Remote Tasks

Software Support Engineer

TRANSPORE()N
Delivering connections

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Hello there!

Glad you are interested in our Customer Care position!

Please choose exactly two of the three tasks below and do as much as you can in the given time. If you cannot manage to complete the selected tasks perfectly due to lack of experience with the topic, it is no big deal.

Please send in your solutions in time and include comments where necessary while taking into account the agreed deadline.

If you suspect that different assumptions could fit in a formulation of the tasks, then simply decide on one and solve accordingly and send us the reasoning.

However, if anything else is unclear, you are also welcome to contact us.

Have fun solving!

1.   XML / XSL-Transformations

In this task you must create a small XSL transformation.

The situation:

With the help of XSLT, XML documents can be transformed from one structure into another.

We often use this to transform the XML format of customers into ours, or vice versa.

Task:

TRANSPOREON customer "Bäckerle GmbH", a manufacturer of deep-frozen Swabian specialties, would in future only like to have data relevant to it exported in its own Swabian XML format and no longer our TRANSPOREON internal standard Transport XML.

For this you need an XSL transformation that transforms the TRANSPOREON XML into the Bäckerle XML format.

The following is provided for this purpose:

- *TRANSPOREON_standard_export_example.xml*
    - An example transport in the standard TRANSPOREON format.
- *Baeckerle_E-Mail.txt*
    - Bäckerle IT has written to us with the instructions of which elements from the stand-ard format they expect the content to be in their elements.
- *TRANSPOREON_to_baeckerle_transformation.xsl*
    - Basic framework of an XSL transformation as a starting point for you, but you can also use your own.

General hints:

- All technical processes outside the transformation can be ignored - you only have to care about the transformation.
- All data transformed into Swabian is expected in the XML elements (not attributes).
- It can be assumed that all transports in the TRANSPOREON standard format have the same number of elements/structure as the example.

2. Regular Expressions

In this task you must create different regular expressions.

The situation:

Regular expressions are used in many different IT areas, e.g. when searching log files for certain patterns.

They are also frequently used on our platform, e.g. to validate user input in the application interface of our online platform.

Task:

Write regular expressions to validate the following inputs:

1. Positive rational number with two decimals

   - Separated with point or comma, no thousand separators
   - Positive example: „123456.78"

2. Alphanumeric input of at least 5 characters

   - Caret („^") should also be allowed.
   - Positive example: „lore^5^iPsum"

3. Telephone number from Ulm or surroundings

   - All entries have the same format and length.
   - Ulm and the surrounding areas are defined as "numbers beginning with +49 73".
   - Positive example: „+49 733 456 789"

4. HTML Hex colour code in which green is used.

   - All entries have the same format and length.
   - Positive example: „#111111"

5. File names that start with "transport+" and end with ".xml".

   - Positive example: „transport+123456+789.xml"

6. BASE64 Compliance

   - Positive example „dGlzeXM0eW91IQ=="

7. Password with restrictions

   - Minimum 8, Maximum 80 characters
   - Must contain numbers and letters, but not "123456" or "password".
   - Must contain a special character from "@ ? * # +)\ /: $".

General hints:

- Here is an example of a regular expression to limit an input to a 10-digit number: "^\d{10}$".
- You will definitely need an online validator for regular expressions for this task.

3. Browser Extension/Add-on

In this task you are to add new functions to the provided browser extension "Support-o-mat" (Chrome/Firefox).

The situation:

Browser extensions can be installed locally and influence the display of websites, e.g. like an ad blocker that hides advertising, an extension can also adapt the structure of a page in any other way.

We in the team also use a small browser extension that makes some of our daily tasks easier.

Task:

The Add-On should do the following tasks on https://www.google.de:

1. The standard white background should always be automatically changed to Transporeon yellow (= "#FCC31F").

2. The Google logo above the search entry should disappear 20 seconds after the page has been loaded.

The Add-On should do the following task on https://www.transporeon.com/:

3. In all text elements on the entire homepage (and all subpages) in which the word "Transporeon" appears, this should be replaced with "TRANSPOREON".

The Add-On should do the following task on https://www.youtube.com/:

4. Read the attached article "URL_ One more character and Youtube is ad-free - Golem.de" and implement the described "workaround".

The Add-on should generally be able to do the following:

1. The add-on has an icon in the extension toolbar that shows a pop-up with functions. This pop-up is to be extended by a function that opens a new, pre-filled e-mail for the user after selection (subject/recipient/text can be freely selected).

General hints:

- https://developer.chrome.com/extensions/getstarted (recommended)

- https://developer.mozilla.org/en-US/docs/Mozilla/Add-ons/WebExtensions/Your_first_WebExtension

- The Add-on is written in JavaScript. You don't necessarily need a development environment for it (a text editor is sufficient), but if you do, Visual Studio Code is free and recommended.

- Send us your solutions as .zip files.

- Should one of the websites for the tasks be unavailable, you can think of an alternative website yourself where the tasks can be completed.