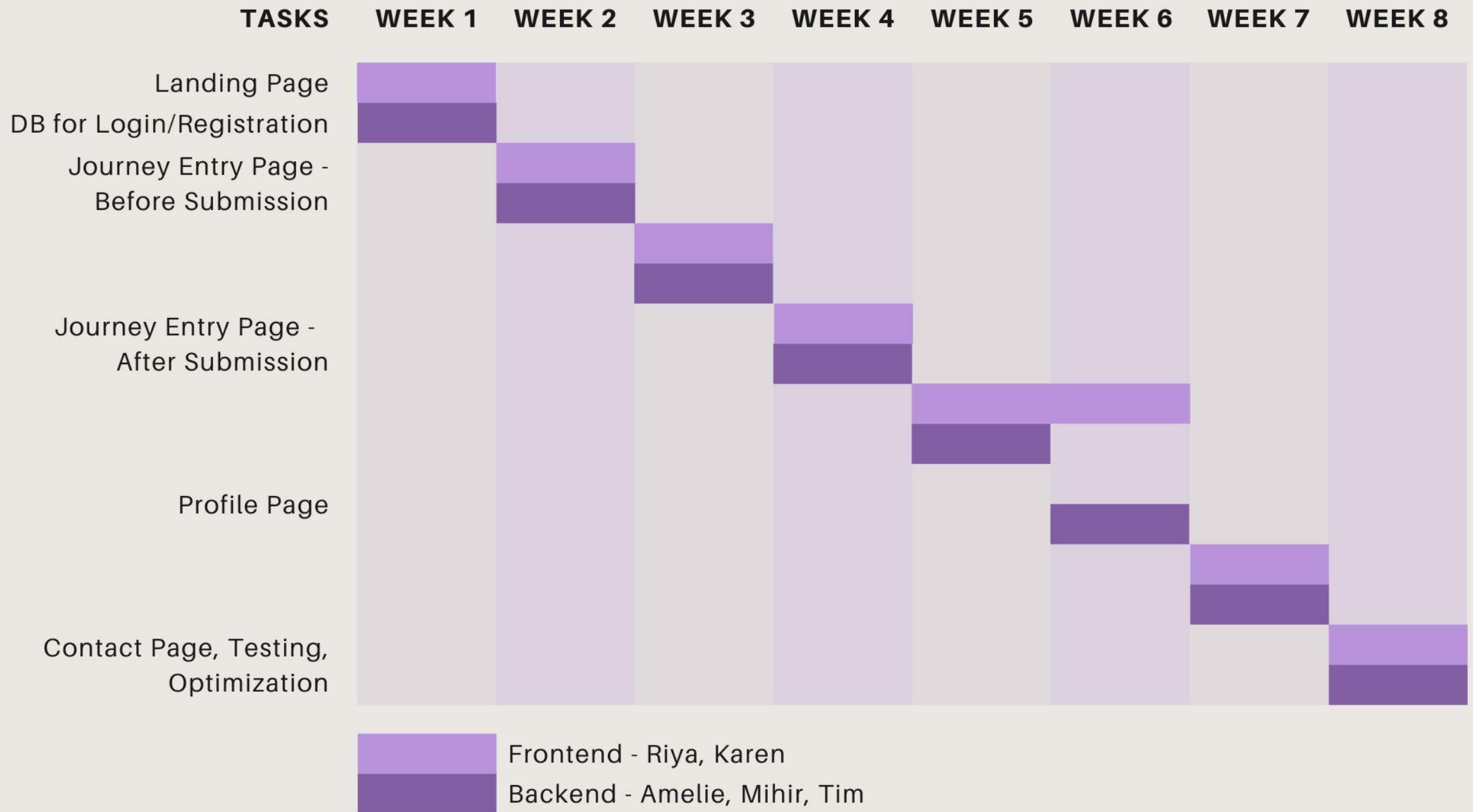
How did we make it  
happen?

How did we  
make it  
happen? (part  
1)

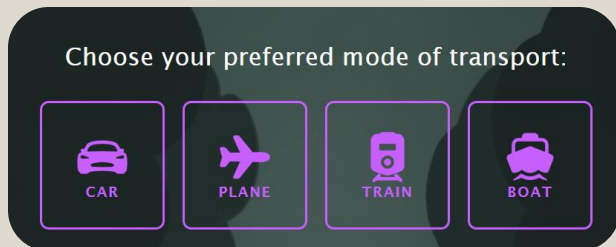
# Team Planning

- Trello and WhatsApp
- Lab sessions and tutorials
- Weekly review of work and pace
- Semester 1 Project plan with adjustments





## How did we make it happen? (part 2)



- **Separate** branches and online communication
- **Mitigated ethical issues** resulting from relying on user trust
- Emphasized that EcoRouteMCR is **not** a **holistic tool**
- **Protected** sensitive location data against risks



What could we do  
differently?



### *Technical*

- More **accurate** and realistic journeys with **times**
- **Error** messages
- Better **data** transfer

### *Use of tools*

- Frameworks
- Research API options
- Branded login system



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What would you do differently if you were starting again?

What would  
you do  
differently if  
you were  
starting again?

### *Organisational*

- Better use of **Git**



### *Ethical and legal issues*

- Consider **cybersecurity** principles (OWASP)
- **Hashing**

# EcoRoute MCR

*travel evergreen*

Thank you for  
listening and  
remember to  
**travel evergreen.**