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SyncRide - Match routes, share rides

Web Applications with C# project

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Author's declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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1 Introduction

In a time characterized by growth, crowded streets and increasing worries about eco friendliness, the demand for creative ways to enhance travel experiences is more urgent than ever. Conventional transportation methods like cars with one occupant add to traffic jams, air pollution and time wasted for travellers, not to mention the high cost.

This is where SyncRide comes in – a messaging platform for organizing shared rides. It leverages the ease of communication and collaboration to match commuters with similar routes to benefit both individuals and the environment. SyncRide aims to alleviate traffic congestions, reduce carbon emission and cost of daily commuting by connecting users by providing a platform for them for coordination.

2 Analysis

A messaging platform for organising shared rides has its own set of benefits but also considerations.

2.1 Benefits

One of the main benefits of ride sharing is the environmental impact of it. By reducing the number of cars on the road, this effectively reduces the amount of carbon emissions. This also has the added benefit of traffic reduction. By advertising carpooling, the platform could alleviate traffic congestions during peak hours.

For individuals, the application would provide a way to save costs on the daily commute. By finding a group of similar commuters, they could share the cost of riding, or even owning a car. It is also more convenient for people who already share rides, by having a dedicated platform for this.

Some added benefits are also community building. Groups can foster potential friendships and networking opportunities by riding together daily. What is more is the efficiency of commuting. Matching similar commuters would optimize the use of already available transportation resources.

2.2 Challenges

Although, SyncRide is seemingly just another messaging platform, it has its own set of challenges. One of the main ones is developing an efficient and accurate algorithm for matching users. This can be as simple as calculating the difference between coordinates and time, or by making use of artificial intelligence to analyse the data.

For this course, a simple calculation-based algorithm will be used to match the users, but this would not hold up for the final product, as it would need something more sophisticated.

2.3 Considerations

Building a message platform for sharing commuting data has its own set of challenges and considerations to think about.

One of the main problems is the privacy and safety of users. Not too many people are excited about providing their daily commute information to the internet. This in effect would mean providing their whereabouts and travelling habits, which in turn would leave people open for exploitation. To tackle this, the proposed solution would be to keep the commute routes private, even when matching the routes, to let users decide themselves, with who they want to share this information. Also, the protection of user data is up most important.

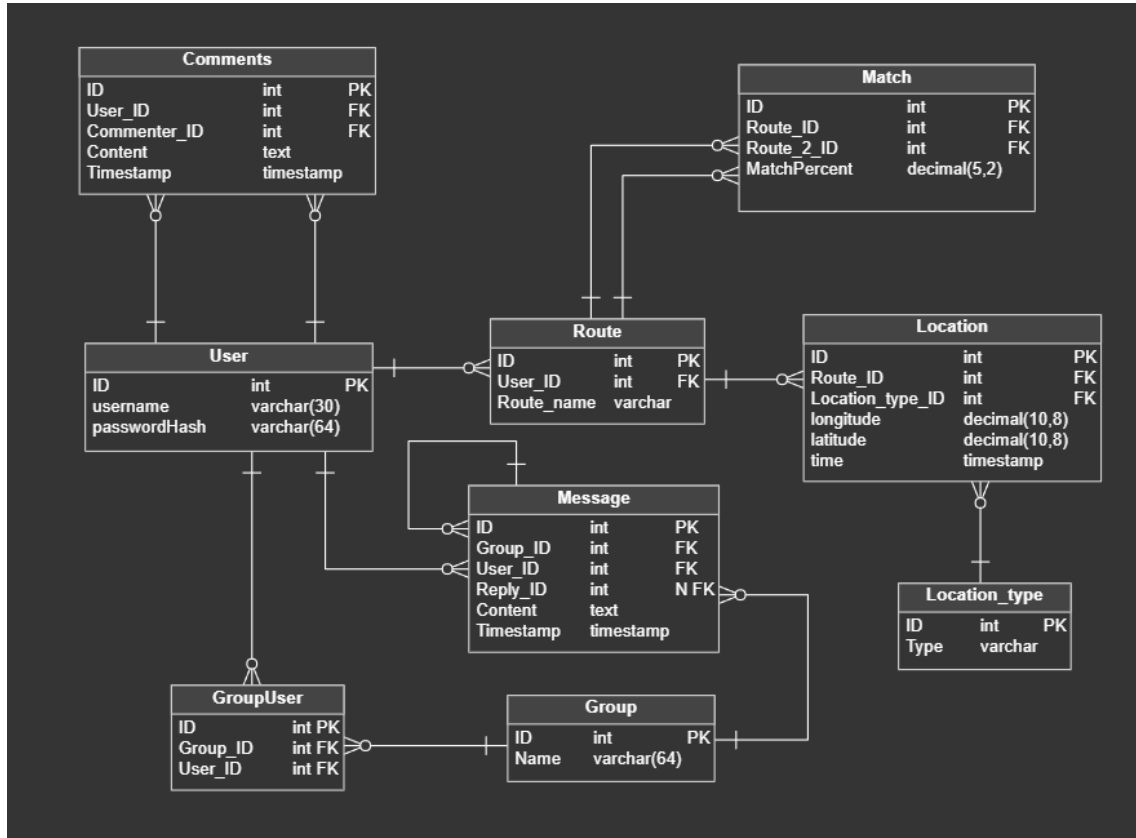
There are also legal considerations regarding liability in case of accidents or other incidents during ride sharing. User verification and clear terms of service can help address this issue (and a legal expert, which the author is not).

As the actual benefit to users is provided by other users and the number of those users, then user adoption is also important. This would require effective marketing and incentives. Also, user-friendliness is if up most importance for already adopted users. This goes hand in hand with the scalability of the platform. When users truly start to adopt the platform, and the userbase grows, infrastructure needs to be able to handle this.

All These challenges must be tackled for the final version of the application. For this course, the focus is by providing a working prototype of the application, and this does not include the problems mentioned above apart from the routes being kept a secret/anonymous.

3 ERD

It can confidently be said that this is not the final ERD for the fully fleshed out application, as it is not detailed enough due to considerations provided earlier, and the decision of not focusing on them.



4 Positive Flow

