## Et billede, der indeholder himmel, vej, transport, udendørs Automatisk genereret beskrivelse

## Nordic Motorhome Project

## Case description

Nordic Motorhome Rental is a Danish company that rents out motorhomes. Nordic Motorhome Rental was founded in 2019 and is situated just outside Copenhagen. So far there are 8 employees, but the company is very successful, and the two owners expect to hire more people in the near future.

**Employees**: 4 Sales assistants, 2 Cleaning staff, 1 Auto mechanic, 1 Bookkeeper

**The Fleet**

Nordic Motorhome Rental has a fleet of 32 motorhomes available for hire. Nordic Motorhome Rental currently offers 8 different types of motorhomes. These are of various brands and models. Some are small compact campers for 2 persons and others are large with up to 6 beds.

**Prices per day**

The price per day for rent depends on the brand and model of the motorhome.

Apart from the brand and model price per day also depends upon the season. There are 3 seasons: Peak season, Middle Season and Low season.

In peak season the prices for all motorhomes are 60 % higher than prices in the low season. In middle season the prices for all motorhomes are 30 % higher than prices in the low season.

* The price per day includes 400 free kilometers per day.
* Insurance is included in the price.
* External cleaning is included in the price.

**Pick-up and drop-off points**

Nordic motorhome rental offers delivery of motorhomes to a location that is most convenient for the customers. It is often an airport, but it can be any other location for instance a ferry port or a hotel. For pick-up or drop-off outside Nordic motorhome Rentals office, customers will be charged a transfer cost of 0,70€ per kilometer.

**Extras**

To make the trip more enjoyable customers can rent accessories such as bike rack, bed linen, child seat, picnic table and chairs etc.

**Fuel & driven kilometers**

When customers picks-up the motorhome the tank is full. By drop-off the staff checks the fuel level and reads kilometers of the speedometer. If the tank it is less than ½ full there will be a charge of 70€. If it turns out that the customer in average has driven more than 400 kilometers per day the customer will be charged 1€ per extra kilometer.

**Cancellation**

In case of cancellation following charges become due:

* Up to 50 days prior to the start of the term of rental: 20% of the rental price, minimum 200€
* Between 49 and 15 days prior to the start of the term of rental: 50% of the rental price
* Less than 15 days prior to the start of the term of rental: 80% of the rental price
* On the day of renting: 95% of the rental price

**Service and repairs**

After drop-off the Motorhome will be cleaned. The auto mechanic checks oil & water etc. If repairs or further service is needed the auto mechanic register this.

**Your task**

You are hired to develop a new system for Nordic Motorhome Rental that can handle information about motorhomes, rentals and customers. For this first version of the system the owners and the staff at Nordic motorhome Rentals will be the users of the system. In a future version of the system the customers should be able to make reservations through a web interface*.*

**Note! During the project your ITO teacher represents the owners of Nordic Motorhome Rental.**

As representative of Nordic Motorhome Rental the ITO teacher can help you with:

* Further specification of requirements for the system and acceptance criteria
* Prioritization of requirements

**Project Requirements**

**General requirements**

It is very important that there is traceability from your ITO artifacts to system requirements and UML diagrams and from your UML diagrams to your source code.

**Requirements to ITO**

The report must contain the following:

* Feasibility Study
* Risk analysis
* SWOT analysis for the company
* Stakeholder analysis

**Requirements to software design**

System development must be based on Craig Larman “Applying UML and Patterns”. The methods of the Unified Process, UP, should be followed.

The report must contain the following artefacts:

* A Phase Plan
* A Supplementary Specification
* A Use Case Diagram with at least 6 use cases, of which 3 are described in fully dressed format. Choose 2 of these fully dressed use cases as the basis for further diagrams.
* Identify conceptual classes by drawing a Domain Model.
* Identify system events and record them by drawing 2 System Sequence Diagrams which is further refined to Sequence Diagrams
* Design Class Diagram (DCD)
* Mention at least 3 GRASP responsibilities, where they are used or could have been used in your project.

**Requirements to Software Construction**

Will be added later

**Requirements to report and programme documentation**

You are expected to prepare a project report which documents the system’s development and

implementation. The audience of the report is the teachers.

IMPORTANT:

In the report and source code should it be clear who in the project group is

responsible for which chapter, sections and classes.

The project report, which constitutes the written part of the exam, must as a minimum contain the

following:

* Front page, including title, name and date of birth, class and date
* Table of contents
* Problem statement or question
* Main section
* Conclusion
* Bibliography (including all sources referenced in the project)
* Appendix (only appendices central to the report are to be included)
* A link to a github repository with your source code

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| Number of students | Max pages |
| 1 | 40 |
| 2 | 50 |
| 3 | 55 |
| 4 | 60 |

Front page, table of contents, bibliography and appendices are not included in the required number

of pages. Appendices will not be assessed.

A standard page is 2,400 characters, including spaces and footnotes. Each figure or diagram is

equivalent to 800 characters.

**Project implementation process and guidance**

**The report must be submitted electronically to WiseFlow June 4 no later than 12:00 p.m.**

Students work in project groups. There should be a group contract.

Teachers offer guidance during the specified project period. The guidance takes place in relation to

the present timetable.

The teachers do not read the report or parts of the report before submission.