Welcome to my overview of the personalised transport planner

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Final year project, Roehampton (September 2023 – May 2024)

Outline: I have created a personalised transport planner website as my final year project when I was studying computer science at Roehampton University using my laptop.

Background and motivation

The background and motivation of this project is that it is important to improve the usage of public transport and the quality of life as part of an initiative to combat congestion and climate change. Transport for London (TfL) provide live updates and journey planning information free of cost and it is in standardised machine-readable API format to allow innovation and improve access to the information so that developers can make their own transport applications that enhances the public transport experience. I have used the TfL API for my final year project which can be accessed from this link here https://api-portal.tfl.gov.uk/api-details to begin accessing the API online in machine-readable format as Json to start working on my final year project and to apply the technologies and resources I have considered to use for creating the personalised transport planner from scratch to complete on jupyter notebook for my project management using python as the programming language to type the codes with the flask framework that was used for creating and building the website applications and APIs for development.

Project aims and objectives

My aims of this final year project I have considered were to explore the possibilities offered by the TFL transport API, to design and specify a personalised transport application based on user research and to develop and test a prototype leveraging the TFL API, using an agile methodology. My objectives of this final year project I have considered were to research the background of the TFL transport API and its role for London, discover the legal, ethical, and professional limitations and possibilities, conduct user research to discover and design a personalised service for public transport users, use an agile methodology to learn how to access and process TFL API data using python, use the Flask framework to create a web application prototype and to evaluate the prototype and make recommendations for further work.

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Key responsibilities

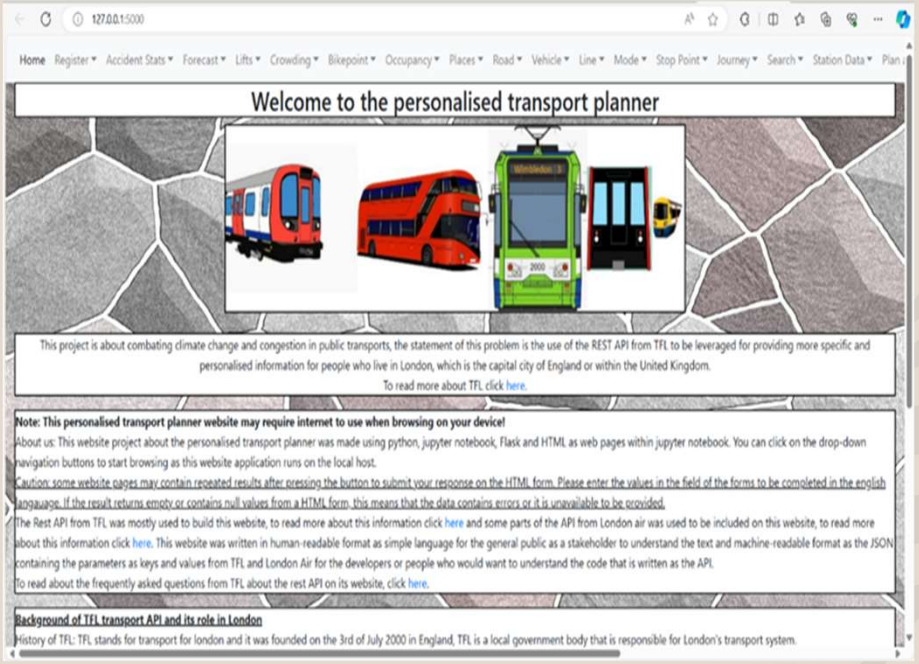
•To install jupyter notebook, python, and flask to begin working on my project using my laptop. Including the instalment and management of the python packages that is required for the website project using the `pip` command by opening the command prompt or on a cell of jupyter notebook to start executing the line of code.

•To create, develop and maintain the project using jupyter notebook, integrating the codes written in the python programming language using the flask framework as the backend development using the interactive python notebook file to store the project itself on my local directory of my laptop to run the website for deployment on the development server using the localhost with the default port number 5000 ensuring the correct URL is highlighted for easy access on jupyter notebook when it is clicked.

•To create a folder called static from my local directory of my laptop in the same location as my interactive python notebook file of my project to store the files of the plan, customised logo, project proposal, background wallpaper and CSS file of the website.

•To create another folder called templates from my local directory of my laptop in the same location as my interactive python notebook file of my project to store the .html files of the website pages written in the HTML programming language with CSS and JavaScript including hyperlinks for better understanding and additional details as reliable architectures I have created for the frontend development; this focuses on the website as well as the user interface and user experience from the python flask application.

•To use the interactive python kernel to execute the lines of code for backend and frontend development in the cells of the jupyter notebook for real-time error checking and result validation to ensure the smooth execution of tasks and code that works fine without errors to improve the functionality of the project.



This is the user interface of the website I have created for this project about the personalised transport planner.

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Achievements and conclusion

To summarise everything I have done for my final year project, I have manged to successfully integrate the TfL API into a functioning website prototype to build the personalised transport planner on jupyter notebook as a tool I have used to write the programming languages for its front-end and backend development, enhance the user experience for public transport users by providing personalised and transport information in real-time and demonstrated the opportunity of leveraging the APIs to improve public services and combat urban challenges which were congestion and climate change to focus on making the public transport planner more efficient and attractive by providing travellers with access to data of live transport updates and to add personalised information such as text, user interface etc.

Furthermore, this experience highlights my ability to effectively utilise computer skills particularly in the python and html programming languages along with the flask framework to create innovative solutions that address real-world problems. My work did not only contribute to efforts for reducing congestion and combating climate change along with improving public transport usage but it also underlined the importance of user-centred design and agile methodologies in developing impactful technological solutions.

I have used GitHub to publish my final year project online which is available to download its content of the personalised transport planner in its files and folders online publicly from this link provided here: https://github.com/MosesNdale/finalyearproject.

These are the indicative technologies and resources I have used for this project below:

Thank you for viewing my overview

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