

Written requirements

~ Project requirements ~

Note! Please find some hints on solving these tasks at the bottom of this page.

First Name:

- Does not contain any other characters besides letters.
- It starts with a capital letter and all the other letters are lowercase.
- Is at least 2 characters long.

Last Name:

- Does not contain any other characters besides letters.
- It starts with a capital letter and all the other letters are lowercase.
- Is at least 2 characters long.

Date of birth:

- The person was born before January 1st 2002.
- Contains only digits and forward slashes.
- Follows the format MM/DD/YYYY

Email address:

- Follows the correct format: username@domain.extension
- The username may contain only letters, digits, dots or the underscore character.
- The domain may contain only lowercase letters.
- The extension may contain only 2, 3 or 4 lowercase letters.

Username:

- Does not contain any other characters besides letters, digits or the underscore character.
- Has a minimum of 6 characters and a maximum of 12 characters.

Password:

- Is at least 8 characters long.
- Starts with a lowercase letter.
- Should contain at least one lowercase letter, one uppercase letter, one digit and one of the following characters: \$, &, ?, ! or %.

Credit card number:

- The card should be issued by Visa or Mastercard only (starting with a 4 or a 5).
- It is exactly 16 digits long and contains no other characters besides digits.

Credit card expiration date:

- Is not sooner than May 2024 inclusively.
- Contains only digits and forward slashes.

- Follows the format MM/YY

Credit card verification code / verification value (CVC / CVV):

- Is a 3 digit number, does not contain any other characters.

~ Hints for solving some of the project tasks ~

- **Date of birth:** Regarding the date of birth - the application validates this value only if the date is before January 1st 2002, in the required format, meaning 12/31/2001 for instance. So, any month from 01 to 12 is valid; any day from 01 to 31 is valid; and any year from prior to 2002 is valid. Therefore, to specify any of these ranges, you will need to use character classes and OR operations, using the pipe metacharacter. Don't forget about the forward slashes separating the month, day and year!
- **The password:** The password should start with a lowercase letter (character class here) and be at least 8 characters long, with no upper limit. For specifying the types of characters that the password needs to contain I would use character classes. Also, for signaling that the password should contain each of these classes (lowercase letters, uppercase letters, digits and the special symbols), I would use several positive lookahead assertions for each character class.
- **Credit card expiration date:** After writing the pattern for the date of birth, the one for validating the credit card expiration date should be a bit easier to conceive. Nonetheless, this is a different pattern that needs special attention. The credit card should not expire sooner than May 2024, and the date needs to follow the MM/YY format - this would be 05/24 in our case. So, split this issue in two - the rest of the year 2024 starting from May, and then any subsequent years, with no upper limit. So, you will need several OR operations - mind your pipe metacharacters, as well as some thought process on how to match the 05-12 months in 2024, and then all the other months from 2025 onwards.

Note! For the rest of the tasks (not included in the **Hints** section) you should be able to easily find a solution given all the information we discussed throughout the course. The three tasks that I have provided hints for are indeed more complex, however they can also be solved using the concepts and syntax we discussed in the course - so you already have all the tools and knowledge to solve the entire project if you watched all the videos, took notes, wrote the

code alongside me, solved the quizzes and the exercises that I provided.

Good luck and have fun!