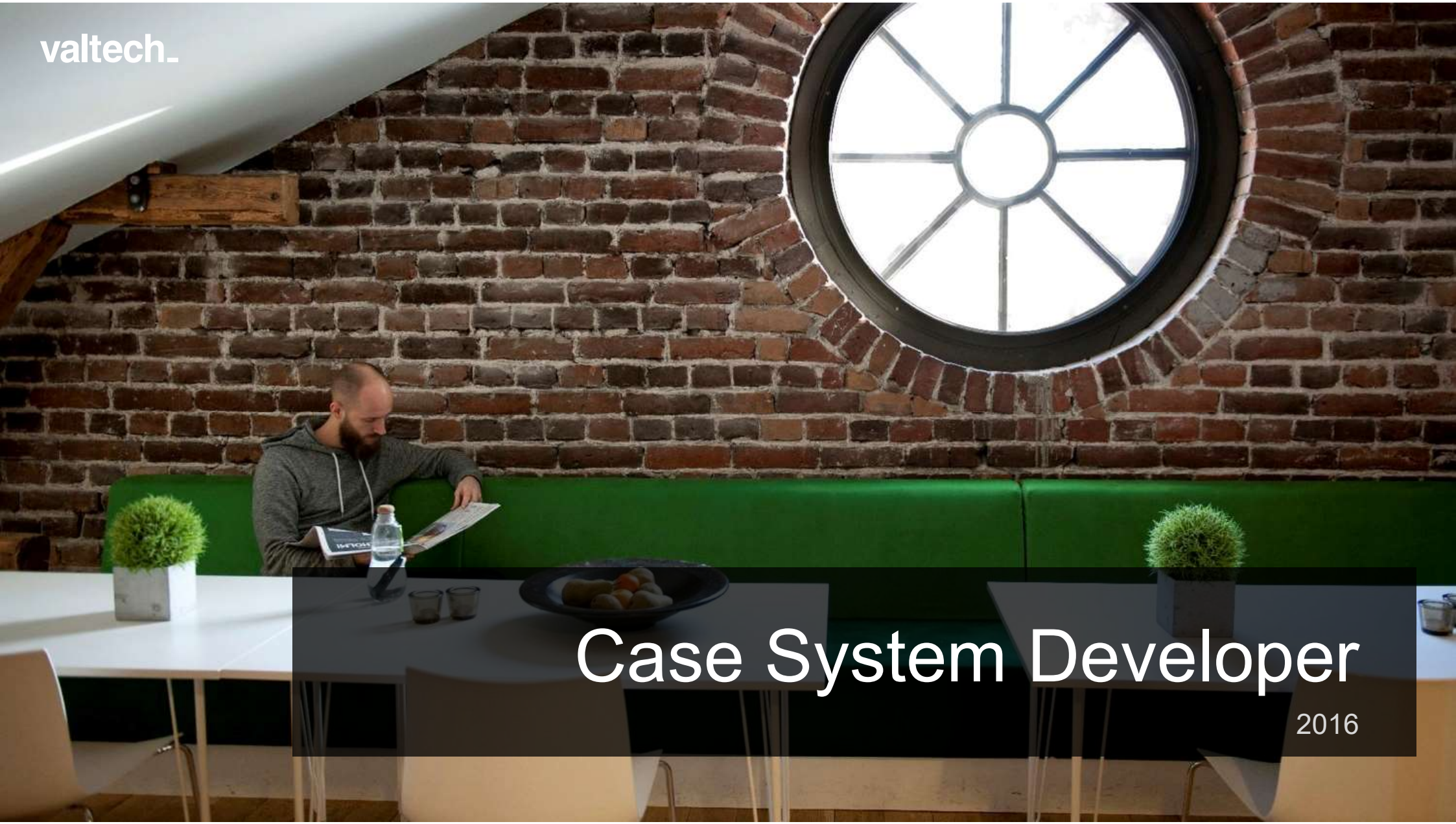

Case System Developer

2016

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Instructions

Expect that your presentation will take 1 hour including questions from the participants. There will be 3 to 5 people with mixed skills and experience listening. Be prepared to answer questions from both customer and colleague perspectives.

Start your presentation with a brief description on how you interpreted the task and how much preparation time you put in. Try to limit the preparation time to 8-10 hours. You are free to decide how you allocate the time between the different tasks.

We are mainly interested in the technical solution and will focus on your code. We would like to see modern technologies and innovative solutions. Therefore, do not spend unnecessary time and effort to achieve full perfection.

…and remember: clean code is written by someone that cares.

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Save the assignment

When you are finished with the task you upload your solution, source code and presentation materials to a shared folder on Valtech's Dropbox. Only you and a few Valtech employees involved will have access to the uploaded material.

