Database

The server is preloaded with two database handlers, MySQL and PostgreSQL. The PostgreSQL is preferred as this database is being taught in depth during the project.

To reduce strain on one database, more databases are created for the purpose having one database with the customer information, one database with the travel history of every customer and one database containing station names.

The CustomerInformationDB contains a unique customer id, the first name, last name and email. The customer id is auto generated for each added customer. A precondition is that emails are personal and unique, therefore the email is also a unique identifier, making sure a customer is not signed up with two accounts. This gives the option of two customers with identic names can sign up without interfering with each other’s account.  
A customer could sing up with two different emails, and disregard the purpose of a unique email as a customer identifier. This could be prevented by using social security numbers, but in this project there is no option for requesting a check on a social security number.

The stationDB contains a name for each station, but also a unique station number, making it possible for two stations to have the same name, but still be uniquely identified.

The TravelDB is going to be the largest of the databases, containing information about date, start time, start station, end time, end station, number of zones, cost of travel, customer id and travel number.  
The date and travel number are mainly used for statistics.  
The start and end station is the station number, used to calculate the number of zones travelled.  
The start and end times gives the travel duration, which is then compared to the number of zones travelled and the appropriate price can then be calculated. Zones is calculated as   
|EndStation - StartStation|= Zones. The Price is calculated to be 20,- pr. Zone.  
The customer id is used to tie a customer to a specific travel, making it easier to calculate price on demand.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| <table\_name> | CustomerDB | | | |
| <fields> | CustomerID | FirstName | Lastname | eMail |
| <type> | Serial | Varchar | Varchar | Varchar |
| <attributes> | Primary key  Unique | Not null | Not null | Not null  Unique |

|  |  |  |
| --- | --- | --- |
| <table\_name> | StationDB | |
| <fields> | StationNumber | StationName |
| <type> | Serial | Varchar |
| <attributes> | Unique | Not null |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <table\_name> | TravelDB | | | | | | | | |
| <field> | TravelNo | TraveDate | StartTime | EndTime | StartZone | EndZone | Price | Zones | CustomerID |
| <type> | BigSerial | Date | Time | Time | Integer | Integer | Numeric(4,2) | Integer | Integer |
| <attributes> | unique  primary key |  |  |  |  |  |  |  |  |