Tech Screening

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Chapter 1. Assignment

1.1. Introduction

To help organizations in creating a better workflow we want you to create a new application: an API which can predict the duration of the sickness of an employee and create letters for the employees based on this prediction. Full requirements are described in the enclosed business case on the following pages.

1.2. Focus

The focus of this screening is on the quality you deliver. We are not only interested in the choices you made but also in the shortcuts and decisions you made. Some of the subjects we might discuss during the review are:

- Security
- Testability
- Data validation
- Quality
- Architecture

1.3. The Rules

First of all: the rules are not to be taken strictly. You can spend more time if you want, as long as you explain why. We use this assignment to have a good conversation and insight into how you work. Don't worry if you made mistakes or if your application does not work.

- Do not spend more than two hours. Pick what you think is important and do it well.
- We do **not need a fully functional product (but it would be nice if we could run something)**.

- Quality is more important than quantity.
- Deliver your product 24 hours prior to the scheduled interview. You can send it via e-mail, we-transfer or a private GitHub repository (preferred!). You can invite 'florisz' and 'jacobduijzer' to your GitHub repository.
- Please send an email to the following persons so we know you have send us the materials: Floris Zwarteveen (f.zwarteveen@itandcare.nl) and Jacob Duijzer (j.duijzer@itandcare.nl).

Do know: Do not hesitate to contact us if you have any questions and try to have a bit of fun too!

Chapter 2. Business Case

2.1. Introduction

Everybody wants to stay healthy. Healthy at home and healthy at work. We, at IT & Care, create software to help employers, employees, company doctors and health advisors to manage everything concerning health management. To prevent sicknesses of any kind and to manage the flow of information when people are sick and trying to get back to work again. Being sick can be a challenge for both companies and individuals. But not only is it a challenge, it is very costly too, substitutes for employees need to be found, doctors need to be visited.

2.2. The Application

We want you to deliver a proof of concept for a new application: a prediction application. The application predicts how many weeks it will take before the employee can get back to work. Based on this prediction different letters need to be created to invite the employee to fill in a questionnaire or to visit a company doctor. These letters can be stored as files or shown on the screen. Make sure the letters are correctly personalized and provided with the correct information. There are some specifications for the application:

Validation Rules

- Clients cannot be under the age of 14.
- We must know the physical address of the client.

2.3. Business Rules

- Only valid clients can receive letters.
- Based on the prediction a client will receive a different letter:

Prognose	Type of letter
1 - 2 weeks	Letter with a link to a questionnaire.
3 - 4 weeks	Letter with a telephone appointment.
> 4 weeks	Letter with an invitation for a physical visit.

- Prediction is based on the following data:

Gender	Sickness Type	Age Group	Prediction
Female	Physical	<25	1
		25 - 34	2
		35 - 44	2
		45 - 60	3
		60+	3
Female	Mental	<25	4
		25 - 34	6
		35 - 44	8
		45 - 60	10
		60+	12
Male	Physical	<25	2
		25 - 34	2
		35 - 44	3
		45 - 60	3
		60+	5
Male	Mental	<25	5
		25 - 34	7
		35 - 44	8
		45 - 60	10
		60+	11
Other / Unknown	Physical	<25	1
		25 - 34	2
		35 - 44	3
		45 - 60	3
		60+	4
Other / Unknown	Mental	<25	3
		25 - 34	4
		35 - 44	5

Gender	Sickness Type	Age Group	Prediction
		45 - 60	6
		60+	12