Instructions for how to access the Dropbox folder will be sent to you together with this material.

- Open the shared folder with your personal link.
- Save all the files for your case assignment to the folder individually or as a zip archive.
- Let us know when you are done.

We will need your material at least two work days ahead of the presentation.

Don’t hesitate to get in touch with us if you have questions.

Good luck!

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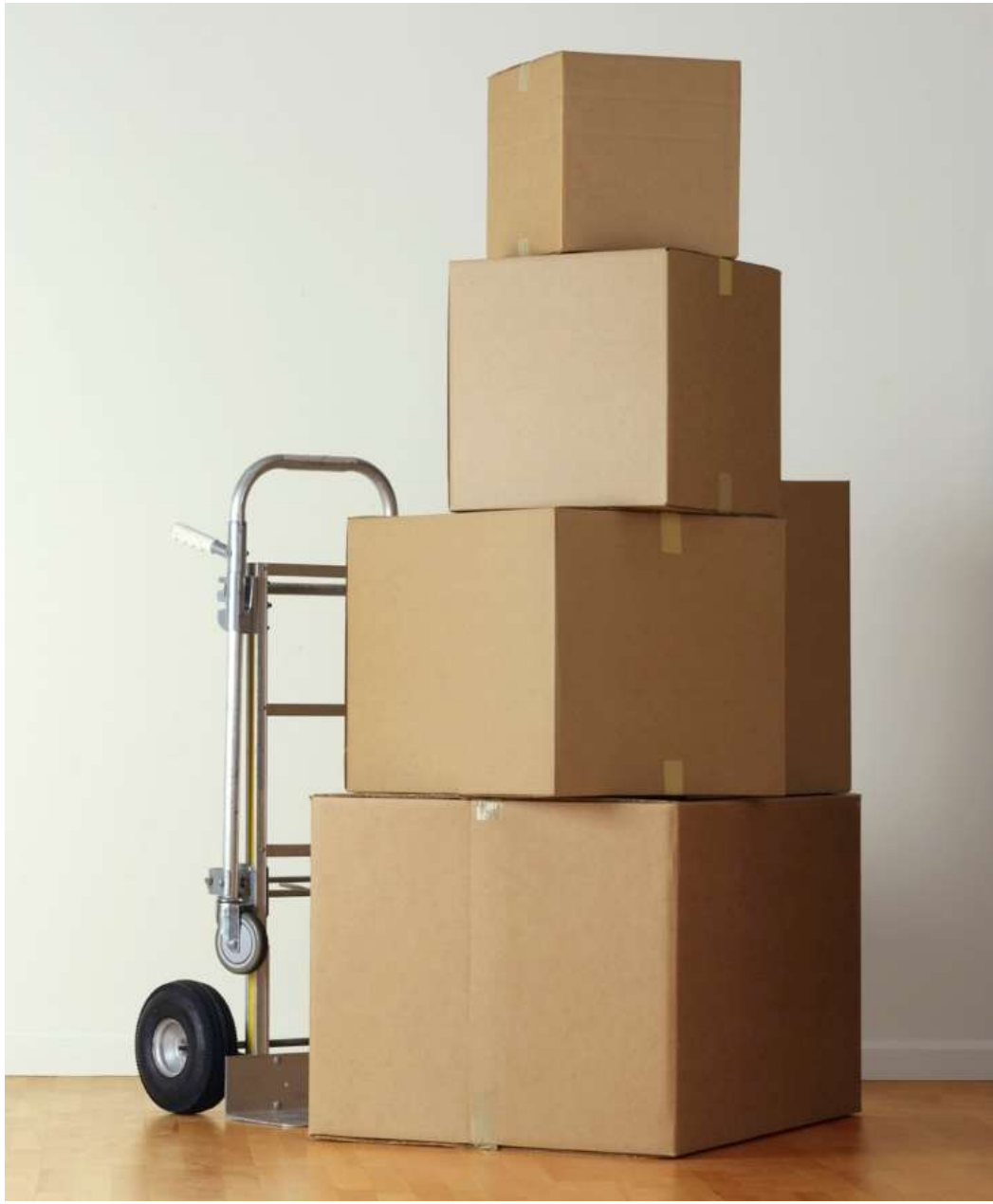
Case assignment

Your task is to build a web application for the fictious moving company MoveIT. You are free to chose any technology or framework, but please motivate your choice(s). The deliverable should contain executable code.

We want to see code you have written, rather than code auto generated by a development environment.

Look upon this as an opportunity to show us your skills!



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Background

MoveIT has a long background of providing moving services, but lately they are experiencing that they lose potential customers because it’s complicated to get a a price offer. MoveIT have therefore decided to develop a web API, that clients can use for price inquiries.

