

Application web frontend + API backend

An application must be created as a combination of an API backend and a web frontend with these functions in two versions:

1. user login (version 1, version 2)
2. user text input only alphabet (version 1)
3. user text input alphabet + numbers (version 2)
4. calculation of amount of words (version 1, version 2)
5. calculation of palindrome words (version 1)
6. calculation of numbers inside the text (version 2)

The ****result**** expected is:

- web server that runs on localhost:4000, available web application open browser at localhost:4000/
- authentication and protection of frontend routes and API for function 2,3,4,5,6
- validation of inputs and display of errors on web frontend
- Correct functionality against different inputs

Web frontend

- Angular application (version >= 13)
- Two routes:
 - Login
 - Words counter (protected)
- application will run in an environment with internet connection
- Two languages available for the users (English, German)
- Errors coming from API response must be displayed as toaster/snackbar for 3s.

Login / Anmelden

User must be able to enter two text inputs, username and password, press a button and going automatically to the next page on success.

- username (required): field must accept a text input between 4 and 20 chars. Spaces at end and beginning must be corrected in behalf of users, no space allowed between words

- English: Username
- German: Benutzername

- password (required): field must accept a text input between 8 - 25 chars.

- English: Password
- German: Kennwort

Login button text:

- English: Login
- German: Anmelden

Validation errors to be displayed to user:

- username:
 - English: Please enter a valid first name with 4 to 20 letters.
 - German: Bitte geben Sie einen gültigen Vornamen mit 4 bis 20 Zeichen ein.
- password:
 - English: Please enter a valid first name with 8 to 25 letters.
 - German: Bitte geben Sie einen gültigen Vornamen mit 8 bis 25 Zeichen ein.
- empty field(s):
 - English: Please fill all required fields.
 - German: Bitte füllen Sie alle benötigten Felder aus.

API errors:

- User not existing / not valid field:

- English: Invalid user credentials.
- German: Ungültige Benutzeranmeldeinformationen.

Words counter / Wörter Anzahl

User must be successfully logged in to enter in this page, be able to enter one single text field, press a button and see the amount of words entered below the text input. Pressing another button cleans the input and the previous calculation.

- Text input: string between 10 - 390 chars, one space allowed between words, spaces at end and beginning must be corrected in behalf of users.
 - version 1: only alphabet allowed (no underscore)
 - version 2: alphabet and numbers allowed (no underscore)
- English: Text
- German: Text
- Submit button:
 - English: Calculate
 - German: Berechnen
- Clear button:
 - English: Cancel
 - German: Löschen
- Words counter:
 - English: Words amount:
 - German: Wörter Anzahl:
- Palindrome words counter:
 - English: Palindrome words amount:
 - German: Palindrom Wörter Anzahl:
- Numbers counter:
 - English: Numbers amount:
 - German: Zahlen Anzahl:

Validation errors to be displayed to user:

- too short too long text entered
 - English: Please enter a valid text with 10 to 390 chars.
 - German: Bitte geben Sie einen gültigen Text mit 10 bis 390 Zeichen ein.
- not allowed chars version 1:
 - English: Please enter alphabet only letters.
 - German: Bitte geben Sie nur Buchstaben des Alphabets ein.
- not allowed chars version 2:
 - English: Please enter alphabet letters and numbers only.
 - German: Bitte geben Sie nur Buchstaben und Zahlen ein.

API Errors in this case are the same as the above ones, not necessary to display in a toaster/snackbar, just display as the above.

Required styling

- User MUST see a centered card with necessary fields for both pages
- Colors:
 - primary: #002850
 - accent: #1496b4 (only for button hover effect)
 - text color: #FAFAFA (dark backgrounds) #002850 (light backgrounds)
 - field error text: #cc0000
 - snackbar background error: #cc0000
 - snackbar text: #FAFAFA

Everything not fixed above, can be done as wanted.

API Backend

API backend expose to the frontend all necessary HTTP endpoints with proper HTTP methods for these actions of the user:

```

- login
- calculate (protected)
Allowed frameworks library with relative middlewares eventually (choose
one):
  - Express.js
  - uWebsockets.js
Users allowed to login can be on a file loaded at start.
### Users
| Username | Password |
|---|---|
| John | Password@1 |
| Aldo | canePassword#2 |
| Juan | herman0?123 |
All password must be saved in the file as sha256 hash.
### Login
Endpoint must accept only two properties:
- username: validation as for frontend above.
- password (clear text): Validation as for frontend above.
Password check must be against sha256 hash.
An error must be sent in the response for user not existing or invalid
property.
### Calculate
Endpoint must be protected, only authenticated user are allowed to
consume it, and must accept only one property:
- text input: validation as frontend above.
The calculation must follow these rules:
- one word has one white space before and one white space after
- one word has a punctuation before (with or without space) and a
punctuation after (without space)
- a palindrome word reads the same backwards as forwards, i.e: kayak,
otto, deed, noon...
- one word containing numbers must not be calculated as a word
- numbers must be counted as single digits, i.e.:
  - " word123" contains 3 numbers
  - "12aki 9999" contains 6 numbers
## Notes
German alphabet contains some special chars
https://en.wikipedia.org/wiki/German\_orthography#Alphabet
## Inputs examples
### Login:
```
username: John
password: Password@1
```

username: John
password password
```

Text field
```
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed dapibus eu
nibh a volutpat. Vestibulum eu mauris porta, iaculis elit quis, venenatis
nunc. Ut eu orci id ipsum porttitor blandit. Vestibulum rutrum ipsum ut
ante congue vulputate. Nullam rhoncus urna vel massa dignissim congue.

```

Proin porta ipsum a sodales pretium. Quisque lacinia justo quis justo vestibulum pretium.

```\n```\n

Lorem ipsum dolor sit amet, consectetur11 adipiscing elit. Sed dapibus eu nibh a volutpat. Vestibulum eu mauris porta, iaculis elit quis, venenatis nunc. Ut eu orci id ipsum porttitor blandit. Vestibulum rutrum ipsum ut ante congue vulputate. Nullam rhoncus urna vel massa dignissim congue. Proin porta ipsum a sodales pretium.

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Fusce mattis 2magna eget diam feugiat, vel convallis ipsum placerat. Nullam a enim mi. Duis lacus quam, repaper vulputate vel vulputate eget, pulvinar sit amet nibh. 123Ut ullamcorper pharetra neque quis venenatis. Donec eget maximus augue, eu commodo 4urna.

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Deutsches Ipsum Dolor deserunt schnell has Knappwurst Tollit Schnaps ius Hochzeit Saepe Apfelstrudel elaboraret Fußballweltmeisterschaft ne, bitte eu Audi pertinax, schnell eripuit über no Knappwurst Diam genau no Aufenthaltsgenehmigung eos Schnaps suscipit Schmetterling Eam Welt offendit Oktoberfest ad Ich bin ein Berliner voluptatibus Köln ad Bildung consul Brezel vix.

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