**ERHVERVS
AKADEMI
SYDVEST**

The Autocamper rental business

- a training project

Class: D20
Semester: 2. semester
Time period (work): Week 17 – 18 , 2021
Subjects: System development (UP), Databases and Programming

Important milestones:
This assignment handed out: Friday April 23rd

Report hand-in: Friday May 7th At 15.00.

Presentation/Oral Feedback: Tuesday/Thursday May 11/13(20 min per group).

The auto camper rental business

The case

The Wagner family is running an auto camper rental business in Schleswig Holstein. Over some years they have developed the business from having a single autocamper to now having a small fleet that are rented to tourists – mainly from Denmark.

For the time being the Wagners have 12 auto campers for renting out – all of them relatively new. No camper is older than 5 years. The business has been quite good for the last years and the family plans to expand and acquire more campers in near future.

The campers are a little bit different according to what they contain and offer. The differences lie in kitchen facilities, no. of beds, heating, space and more.

The campers are classified in 3 price categories accordingly: Luxury, Standard and Basic. Each price category has a price for the main season and a price for the low season – which is quite common in the tourist business.
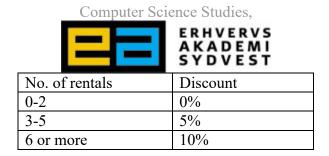
So far – all reservations are done by phone calls and a confirmation is sent to the customer by letter stating all facts about the rental.

In order to avoid abuse the customer must pay a deposit of 10% no later than 2 weeks after reservation. If the rental is canceled for some reason – this deposit is lost.

The remaining amount must be paid no later than 8 weeks before start of the rental period. If the rental is canceled after this payment the customer has lost his/her the money.

The rentals are on weekly basis and the weeks always run from Saturday to Saturday. The campers can be rented for as many weeks as the customer wishes. Some customers come back year after year and are very good for the business.

The Wagners have therefore established a special discount policy rewarding loyal customers as follows:

No. of rentals	Discount
0-2	0%
3-5	5%
6 or more	10%

Payment is done by bank transfer or by bank cheque.

If a customer does not pay the agreed deposit in time a reminder will be sent by letter. If the deposit has not been paid after 5 days, the rental will then be canceled without any notice to the customer.

The rentals always cover free mileage for the first 1000 km. Above this limit the customer must pay 10 cents per km in mile fee. Further the customer must pay for fuel.
The auto campers are always delivered with full tank at rental start and must be delivered back by the customer with full tank. If this is "forgotten" the customer is charged for the fuel missing.

The customer driver must be registered with his/her driver license number.
If any co-drivers they must be registered too. All drivers must present a current, full driving license, which has been held in their country of domicile for at least 12 month.

Insurance is also offered to the customers in 2 packages: Basic insurance, covering
- Collision Damage Waiver (CDW)
- Theft protection Insurance (TLW)

The basic insurance demands a limited self-risk payment by customer.

And Super Cover Plus insurance covering
- All-included (no excess to be paid by the customer)

The Wagners would like to do "Direct marketing" to previous customers and therefore have a list of names and addresses of the customers. But so far, this is only a plan. It has not been done yet. Also reservation on-line on the Internet would be a great progress for their business.

In order to make this possible and to modernize the administration of their auto camper rental business , the Wagners would like to have an IT-system instead of the manual paper/phone system used so far.

This is where you come in. Your job is to develop this system – or part of it.

Requirements for your solution

The main purpose of the project is to get some training within these areas:

- Organizing your work activities according to Unified Process.
- Object modeling (object design)

- Database modeling, JDBC, stored procedures.

It's important to realize that your main goal should **NOT** be to make a complete system – by doing it the "quick-and-dirty" way. It's more important to try to implement the ideas from your lessons lately correctly.

The database used in the project must be *SQL Server*.

The system development method must be UP with documentation in UML.
We expect these artifacts to be present and explained in the report:
Use Cases (only one fully dressed).
Domain Model.
Data Model (ERD)
Data Dictionary.
SSDs
At least one Sequence-diagram.
The Architecture (layered) in a diagram.
The (final) Design Class Diagram.

Also explain *how* patterns are applied shortly – for example GRASP, Singleton, Dao, Strategy *but always discuss a pattern together with a code example from with-in the project!*

The programming language must be Java – here it is important that you have "waterproof" consistency between your UML artifacts (documentations behind the code) and the Java code itself.
Furthermore: The UI should be simple JavaFX, and at least two methods must be Unit-tested.

Hand-ins:

You must use moodle to hand in the report (approx. 10 pages) + source code (also database queries, stored procedures etc.) + UP artefacts.
See the document: *guidelines for report writing.pdf*
Finally, you must prepare and make a short presentation (PowerPoint) of the designed solution – this must be ready for the 11th of May.

/The teachers: Karsten, Frank and Tommy