

Documentation - Solita Dev Academy Assessment

Data Import

 Prerequisites: Python3, MYSQL

- Copy trip details CSV files into `solita-assignment/solita-assignment-backend/data` folder.
- Copy stations detail CSV files into `solita-assignment/solita-assignment-backend/station_data` folder.

Data import comes under 2 major steps.

1. Importing trip details CSV files. For this, find the `load_data.py` file inside `solita-assignment/solita-assignment-backend` and execute the python file.


```
1 python3 load_data.py
```


2. Importing station details CSV file. For this, find the `load_station_data.py` file inside `solita-assignment/solita-assignment-backend` and execute the python file.

```
1 python3 load_station_data.py
```

 Risks

If the system python buffer length and packet size is not enough it will throw following error. This is due to reading very large CSV files.

 `mysql.connector.errors.OperationalError: 1153 (08S01): Got a packet bigger than 'max_allowed_packet' bytes`

 Solution:

Increase the buffer size and packet size below with following commands in the terminal.

1. `mysql -u root -p`
2. `set global net_buffer_length=1000000;`
3. `set global max_allowed_packet=1000000000;`

The above commands will increase both the buffer size and allowed packet size. Then re-try running 2 python files.

Back End

 Prerequisites: Node installation (Preferred version: v18.16.1), npm installation (Preferred version: 9.5.1)

Navigate to `solita-assignment/solita-assignment-backend` and open up a terminal.

```
run npm install
```

The above command will install all the node dependencies required to run the project.

Then execute the following command in the terminal

```
1 node index.js
```

This will start up the node express server in localhost under port 4000.

Front End

 Prerequisites: Node installation (Preferred version: v18.16.1), npm installation (Preferred version: 9.5.1)

Navigate to `solita-assignment/solita-assignment-frontend` and open up a terminal.

run `npm install`

The above command will install all the node dependencies required to run the project.

Then execute the following command in the terminal

```
1 npm start
```

This will startup the React server in localhost under port 3000.

Visit <http://localhost:3000> to view the web application.

Product Review and Functional requirements

Data Import

 Python3 was used for the data imports to support high volume of data with efficient transmission speeds.

- pandas library was used to read csv files.
- mysql connector was used to connect to mysql database.

Requirement	Implementation	Status
Import data from the CSV files to a database or in-memory storage	The data is imported to <code>helsinki_city_bike_db</code> <ul style="list-style-type: none">• trips table - Data relevant to trips are imported to trips table.• stations table - Data relevant to stations are imported to stations table.	Done
Validate data before importing	If the fields are empty, they are replaced with default values (distance and duration with 0).	Done
Don't import journeys that lasted for less than ten seconds	The trips which lasted lower than 10s are neglected when inserting records to the database.	Done
Don't import journeys that covered distances shorter than 10 meters	The trips which covered distance lower than 10m are neglected when inserting records to the database.	Done

Front End

Journey list view

- Journey list page was implemented with a table which includes **pagination** and allows the user to select **number of records which the table display at a time**.
- The table shows departure station, return station, distance (in Kms) and duration (in minutes).
- The pagination will allow the users to navigate through the records from page to page depend on the record count user selected to view at a time (25: default, 50, 100).

Trips

ID	Departure Station	Return Station	Distance (km)	Duration (min)
1	Tenholantie	Esterinportti	1.85	6.78
2	Erottajan aukio	Hakaniemi (M)	1.60	6.75
3	Pasilan asema	Tenholantie	2.28	8.37
4	Ympyrätalo	Unioninkatu	4.01	22.77
5	Petter Wetterin tie	Gunillantie	3.56	14.62
6	Tollinpolku	Kauppakeskus Kaari	4.34	25.43
7	Diakoniapuisto	Perämiehenkatu	4.26	16.80
8	Puotilan ostoskeskus	Puotilantie	0.86	5.03
9	Eteläinen Hesperiankatu	Vilhonvuorenkatu	4.63	23.08
10	Tollinpolku	Tollinpolku	1.64	12.37
11	Cygnaeuksenkatu	Leppäsuonaukio	0.72	2.92
12	Mankkaanaukio	Tontunmäentie	3.18	15.15
13	Malminkartanon asema	Tollinpolku	0.35	1.50
14	Heikkilänaukio	Itälahdenkatu	0.47	3.92
15	Westendinasema	Koivusaari (M)	2.97	12.67
16	Agronominkatu	Agronominkatu	8.47	48.53
17	Agronominkatu	Agronominkatu	8.77	48.85

Rows per page: 25 1–25 of 3126466 < >

List Trips View

Single Journey view

Clicking on one of the above records will take you to the single journey view. This shows details of a single trip.

Trip Details

Start Date: 2021-06-30T23:59:07

Start Place: Diakoniapuisto

Distance Travelled: 4.26 km

End Date: 2021-07-01T00:16:00

Destination: Perämiehenkatu


Spent Time: 16.80 minutes

Single Trip View

Station list

This screen uses the same re-usable table component. This allows users to see the list of stations.

The same pagination is available here with the ability to choose number of records visible at a time.

 Helsinki City Bike App

TRIPSSTATIONS

Stations

ID	Station Name	Address
501	Hanasaari	Hanaholmsstranden 1
503	Keilalahti	Kägelviksvägen 2
505	Westendinasema	Westendvägen 1
507	Golfpolku	Golfstigen 3
509	Revontulentie	Norrskensvägen 10
511	Sateentie	Regnvägen 2
513	Hakalehto	Havsvindsvägen 18
515	Oravannahkatori	Gräskinnstorget 1
517	Länsituuli	Västanvindsgården 3
518	Tuulimäki	Östanvindsgården 11
519	Tapionaukio	Tapiplatsen 9
521	Kulttuuriauukio	Kulturplatsen 2
523	Ahertajantie	Flitargården 1
525	Mäntyviita	Tallbysket 2
527	Otsolahti	Björnviksvägen 18
529	Keilaniemi (M)	Kägeluddsvägen 4
531	Keilaranta	Kägelstranden 13

Rows per page: 251–25 of 457

Stations List View

Single Station View

Once the user click on one of the above records, the user is navigated into Station Single View. This view consists of details of a single station including Station name, address, ID, Number of departures, Number of Returns for the station.

Station Details

Station ID: 513

Station Address: Havsvindsvägen 18

Number of Returns: 4648

Station Name: Hakalehto

Number of Departures: 4716