This is the first step in MoveIT’s long term plan to be the brand of choice when moving. The company wants a solution that in the future could be sold as a service and they wish to see an architecture that could be easily extended and manage high load. Mobile apps for multiple platforms or integrations with other web apps are examples of things that could be considered in the future.

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The task

The task is to develop a first version of the solution, where clients can make price inquiries and also place orders.

MoveIT have defined a number of business rules for price calculation and a basic conceptual sketch.

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Business rules

Distance The price depends on the distance of the move, where the total distance makes the price calculation end up in one of the following categories:

- 1000 SEK + 10 SEK / km for distances above 50km
- 5000 SEK + 8 SEK / km for distances above 50km and below 100 km
- 10000 SEK + 7 SEK / km for distances above 100 km

Volume

Given a volume, calculated from the number of square meters of the living area, one or more cars are needed. For every 50 m2 an extra car is needed and each car costs the actual distance price calculated according to the table on the right. Basement and attic areas are expected to contain twice the volume as regular living areas.

Piano

Due to extra handling the price for moving a piano is an extra 5 000 SEK. This is regardless of distance and volume.

Distance	Price
10 km	1100 SEK
49 km	1490 SEK
50 km	5400 SEK
51 km	5408 SEK
99 km	5792 SEK
100 km	10700 SEK

Table 1. Calculation of distance price

Living area	Attic area	# of cars	Distance price / car	Price
49 m^2	0 m^2	1	1100 SEK	1100 SEK
10 m^2	25 m^2	2	1100 SEK	2200 SEK
50 m^2	0 m^2	2	1100 SEK	2200 SEK
100 m^2	0 m^2	3	1100 SEK	3300 SEK
150 m^2	0 m^2	4	1100 SEK	4400 SEK

Table 2: Calculation of volume price

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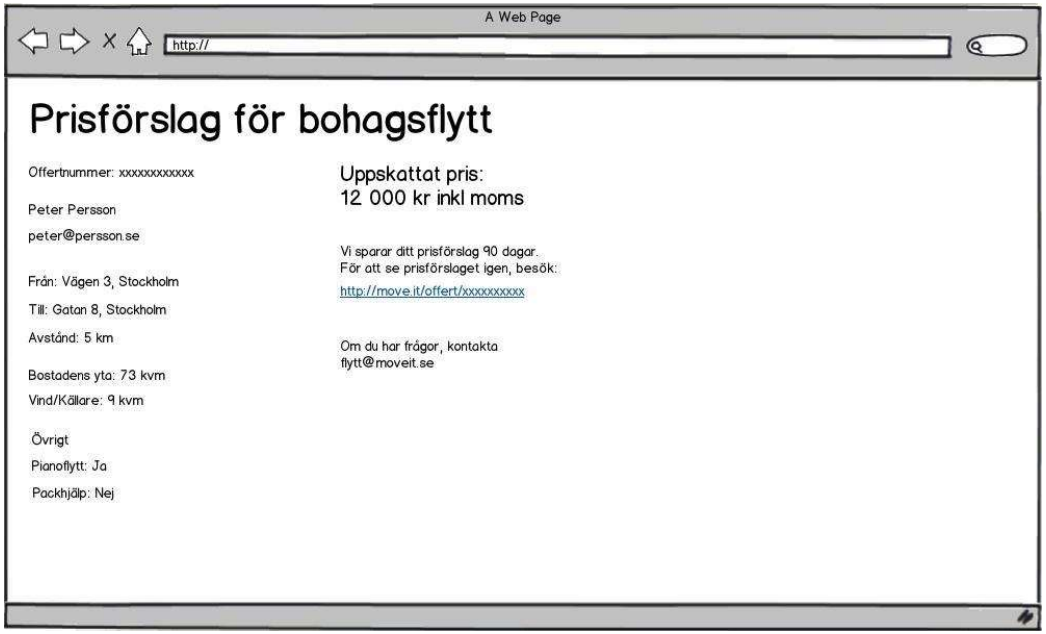
Conceptual sketch

MoveIT have worked out a basic concept for one of the pages.

(The sketch is in Swedish, but you will figure it out)



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Acceptance criterias

To solve the task, the following criteras must be fulfilled:

- Price calculation must be according to the business rules
- The solution must be based on appropriate interaction design
- In the future, proposals should be saved, in order for sales representative to be able to follow up on potential customers.
- When a user has completed the price proposal data, it should be possible to return to the proposal in the same app.
- A client should only have access to his/her own proposals.

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Bonus task #1

Split the web application in two parts:

- A service exposing the price calculation
- A web interface consuming the price calculation service

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Bonus task #2

As is apparent from the background to the case assignment, MoveIT foresees a future where the service will be productified.

To achieve this and to meet the overall requirements of, for instance, scalability and load, a well thought out architecture is required.

Thank you!