CO2 emission calculator

Your task is to create a program that returns the amount of CO2-equivalent that will be caused when traveling a given distance using a given transportation method.

Organizational

This task has a number of functional and non-functional requirements that are listed below. You should not work longer than 4 hours on this task. Make sure you prioritize the most important requirements first. Please submit your solution even if you were not able to finish everything within 4 hours.

The task should be completed using either Java or NodeJS. Make sure to upload all required files to our submission system (see e-mail for details). Avoid uploading unnecessary files like binaries or dependencies, but please do include a `README.md` that describes how to install dependencies, compile and execute the solution.

If you have questions regarding this task, feel free to send an email and we will get back to you as soon as possible.

CO2 data

For the calculation, please use the following average values.

Transportation methods in CO2e per passenger per km:

- Small cars:
  - `small-diesel-car` : 142g
  - `small-petrol-car` : 154g
  - `small-plugin-hybrid-car` : 73g
  - `small-electric-car` : 50g
- Medium cars:
  - `medium-diesel-car` : 171g
  - `medium-petrol-car` : 192g
  - `medium-plugin-hybrid-car` : 110g
  - `medium-electric-car` : 58g
- Large cars:
  - `large-diesel-car` : 209g
  - `large-petrol-car` : 282g
  - `large-plugin-hybrid-car` : 126g
  - `large-electric-car` : 73g
- `bus` : 27g
- `train` : 6g

Source: BEIS/Defra Greenhouse Gas Conversion Factors 2019

Acceptance Criteria

Functional requirements:

- The tool can be called with a numeric `distance` , a `unit-of-distance` (kilometer `km` or meter `m`) and a `transportation-method`

```
$ ./co2-calculator --transportation-method medium-diesel-car --distance 15 --unit-of-distance km
Your trip caused 2.6kg of CO2-equivalent.
```

- The default value for unit is kilometer `km` .

```
$ ./co2-calculator --distance 1800.5 --transportation-method large-petrol-car
Your trip caused 507.7kg of CO2-equivalent.
```

- The output shows the amount of CO2-equivalent in kilogram `kg` or gram `g`.

```
$ ./co2-calculator --transportation-method train --distance 14500 --unit-of-distance m
Your trip caused 87g of CO2-equivalent.

$ ./co2-calculator --transportation-method train --distance 14500 --unit-of-distance m --output kg
Your trip caused 0.1kg of CO2-equivalent.
```

- Named parameters can be put in any order and either use a space ( ) or equal sign (=) between key and value.

```
$ ./co2-calculator --unit-of-distance=km --distance 15 --transportation-method=medium-diesel-car
Your trip caused 2.6kg of CO2-equivalent.
```

Non-Functional requirements:

- The implemented features are unit tested
- The implementation uses a dependency management tool which allows easy compilation and test execution (e.g. in an CI/CD environment)
- The `README.md` file contains clear instructions on how to compile, test and execute the tool
- Best practices regarding architecture and code style are considered

Hints

- Consider using a library that handles parsing command line arguments (e.g. `yargs` if you use JavaScript)
- Split printing the output from the logic to make testing easier