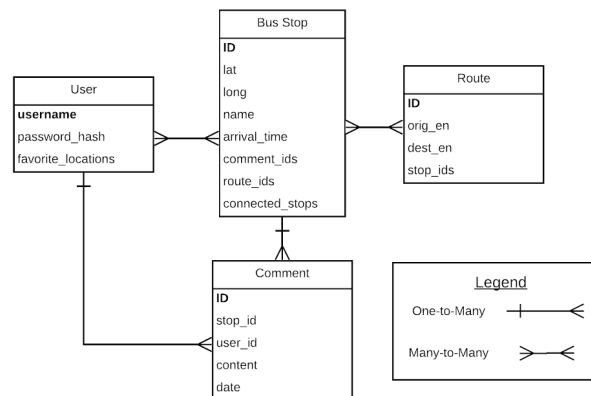


## Group Members:

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**Data Sources:** CityBus (<https://data.gov.hk/en-data/dataset/ctb-eta-transport-realtime-eta>)

## Data Schema Plan:



## APIs:

Estimated Time of Arrival (ETA) API, Route API, Stop API, Route-Stop API

([https://www.nwstbus.com.hk/datagovhk/bus\\_eta\\_spi\\_specifications.pdf](https://www.nwstbus.com.hk/datagovhk/bus_eta_spi_specifications.pdf))

Google Maps API

(<https://maps.googleapis.com/maps/api/js>)

## Selected Platforms:

Front-End: ReactJs, Bootstrap, Ajax

Backend: Node.js with Express

Database: MongoDB

## Justification for Selected Platforms & Technologies:

	PROS	CONS
<b>ReactJS</b>	<ul style="list-style-type: none"><li>- Beginner friendly: simple to use/learn</li><li>- Supports continuous rendering</li><li>- Better performance as it uses a virtual DOM</li><li>- Allows for the creation of reusable components, which saves time</li></ul>	<ul style="list-style-type: none"><li>- Does not provide as much granular control as it is only a library compared to Angular</li><li>- Requires other libraries to add more functionality: higher number of dependencies of the project.</li></ul>
<b>NodeJS</b>	<ul style="list-style-type: none"><li>- Offers high performance as Node.js interprets the Javascript code via Google's V8 JS engine</li><li>- Caching in Node.js means that when a request is made for the first module, it gets cached preventing re-execution of code.</li></ul>	<ul style="list-style-type: none"><li>- Requires an understanding of asynchronous programming.</li><li>- Does not support multi-threading</li></ul>
<b>MongoDB</b>	<ul style="list-style-type: none"><li>- More flexible as it is schema-less(more clear structure)</li><li>- Utilises Document oriented Storage in the form of JSON, which has high readability and easy manipulation of data</li></ul>	<ul style="list-style-type: none"><li>- Not the best option for complex transaction or multi-row operation.</li><li>- High memory consumption.</li></ul>